GNU Solfege 3.16.bzr-checkout Manuel utilisateur

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Chapitre 1. Introduction

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Bienvenue dans GNU Solfege

Solfege est un logiciel libre d'entraînement de l'oreille musicale. Il fait partie du Projet GNU. Regardez la section intitulée « Ressources en ligne » pour en savoir plus sur les listes de diffusions et où trouver la dernière version de Solfege.

L'une des idées de ce logiciel, c'est que vous pouvez l'étendre sans avoir à vous plonger dans le code source. Si vous voulez travailler certains accords particuliers, ou composer des dictées sur une musique qui n'est pas présente, vous pouvez écrire vos propres leçons. Placez-les alors dans un sous-répertoire `lessonfiles/` de votre répertoire `$HOME`. Si vous écrivez de bonnes leçons, pensez à les partager en les envoyant à la liste de diffusion : je pourrai alors les ajouter à la prochaine version du logiciel.

Bogues

Informez-nous des bogues rencontrés en utilisant le bug tracker sur cette page

Merci de faire des rapports de bogues détaillés. "J'ai un message d'erreur dans une fenêtre lorsque j'essaye de lancer le programme" ne m'est d'aucune utilité. Lorsque vous rapportez des bogues :

- Dites moi quelle version de Solfege vous utilisez. Vérifiez SVP si une nouvelle version est disponible. Si vous voulez seulement utiliser des versions stables, n'essayez pas les versions de développement les plus récentes.
- Quel système d'exploitation utilisez vous ? Quelle version ?
- Décrivez exactement ce que vous faisiez lorsque l'erreur est apparue.
- Envoyez une copie exacte du message d'erreur. Si vous n'y comprenez rien, dites-vous bien que c'est différent pour les développeurs.

Ressources en ligne

La page d'accueil de Solfege est http://www.solfege.org. Il y a aussi une page moins fournie avec de l'info plus statique à http://www.gnu.org/software/solfege/.

Télécharger Solfege

Le code source est disponible depuis http://ftp.gnu.org/gnu/solfege. Si vous aimez l'aventure, vous pouvez essayer les versions instables depuis http://alpha.gnu.org/gnu/solfege. Ces versions peuvent contenir plus de bogues, mais vous aurez aussi l'occasion d'essayer de nouvelles fonctionnalités, de détecter des bogues et d'en faire le rapport.

Le code source et des fichiers binaires précompilés sont disponibles à l'URL : http://sourceforge.net/project/showfiles.php?group_id=1465

Si vous utilisez Debian, vous pouvez exécuter **`apt-get install solfege`** pour télécharger et installer le programme.

Listes de diffusion

<solfege-announce@lists.sourceforge.net>

Très peu de trafic, modérée et utilisée pour annoncer les versions stables de Solfege. (Inscription | Archive)

<solfege-devel@lists.sourceforge.net>

Si vous voulez rapporter un problème d'installation ou d'execution de Solfege, ou si vous avez des questions, des commentaires ou des idées sur la façon d'améliorer Solfege, merci de poster un message vers cette liste plutôt que vers le forum de Sourceforge ou que directement vers l'auteur. Vous pouvez poster des messages à solfege-devel sans vous inscrire. (Inscription | Archive)

<bug-solfege@gnu.org>

L'adresse GNU standard pour envoyer des rapports de bogues. Cette liste est actuellement renvoyée vers <solfege-devel@lists.sourceforge.net>

Fenêtre des préférences

Instruments

Tempo

Régler le tempo (en battements par minute) de la musique et des arpèges. Ces valeurs sont utilisée dans les exercices qui sont écrits avec les modules suivants : `compareintervals`, `harmonicintervals`, `idtone`, `melodicinterval`, `singchord`, `singinterval`, `twelvetone`, `rhythm`, `identifybpm`, `nameinterval`. Dans les autres exercices, le tempo eest réglé soit dans le fichier leçon, soit dans la page de configuration de l'exercice.

Instrument préféré

Choisit l'instrument Midi et le volume pour la plupart des exercices.

Instruments harmoniques

Solfege peut utiliser trois instruments différents pour jouer les accords. L'un pour la note la plus haute, l'autre pour la note du milieu et le dernier pour la basse. Ceci vous aidera si vous avez du mal à entendre les notes individuelles des accords.

Instrument à percussion favori

Choisissez l'instrument de percussion qui sera utilisé pour compter avant le début des questions

rythmiques, et l'instrument qui sera utilisé pour jouer la question.

Utilisateur

Solfege utilise cette information dans les quelques exercices au cours lesquels l'utilisateur doit chanter.

Note la plus basse/haute que l'utilisateur peut chanter.

Ces boutons défilants indiquent à Solfege la note la plus haute et la note la plus basse que l'utilisateur peut chanter . Ces valeurs sont utilisées par le logiciel seulement dans la mesure du possible. Par exemple, si les notes en question sont fixées au `do2` (sous la clé de fa) et au `do3` (médian), et que vous avez configuré le programme pour qu'il vous demande de chanter des dixièmes, il faudra tout de même chanter certaines notes en dehors de l'intervalle pré-défini.

Sexe

Solfege a besoin de savoir si l'utilisateur est un homme ou une femme pour pouvoir créer certaines questions dans lesquelles l'utilisateur devra chanter la réponse. En effet, la voix masculine se situe généralement une octave en-dessous de la voix féminine.

Programmes externes

Solfege va rechercher dans le PATH les programmes que vous avez entrés sur cette page. Il n'est donc pas nécessaire d'indiquer le chemin complet, sauf si les programmes sont installés en dehors du PATH.

Convertisseurs

Founissez les lignes de commande qui permettent de convertir entre divers formats audio. `%(in)s` sera remplacé par le nom du fichier à convertir, et `%(out)s` par le nom du fichier résultat de la conversion. Dans le cas où le logiciel sauvegarde automatiquement dans un nouveau fichier avec l'extension correcte, il n'est pas nécessaire de fournir `%(out)s`.

Lecteurs audio

Les lignes de commande qui peuvent lire divers formats audio. `%s` sera remplacé par le nom du fichier à lire. Si vous n'incluez pas un `%s`, le nom du fichier sera ajouté à la fin de la chaîne.

Divers

Quelques exercices utilisent les programmes CSound et MMA. IL faut Lilypond-book pour pouvoir imprimer les les exercices de dictée musicale, et LaTeX si on les veut au format DVI - sinon c'est du HTML.

Si le fichier que vous fournissez se termine par `.py`, alors votre script tournera sur le même interpréteur que Solfege lui-même.

"Logiciel de messagerie" définit la commande qui lance le logiciel de messagerie quand vous cliquez sur une adresse électronique dans le manuel utilisateur.

Interface

Afficher le manuel utilisateur dans le navigateur : c'est une alternative à l'affichage dans le navigateur spécial incorporé dans le logiciel.

Fenêtre principale redimensionnable : Permet à l'utilisateur de redimensionner la fenêtre principale de Solfege.

Choisissez la langue : Vous pouvez choisir manuellement la langue que vous voulez au cas où Solfege ne détecte pas correctement la vôtre, ou encore si vous voulez faire fonctionner le programme dans une langue qui n'est pas celle de votre système d'exploitation.

S'entraîner

Ne pas autoriser à passer une nouvelle question tant que la question courante n'est pas traitée correctement : Inactive le bouton 'nouveau' jusqu'à ce qu'il ait été répondu correctement à la question ou que l'utilisateur clique sur "abandonner".

Répéter la question si la réponse est mauvaise : Répète le son à nouveau lorsque l'utilisateur donne une réponse inexacte.

Mode expert : dans les exercices utilisant les modules idbyname et idproperty, choisir cette option vous permet de vous entraîner sur un sous-ensemble des questions du fichier leçon. En mode expert, aucune statistique n'est générée.

Configuration du son

Paramètres Midi

Il y a trois façons de créer le son :

Pas de son :

> A utiliser pour le débogage ou lorsque vous portez Solfege sur un autre système. Aucun son n'est émis et les évènements midi sont imprimés sur stdout.

Utiliser le périphérique :

Le meilleur choix est habituellement `/dev/music` car il a le meilleur support pour les instruments de percussion. `/dev/sequencer2` est généralement un lien symbolique vers `/dev/music`. Si votre système n'a pas `/dev/music`, vous pouvez le créer en tant que root avec cette commande (si vous utilisez le noyau linux version 2.2 ou supérieure) :

cd /dev mknod music u 14 8

Sous MS Windows, ce choix porte l'étiquette `Windows multimedia output`.

Utiliser un lecteur Midi externe :

Cela peut être utile pour des systèmes qui n'utilisent pas OSS, ou si vous avez un mauvais synthétiseur Midi sur votre carte son et désirez utiliser timidity.

Editeur de jeu de test

Sur l'interface d'édition des jeux de test, vous pouvez créer des fichiers de travail au format MIDI/WAV/MP3/OGG que vous pouvez ensuite transférer sur votre agenda électronique, téléphone portable ou lecteur MP3. Un fichier de solutions, à imprimer, est généré. Alotrs vous demandez à votre lecteur MP3 de vous passer les pistes dans un ordre aléatoire, et vous utilisez la page des solutions pour vérifier que vous avez bien reconnu les extraits musicaux.

Utilisez l'interface d'édition de matériel d'entraînement pour définir quels sont les exercices à générer. Vous pouvez conserver vos choix dans un fichier pour le ré-utiliser plus tard. Chaque fois que vous cliquer sur **Export**, de nouveaux fichiers sont générés dans le répertoire de votre choix. Vous devez transférer manuellement les fichiers son générés sur votre lecteur mobile.

Vous pouvez si vous voulez demander au programme de générer des questions à partir d'autant de fichiers de leçons que vous voulez, mais il est plus habituel de générer un grand nombre de questions à partir d'une seule leçon, ou de quelques-unes.

Les convertisseurs de formats de fichier sont définis sur l'interface, page

Explication des entêtes du tableau

Nombre

Le nombre de questions à générer à partir du fichier de leçon.

Répéter

Le nombre de fois qu'il faut répéter chaque question.

Temps d'attente

La longueur du temps d'attente entre les questions. Mesurée en noires.

Editeur d'exercices d'entraînement de l'oreille à imprimer

Cet outil est disponible à partir du menu **File**. Utilisez-le pour créer des tests d'entraînement à imprimer sur papier. Solfege génère deux version du même document : l'une à compléter, pour les étudiants, et l'autre avec la réponse correcte.

Le bouton **Ajouter** fait surgir un petit menu avec tous les exercices de l'arborescence d'apprentissage en cours pour lesquels cet outil peut créer des exercices. Au moment où nous écrivons, les modules d'exercices nommer, intervalle mélodique et intervalle harmonique. Depuis les leçons écrites pour le module `nommer`, seuls les objets musicaux accord, voix répétée et voix sont implémentés.

Chapitre 2. Explications sur chaque exercice

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Intervalle harmonique

Cet exercice est l'un de ceux que vous pouvez utiliser pour pratiquer les intervalles. Le concept est assez simple : vous pressez le bouton **Nouvel intervalle** pour jouer un intervalle aléatoire, puis vous devez dire de quel intervalle il s'agissait.

Si vous utilisez l'interface à boutons, vous pouvez alors cliquer avec le bouton droit de la souris pour entendre l'intervalle.

Configuration

Sur l'onglet de configuration de l'exercice, il y a une liste où vous pouvez sélectionner différentes façons de répondre à la question. Pour l'instant, il y a un piano, une guitare, une basse et plusieurs types d'accordéons en plus de l'interface par défaut à boutons. Voyez ci-dessous une copie d'écran montrant l'interface de piano.

Raccourcis clavier

- Nouvel intervalle : **Alt**+**n**
- Répéter : **Alt**+**r**
- Rejouer mélodiquement : **Alt**+**m**
- Abandonner : **Alt**+**a**

Seconde mineure : 1	Quarte juste : 2	Sixième majeure : 3	Neuvième mineure : 4
Seconde majeure : q	Triton : w	Septième mineure : e	Neuvième majeure : r
Tierce mineure : a	Quinte juste : s	Septième majeure : d	Dixième mineure : f
Tierce majeure : z	Sixième mineure : x	Octave juste : c	Dixième majeure : d

Intervalle mélodique

Cet exercice crée des intervalles aléatoires et vous devez essayer de les identifier.

Si vous utilisez l'interface à boutons, vous pouvez alors cliquer avec le bouton droit de la souris pour entendre l'intervalle.

Configuration

Sur l'onglet de configuration de l'exercice, il y a une liste où vous pouvez sélectionner différentes façons de répondre à la question. Pour l'instant, il y a un piano, une guitare, une basse et plusieurs types

d'accordéons en plus de l'interface par défaut à boutons. Voyez ci-dessous une copie d'écran montrant l'interface de piano.

Raccourcis clavier

- Nouvelle question : **Alt**+**n**
- Répéter : **Alt**+**r**
- Abandonner : **Alt**+**a**

Seconde mineure : 1	Quarte juste : 2	Sixième majeure : 3	Neuvième mineure : 4
Seconde majeure : q	Triton : w	Septième mineure : e	Neuvième majeure : r
Tierce mineure : a	Quinte juste : s	Septième majeure : d	Dixième mineure : f
Tierce majeure : z	Sixième mineure : x	Octave juste : c	Dixième majeure : d

Chanter un intervalle

Dans cet exercice, Solfege va afficher un ou plusieurs intervalles, et vous devrez les chanter. Malheureusement, il n'est pas actuellement possible de chanter dans un microphone et de laisser Solfege décider si ce que vous chantez est correct, donc il vous faudra juger par vous-même si ce que vous chantez est correct ou non.

Configuration

Le programme va essayer de poser une question telle que toutes les notes soient dans l'intervalle que l'utilisateur doit pouvoir chanter conformément à la configuration effectuée dans la fenêtre des préférences. Parfois, il n'est pas possible de respecter l'intervalle, par exemple lorsque l'exercice est configuré pour créer plusieurs intervalles tous ascendants.

Raccourcis clavier

- Nouvel intervalle : **Alt**+**n**
- Nouvel intervalle, le dernier était juste : **Alt**+**n**
- Nouvel intervalle, le dernier était faux : **Alt**+**f**
- Rejouer la première note :**Alt**+**r**

- Jouer la réponse :**Alt**+**j**
- Jouer la dernière note : **Alt**+**l**

Identifier l'accord

Le but de cet exercice est d'identifier l'accord joué.

Commencez l'exercice en pressant le bouton **Nouveau**. Solfege va jouer un accord et vous devrez l'identifier en cliquant sur l'un des boutons situés sous la portée vide.

Si vous avez deviné, le programme va afficher l'accord sur la portée avec le message "Très Bien". Vous pourrez alors presser le bouton **Nouveau** pour passer à la question suivante.

Si vous n'avez pas deviné, le message "Faux" sera affiché.

Raccourcis clavier

- Nouvel accord : **Alt**+**n**
- Répéter : **Alt**+**r**
- Rejouer arpégé : **Alt**+**p**
- Abandonner : **Alt**+**a**

Identifier la cadence

Identifier la cadence en cliquant sur le bouton portant son nom. Ainsi que nous le reconnaissons sur

Dans cette version de Solfege, nous n'avons qu'un seul exercice avec des cadences en majeur. Dans cet exercice, une échelle majeure est jouée pour établir la tonique. Peut-être est-ce trop peu ? Devons-nous jouer la séquence complète I-IV-V-I avant de poser la question ? Ou bien, est-il préférable d'écrire de la vraie musique terminant par la cadence que nous voulons apprendre à reconnaître ? Nous aurions besoin de vos commentaires et de votre aide pour prendre de bonnes décisions en vue de la version 3.12.0. Commentaires et extraits musicaux peuvent être proposés ici :

Multiples choix pour les réponses en musique

Ceci est une page d'explications générique pour tous les exercices qui utilisent le module `idproperty`. Ces exercices comportent en général plus d'autres explications qui leur sont propres.

La copie d'écran ci-dessus vous permet de voir à quoi peut ressembler un exercice.

L'exercice affiche une question et joue un peu de musique, alors vous devez choisir une réponse dans chacune des colonnes du tableau de boutons. Quand vous avez choisi la bonne réponse, le libellé du bouton se met en gras et le message « Correct » clignote dans la barre d'état.

Quand l'une des questions au moins peut être jouée arpégée par le programme, l'exercice comporte un bouton **Rejouer arpégé**.

Raccourcis clavier

- Nouvel accord : **Alt**+**n**
- Répéter : **Alt**+**r**
- Rejouer arpégé : **Alt**+**p**
- Abandonner : **Alt**+**a**

Chanter un accord

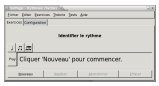
Si vous dirigez un choeur, vous devez chanter les notes de départ des différentes voix, et si vous n'avez pas de piano a proximité, vous devez utiliser un diapason. Si vous êtes un homme, vous chanterez les notes de femmes une octave plus bas, et vice versa.

Le programme va jouer la note La (440 Hz), et afficher un accord que vous devez chanter. Solfege ne permet pas pour l'instant d'utiliser un microphone, il vous faudra donc juger par vous-même si la réponse est juste ou non.

Raccourcis clavier

- Nouveau : **Alt**+**n**
- 440hz : **Alt**+**z**
- Rejouer la réponse : **Alt**+**p**

Rythme



Le programme joue un rythme aléatoire, et l'utilisateur doit reproduire ce rythme. L'utilisateur entre le rythme en cliquant sur des boutons représentant différents éléments rythmiques.

Lorsque vous avez entré suffisamment d'éléments rythmiques, Solfege vérifie votre réponse. Si tout est exact, il affiche un visage souriant, sinon un visage triste et tous les rythmes inexacts sont repérés.

Si une partie de votre réponse est inexacte, tout ce qui est après le premier élément inexact est effacé (mais les rythmes corrects dans le début de votre réponse sont conservés) losque vous cliquez sur le visage triste, ou lorsque vous cliquez sur les boutons des éléments rythmiques.

Vous pouvez cliquer sur 'Jouer' pour écouter votre proposition.

Les questions posées par cet exercice sont pour le moment construites en sélectionnant les éléments au hasard. Ce n'est pas le meilleur moyen de le faire, et nous espérons qu'une façon plus intelligente de construire les questions sera disponible dans une prochaine version.

Raccourcis clavier

- Nouveau : **Alt**+**n**
- Répéter : **Alt**+**r**
- Abandonner : **Alt**+**a**
- Effacer : **Backspace**

Taper le rythme

Le programme joue un rythme aléatoire, et l'utilisateur doit reproduire ce rythme. L'utilisateur entre le rythme en frappant sur le bouton avec le libellé *Frapper ici*.

Dictée de notes

Cet exercice est appelé dictée, mais si les fichiers de leçons nécessaires sont écrits, il peut être utilisé de plusieurs manières :

- Solfege vous joue de la musique que vous êtes supposés écrire sur papier. Cliquez sur les boutons montrant une (note) noire pour rejouer des parties de la musique. Vous devez cliquer sur le bouton Afficher et vérifier vous même vos notes pour voir si vous avez fait des erreurs.
- Vous pouvez utiliser cet exercice pour vous entraîner à la lecture à vue. Lorsque vous débuter l'exercice, cliquez sur Afficher et essayez de chanter la musique. Puis vous pouvez utiliser le bouton Jouer toute la musique ou les boutons avec les notes noires pour laisser le programme jouer la musique. Vous devez décider vous même si vous pensez avoir réussi.

Raccourcis clavier

- Jouer tout l'extrait : **Alt**+**t**
- Afficher : **Alt**+**f**

Gammes

Les gammes sont un sujet complexe. Par exemple, la gamme lydienne grecque (do-ré-mi-fa-sol-la-sib-do) est différente des gammes lydiennes médiévale et moderne (do-ré-mi-fa#-sol-la-sib-do). La table suivante décrit les gammes utilisées dans cette version de GNU Solfege.

Solgege a pour l'instant trois variantes d'exercices de gammes et d'échelles.

- Solfege va jouer une échelle, et vous devrez l'identifier en cliquant sur le bouton portant son nom.
- Solfege va jouer une échelle, et vous devrez identifier sa structure. Une série de boutons s'affichera avec pour libellés les nombres '1', '2' et '3'. Ces nombres représentent respectivement la seconde mineure, la seconde majeure et la tierce mineure entre les notes de l'échelle.
- Solfege va jouer une échelle, et vous devrez identifier la note de départ. Par exemple, si Solfege joue la gamme mineure naturelle à partir d'une des notes de cette échelle, vous devez déterminer quelle est cette note de départ.

Raccourcis clavier

- Nouveau : **Alt**+**n**
- Répéter : **Alt**+**r**
- Rejouer lentement : **Alt**+**l**
- Abandonner : **Alt**+**a**

Intonation

Dans cet exercice, Solfege joue un intervalle et vous devez apprécier la justesse de cet intervalle. Vous l'indiquez en cliquant sur l'un des boutons libellés 'trop petit', 'juste' ou 'trop grand'. Il est aussi possible que l'un de ces trois boutons soit absent.

Raccourcis clavier

- Nouveau : **Alt**+**n**
- Répéter : **Alt**+**r**
- Abandonner : **Alt**+**a**
- Afficher : **Alt**+**f**

Identifier la note

C'est un exercice combiné d'intervalle et de mémorisation de note. Certaines personnes pensent que ce genre d'exercice peut vous donner l'oreille absolue, mais je ne le pense pas personnellement.

Le fonctionnement est le suivant : le programme joue une note, et vous devez l'identifier en la comparant à la précédente note jouée.

Pour commencer, le programme joue une note et affiche son nom. Vous identifiez les notes en cliquant sur le clavier de piano ou en utilisant les raccourcis clavier qui sont les lettres écrites sur chaque touche.

Faites un clic droit sur le clavier du piano pour entendre une note sans répondre réellement. (Certains esprits mal intentionnés pourraient appeler cela tricher...)

Configuration manuelle

Vous pouvez configurer cet exercice à votre idée en choisissant « Configurer soi-même » dans la page d'accueil.

Il y a plusieurs façons d'utiliser cet exercice. Personnellement, je ne l'ai pas vraiment beaucoup utilisé, et les sections ci dessous sont seulement des suggestions.

Note par note

Démarrez avec simplement les notes do, ré et mi, avec un poids de 1. Lorsque votre score est d'au moins 96%, ajoutez le fa. Les exercices sont prévus pour que vous puissiez continuer ainsi juqu'aux 12 notes.

La fréquent

Configurez la note La avec un poids de 11 (ou plus) et les autres notes avec un poids de 1. De cette façon, le programme joue la note La très souvent, donc vous vous en souvenez et l'utilisez comme note de référence pour identifier les autres notes. Après vous être entraîné suffisamment, vous pouvez réduire le poids de la note La pour rendre l'exercice plus difficile.

Configuration

En haut de la page de configuration (en mode "Configurez vous-même"), vous indiquez au logiciel l'importance relative des différentes notes. Si par exemple vous donnez à la note La un poids de 11 points et 1 point à toutes les autres, alors 11/(11+11*1)*100 = 50% des notes aléatoires seront un La.

En dessous, vous sélectionnez de quel octave les notes aléatoires peuvent provenir.

Ensuite, vous pouvez indiquer si Solfege doit automatiquement vous poser une nouvelle question lorsque vous avez résolu la précédente.

Dans le cadre en dessous vous pouvez choisir différentes options à propos de ce qui se passe si vous donnez une réponse inexacte.

Les raccourcis clavier se configurent dans la fenêtre des préférences.

Pulsations par minute

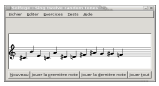
Le logiciel joue un tempo, comme un métronome. Vous devez alors essayer de deviner combien de pulsations par minute sont jouées. Chaque bouton représente un tempo et le logiciel ne joue que les tempos correspondant à un bouton en gras. Cliquez avec le bouton droit pour changer le statut d'un tempo.

Note : le rythme dépend de la fonction `gtk timeout_add` qui joue les rythmes, par conséquent il n'est pas très précis.

Raccourcis clavier

- Nouveau tempo : **Alt**+**n**
- Abandonner : **Alt**+**a**

Chanter 12 notes au hasard



Dans cet exercice, le logiciel affiche tous les 12 tons de la gamme dans un ordre aléatoire et joue le premier. Vous devez alors chanter toutes les notes et à la fin vous constatez si la dernière note correspond. Il s'agit donc d'une sorte de test de votre capacité à chanter à vue plutôt que d'un exercice pour apprendre à chanter les intervalles. Vous trouverez d'autres exercices sur les intervalles.

Raccourcis clavier

- Nouveau : **Alt**+**n**
- Jouer la première note : **Alt**+**j**
- Jouer la dernière note : **Alt**+**d**
- Tout jouer :**Alt**+**t**

Intervalles par leurs noms

Dans cet exercice, Solfege va afficher, puis jouer, un intervalle, et vous devrez l'identifier. Il s'agit là d'un exercice de théorie de la musique et non pas d'un exercice d'entraînement de l'oreille. Pour apprendre à nommer les intervalles, lisez la section intitulée « Intervalles ».

Pour identifier un intervalle, cliquez sur l'un des boutons qui donne le nom spécifique et le nom général.

Dictée de progression harmonique

Dans cet exercice, Solfege joue un peu de musique et vous devez cliquer sur els boutons pour construire une représentation des progressions harmoniques de l'exercice.

Chapitre 3. Théorie de la musique

Table des matières

Gammes
Intervalles
- Secondes
- Tierces
- Quarte
- Quinte
- Sixtes
- Septièmes

Renverser un intervalle

Gammes

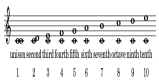
Davide Bonetti est l'auteur d'une large part des exercices sur les échelles et de quelques-unes des pages d'explications les concernant. Vous pouvez lire ces pages ici.

Intervalles

En théorie de la musique, on utilise le mot « intervalle » pour désigner la différence de hauteur entre deux notes. Ils sont appelés intervalles harmoniques si les deux sons sont entendus simultanément, et mélodiques s'ils sont entendus successivement.

Les noms d'intervalle sont constitués d'un nom générique et d'une qualification. Par exemple, une "tierce majeure", ou une "quinte juste".

Pour déterminer le nom générique d'un intervalle, on compte les notes sur la portée sans se préoccuper des altérations. Donc si l'intervalle que vous voulez nommer s'étend du mi au sol dièse, il faut compter jusqu'à 3 (mi fa sol) et déduire que l'intervalle est une tierce.



Le rôle de la qualification est de spécifier la taille exacte de l'intervalle. Les unissons, les quartes, les quintes et les octaves peuvent être diminués, juste ou augmentés. Un intervalle mineur contient un demi-ton de moins que son correspondant majeur. UN inteervalle dinimué contient un demi-ton de moins que son équivalent juste ou mineur, et un intervalle augmenté contient un demi-ton de plus qu'un intervalle juste ou majeur.

Les altérations modifient la taille des intervalles. L'ajout d'un dièse à la note supérieure d'un intervalle l'agrandit d'un demi-ton. Il en est de même pour l'ajout d'un bémol à sa note inférieure. Et l'ajout d'un

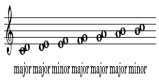
bémol à la note supérieure - ou d'un dièse à la note inférieure - réduit d'un demi-ton la taille de cet intervalle. Dans les paragraphes suivants, le nommage des intervalles est expliqué plus en détail.

Secondes

Les secondes sont faciles à reconnaître : les deux notes sont voisines sur la portée. Une des deux notes se trouve sur une ligne et l'autre dans l'interligne immédiatement supérieur ou inférieur. A une seconde mineure correspond un intervalle conjoint d'un demi-ton. A une seconde majeure correspond un intervalle conjoint d'un ton et contient deux demi-tons.

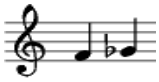
Pour apprendre à identifier les secondes, il faut d'abord se souvenir des types d'intervalle conjoint (ton ou demi-ton) qui se trouvent entre les notes successives de la gamme. Ainsi que vous pouvez le voir dans la Figure 3.1, « »

Figure 3.1.



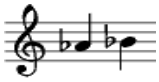
Si la seconde a des altérations, il faut se demander si ces altérations modifient la taille de l'intervalle. Voici quelques exemples.

Figure 3.2.



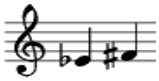
On enlève l'altération de l'intervalle comme indiqué dans la Figure 3.2, « », on constate que fa-sol est une seconde majeure. Ensuite, en remettant le bémol de la note supérieure, l'intervalle, étant réduit d'un demi-ton, se transforme en seconde mineure.

Figure 3.3.



On enlève les altérations, on constate que l'intervalle la-si est une seconde majeure. Vous vous souvenez de la Figure 3.1, « », n'est-ce pas ? Ensuite on remet le bémol à la note la, et l'intervalle se transforme en seconde augmentée. Finalement, en remettant aussi le bémol à la note si, on obtient une seconde majeure.

Figure 3.4.

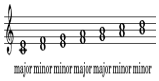


On enlève les altérations, on constate que l'intervalle mi-fa est une seconde mineure. Ensuite on remet le bémol de la note inférieure, l'intervalle est augmenté d'un demi-ton et devient une seconde majeure. Finalement, on remet le dièse de la note supérieure ce qui agrandit l'intervalle d'un demi-ton et le transforme en seconde augmentée.

Tierces

Une tierce mineure se décompose en une seconde mineure plus une seconde majeure, ou au total trois demi-tons. Une tierce majeure se décompose en deux secondes majeures, ou quatre demi-tons. La Figure 3.5, « » décrit toutes les tierces de la gamme de do majeur. Retenez que les tierces do-mi, fa-la et sol-si sont majeures. Les quatres tierces qui restent sont mineures.

Figure 3.5.

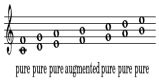


Ensuite, examinez les altérations pour voir si elles changent la qualification de l'intervalle. La méthode est exactement la même que pour les secondes.

Quarte

La quarte juste comporte deux tons et un demi-ton. Elle se décompose en deux secondes majeures plus une seconde mineure. La Figure 3.6, « » décrit toutes les quartes de la gamme de do majeur. Retenez que la quarte fa-si est augmentée. Toutes les autres sont justes.

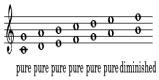
Figure 3.6.



Quinte

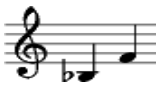
La quarte juste comprend 3 tons et un demi-ton et se décompose en trois secondes majeures plus une seconde mineure. La Figure 3.7, « »

Figure 3.7.



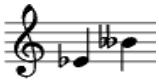
Quand l'intervalle comporte des altérations, il faut examiner les effets de ces altérations sur la taille de l'intervalle. La quinte dinimuée a un demi-ton de moins que la quinte juste, et la quinte augmentée comporte un demi-ton de plus. Voici quelques exemples :

Figure 3.8.



D'après la Figure 3.7, « », nous savons que l'intervalle si-fa est une quinte diminuée. Le son le plus bas de la Figure 3.8, « » est précédé d'un bémol qui agrandit l'intervalle d'un demi-ton pour en faire une quinte juste.

Figure 3.9.



D'après la Figure 3.7, « »

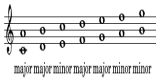
Sixtes

Pour identifier les sixtes, le plus simple est de renverser l'intervalle et d'identifier la tierce. Alors la règle suivante s'applique :

- Si la tierce est diminuées, la sixte est augmentée
- Si la tierce est mineure, la sixte est majeure
- Si la tierce est majeure, la sixte est mineure
- Si la tierce est augmentée, la sixte est diminuée

Si vous trouvez difficile de renverser les intervalles, souvenez-vous que les sixtes mi-do, la-fa et si-sol sont mineures, les quatre autres étant majeures. Ensuite vous examinez les altérations pour voir si elles modifient la qualification de l'intervalle. La méthode est la même que pour les secondes.

Figure 3.10.

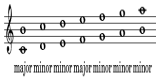


Septièmes

La méthode de qualification des septièmes est la même que pour les sixtes ; si vous renversez une septième, vous obtenez une seconde.

Si vous trouvez difficile de renverser les intervalles, souvenez-vous que les septièmes do-si et fa-mi sont majeures, les cinq autres étant majeures. Ensuite vous examinez les altérations pour voir si elles modifient la qualification de l'intervalle. La méthode est la même que pour les secondes.

Figure 3.11.



Renverser un intervalle

Renverser un intervalle, c'est déplacer sa note la plus basse une octave au-dessus ou sa note la plus haute une octave au-dessous. Le nom générique de l'intervalle change de la manière suivante :

- La seconde devient une septième.
- La tierce devient une sixte.

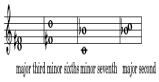
- La quarte deviant une quinte.
- La quinte devient une quarte.
- La sixte devient une tierce.
- La septième devient une seconde.

La qualification change de la manière suivante :

- Diminué devient augmenté.
- Mineur devient majeur.
- Juste reste juste.
- Majeur devient mineur.
- Augmenté devient dinimué.

Ci-dessous deux exemples : une tierce majeure, renversée, devient une sixte mineure et une septième mineure, renversée, devient une seconde majeure.

Figure 3.12.



Chapitre 4. Extending GNU Solfege

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Introduction

GNU Solfege is written so that it can easily be extended, even if you do not know any computer programming. The steps are:

- Create a lesson file and save it it in the first directory listed when you select **User Exercises** from the **File** menu. Create the directory if it does not exist.
- Select **User Exercises** once again to see the file show up in the list.
- Click the link to your lesson file and enjoy!

To get started, you can copy one of the lesson files included in GNU Solfege. The lesson files are located in the `exercises/standard/lesson-files` subdirectory of the installation directory. You can find the installation directory by selecting **File Locations** from the **Help** menu. It is important to store the lesson files you create in the directory intended for user created lesson files, and not in the applications directory. This because all files in the installation directory may be removed while upgrading the program.

If you create many lesson files, you might want to group them together in a separate subdirectory and attach them to a front page file. This way you have a set of files in a subdirectory that you can easily distribute to other students. So create a new directory side by side the `user` directory you found by selecting **User Exercises** earlier this article. Your files might be structured like this:

```
myfiles/myfrontpage.txt
myfiles/lesson-files/chords-1
myfiles/lesson-files/chords-2
```

To create a new front page file, you should select **Edit Front Page** from the **File** menu, and then click **New** on the toolbar of the dialog that pops up.

Lesson files

In GNU Solfege, each exercise is created by a lesson file interpreted by one of the exercise modules.

Deprecated modules: chord, harmonicprogressiondictation,

Missing documentation: chordvoicing, identifybpm, twelvetone

File encoding

Solfege by default expects the content of lesson files to be in UTF-8 encoding. Modern editors often let you specify the encoding in the "Save As" dialog. One example is gedit. Other programs, like vim and emacs let you specify the encoding inside the text file.

If this sounds complicated, you can safely ignore the whole encoding issue if you restrict yourself to use only standard ascii characters. That is only the letters a to z.

If you create lesson files with a different encoding, you have to declare the encoding in a special comment at the top of the file. This because Solfege and the tools used to translate Solfege cannot guess the encoding safely. We follow the same conventions as the Python language. See PEP-0263 for the details.

What you have to do is add a comment to one of the first two lines of the lesson file, where part of the line matches `coding=encoding` or `coding: encoding`. Extra characters on the line are ignored, so if you use the emacs or vim editors, you can conveniently tell the editor about the file encoding. The following example sets the charset to ISO 8859-1, a charset commonly used in many west-european languages:

```
# -*- coding: iso-8859-1 -*-
```

Russians might want to use koi8-r:

```
# -*- coding: koi8-r -*-
```

Same as above, but in a format that works with the vim:

```
# vim: set fileencoding= koi8-r :
```

The program use the python libs to convert to unicode, so it should understand almost any encoding you can think of. If you see some characters are missing, for example when the name of questions are displayed on buttons, then most likely you have done something wrong with the encoding.

Useful unicode characters

Unicode has some characters that you might want to use to make labels look more professionally. If your editor use unicode by default, you may copy-and-paste the characters you need from here, if you are viewing this documentation in a web browser. The number is a hexidecimal number.

`ø` `00F8 LATIN SMALL LETTER O WITH STROKE`

Half-diminished seventh chord.

`°` `00B0 DEGREE SIGN`

Diminished seventh chord.

`△` `25B3 WHITE UP-POINTING TRIANGLE`, `Δ` `0394 GREEK CAPITAL LETTER DELTA`

Major seventh chord. We do not know which character to recommend. Solfege does not care, so

you can use the symbol you like.

♭ 266D MUSIC FLAT SIGN

This sign can be used instead of the letter 'b' for a flat sign.

♯ 266F MUSIC SHARP SIGN

This can be used instead of the letter '#' for the sharp sign.

Comments

Everything after # on a line is ignored. Example:

```
# This line is ignored. The next line is not.
question { bla bla }
```

Types

Strings

Strings are quoted with the " character. Example:

```
"this is a string"
```

Use tripple quotes for strings that contain line breaks, or if the string itself has to contain the " character:

```
description = """<h1>Long desription<h1> This lessonfile need
very much descriptions. Qoutes (") are ok here. bla bla bla"""
```

NB: All strings have to be unicode strings. If you get error messages like this one:

```
In line 21 of input: does not recognise this string ';lt;' as a valid token.'
(line 20): question {
(line 21): question {
(line 22):   name = _("Ionia)
```

then you must check the encoding of your file, and maybe you should read la section intitulée « File encoding ». You can change the encoding of a file using the **iconv** program:

```
iconv -f YOUR_ENCODING -t utf8 your.file
```

Tempo

The tempo of music is entered as `bpm/beatlen`. The following example will set the tempo to 120 beats per minute, each beat being a quarter note.

```
tempo = 120/4
```

Global variables

Global variables can save you a few key strokes.

```
s = "\score\relative c'{ %s }
question {
# instead of music = music("\score\relative c'{ c d e f g2 g2 }")
music = music(s % "c d e f g2 g")
}
```

Lesson file contents

A lesson file consist of one header block and zero or more question blocks:

```
header {
 ASSIGNMENT
 ASSIGNMENT
 ...
}
question {
 ASSIGNMENT
 ...
}
```

Header block

The header block can be placed anywhere in the file, but by convention it should be the first block in the file. And there is a limitation that the header has to be within the first 40000 characters of the file.

Variables shared by many exercise modules

`module`

Tell what execise module that will run the lesson file. This variable is requried for all lesson files. (The variable was added in Solfege 2.9.0 where it replaced the `content` variable.). Example:

```
module = idbyname
```

`replaces`

A string or list of strings with hash values of lesson files that this lesson file can replace without dropping the statistics. Use this only when you know what you are doing. The hash value is calculated by `solfege.lessonfile.hash_of_lessonfile()`. **tools/hash-of-file.py** can be used to get the hash value of files before modifying them.

```
replaces = "bf7dd374206451bff43d61fc8191f5fb3e88d007"
replaces = "bf7dd374206451bff43d61fc8191f5fb3e88d007",
"cdb2f9415171650ee7682028788c1c42c62fdbf"
```

`lesson_id`

This variable is deprecated in Solfege 3.15.3. It should remain in existing lesson files for some time for backward compatability. But it should not be added to new lesson files.

Each file need a unique identifier. The identifier can be any string you like, and if you don't add one, Solfege will add one for you. Solfege will also offer to create a new `lesson_id` if you have two files with identical `lesson_id`. Example:

```
lesson_id = "5b30c9ae-09f1-40b3-9333-4789638dc851"
```

`version`

Tell the version of solfege the lessonfile is known to work with. This variable is not required, but it should be used because it can (but don't guarantee to) help avoid trouble if the lesson file format changes in the future. Example:

```
version = "3.0.7"
```

`title`

Short one-line description that will be used for creating the menu entry for the exercise. You should add this to all lesson files. Example:

```
title = "Minor and major chords in root position"
```

`lesson_heading`

A short heading that will be displayed above the exercise. It should say what the purpose of the exercise is. Some modules provide a default value, others leave the string empty. Example:

```
lesson_heading = _("Identify the chord")
```

`help`

This variable say which help file from the user manual will be displayed when the user presses F1. Example:

```
help = "idbyname-intonation"
```

By default, Solfege will display the help file that has the same name as the exercise module being used in the lesson file.

`theory`

This variable say which help file from the user manual will be displayed when the user presses F3. Pressing F3 should display music theory about the exercise. Don't include this variable if there are no music theory written. Example:

```
theory = "scales/maj"
```

`random_transpose`

In some exercises the program can transpose the music to create variation. The default value is `yes`. (The default value changed from `no` to `yes` in Solfege 3.0.)

Used in modules: `chord`, `chordvoicing`, `harmonicprogressiondictation`, `idbyname`, `singanswer`, `singchord`

Possible values

random_transpose = no

No transposition will be done.

random_transpose = yes

The exercise will do random transposition. What kind of transposition depends on the exercise, but you get a ok result from this. This is the default value.

random_transpose = accidentals, INTEGER1, INTEGER2

Transpose the question by random and make sure the key signature of the question does not get more than a certain number of accidentals. In this context, the number of accidentals can be described by an integer value. A negative value denote a number of flats (b), and a positive number denote a number o sharps (#). Zero mean no accidentals. The integers INTEGER1 and INTEGER2 defines a range of allowed number of accidentals.

For this to work properly the music must either be in C major or A minor, or the key of the music has to be set with the `key` variable.

random_transpose = key, INTEGER1, INTEGER2

Transpose the music INTEGER1 steps down or INTEGER2 steps up the circle of fifth. In this context up is more sharps and down is more flats. This is real transposition where both the key and the notes are transposed.

For this to work properly the music must either be in C major or A minor, or the key of the music has to be set with the `key` variable.

random_transpose = semitones, INTEGER1, INTEGER2

Transpose the music at most INTEGER1 semitones down or INTEGER2 semitones up. This is real transposition where both the key and the notes are transposed. You will easily end up with music in the keys with LOTS of accidentals.

random_transpose = atonal, INTEGER1, INTEGER2

Transpose the music at most INTEGER1 semitones down or INTEGER2 semitones up. Similar to `semitones`, but the notes will be tranposed one by one, and the key will not change.

`enable_right_click = no`

By default, Solfege will let the user right-click on buttons to hear the music they represent without guessing. Set this variable to `no` for lesson files where it does not make sense, for example in a `idbyname` lesson file where many questions have the same name.

Modules: `idbyname`, `chordvoicing` and `chord`.

`disable_unused_intervals = no`

By default, Solfege will make the buttons insensitive for intervals that are not being asked. Set this variable to `no` if you want all buttons to be sensitive.

Modules: `harmonicinterval` and `melodicinterval`.

`ask_for_intervals_0`

Select which intervals to ask for. 1 for minor second, 2 for major second, 3 or minor third etc. Use a negative number for descending intervals. To ask for more that one interval create the variables `ask_for_intervals_1`, `ask_for_intervals_2` etc. In the following example Solfege will ask for two intervals. The first will be either a minor second or a major second, both intervals

going up. And the second interval will be either major second or minor third, both intervals going down.

```
ask_for_intervals_0 = [1, 2]
ask_for_intervals_1 = [-2, -3]
```

Modules: `melodicinterval` and `singinterval`.

`intervals`

This variable tell which intervals should be asked for in exercises using the `harmonicinterval` module. 1 for minor second, 2 for major second, 3 or minor third etc. Example that will practise thirds:

```
intervals = [3, 4]
```

Modules: `harmonicinterval`.

`test`

This variable defines the test for the exercise. In a test, Solfege will ask all the questions in the lesson file a number of times. This variable is always used together with `test_requirement`. In the following example, each question will be asked 3 times:

```
test = "3x"
```

Modules: `harmonicinterval`, `idbyname`, `melodicinterval` and `singinterval`.

`test_requirement`

This variable defines how large percentage of the questions has to be answered correctly to pass the test. Example:

```
test_requirement = "90%"
```

Modules: `harmonicinterval`, `idbyname`, `melodicinterval` and `singinterval`.

`have_repeat_arpeggio_button = yes`

Set to `yes` if you want the exercise to have a "Repeat arpeggio" button.

Modules: `singanswer`.

`have_music_displayer = yes`

Set to `yes` if you want the question to have a music displayer.

In the idbyname module, setting this variable will add a music displayer where the program will display the answer when the user gives up or answers the question correctly. You might also want to read about at_question_start.

In the `singanswer` module, setting this variable will add a music displayer where the music will be displayed when the question is displayed.

Modules: `idbyname`, `elembuilder` and `singanswer`.

music_displayer_stafflines = INTEGER

The number of empty staff lines to display when we have no music to display.

Modules: `idbyname` and `elembuilder`.

at_question_start

This variable changes what happens when the user clicks **New**. By default, Solfege will play the music when the user clicks **New**, and only display the music when the question is answered correctly and the `have_music_displayer` variable is set to `yes`. Setting this variable will also set `have_music_displayer` to `yes`.

at_question_start = show

The exercise will get a **Play music** button. When the user clicks **New** the music will be displayed in the music displayer, but no music is played. Click **Play music** to hear the music.

at_question_start = play

The exercise will get a **Display music** button. When the user clicks **New** the music is played. Click **Display music** to see the music.

at_question_start = show, play

When the user clicks **New** the music is both played and displayed.

Modules: `idbyname`, `elembuilder` and `rhythmtapping2`.

vmusic

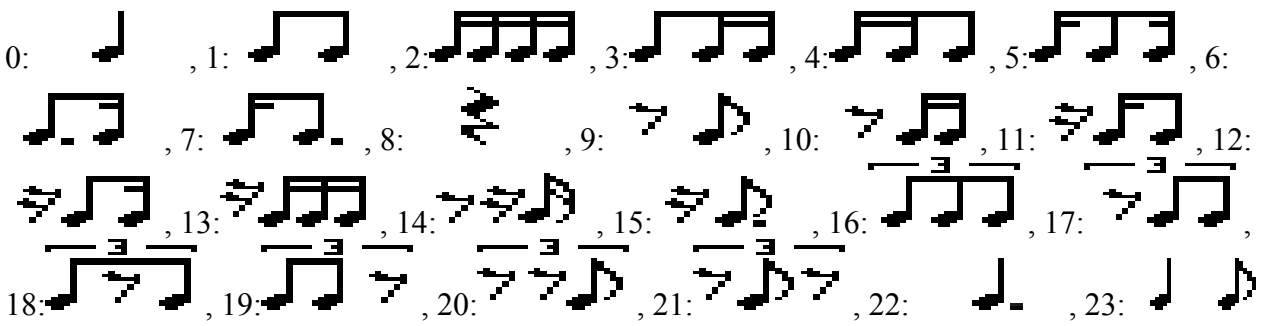
This variable holds a representation of the question intended to be displayed. This can be necessary if the music is a .wav or .mp3 file. It will be used when the user clicks Show music or when the question is answered correctly (if we have a musicdisplayer). Added to `idbyname` in Solfege 2.5.1 and to `elembuilder` in 3.9.2.

Modules: `idbyname` and `elembuilder`.

rhythm_elements

A list of integers (1-34) telling what elementes we should use when creating questions. Example:

```
rhythm_elements = 0, 1, 2, 3, 4
```



, 24: , 25: , 26: , 27: , 28: , 29: , 30: , 31: , 32: , 33: , 34:

Modules: `rhythm` and `rhythmtapping2`

Variables that has been obsoleted

`number_of_intervals = INTEGER`

Made obsolete in Solfege 3.1.5. Solfege will find this number automatically now, so this variable is ignored.

Question block

Variables you can define in the question block

`name`

Questions written for the idbyname or elembuilder exercise modules need a name. A name is optional for dictation module.

`music`

For most lesson files the music representing the question is assigned to this variable. Note that there is a shortcut. Instead of:

```
question {
  name = "Lisa gikk til skolen"
  music = music(...)"
}
```

you can write:

```
question {
  name = "Lisa gikk til skolen"
  music(...)
}
```

Music objects are documented in la section intitulée « `music` objects ».

`tempo`

Set the tempo for this questions music. The variable is defined "beats per minute" / "notelen per beat". Example:

```
tempo = 150 / 4
```

This variable can also be defined globally for the whole lesson file. Do do so you should put it in the beginning of the file, outside any question blocks.

Modules: `idbyname`, `chord`, `chordvoicing` and `rhythmtapping`.

`instrument`

By default, Solfege will use the instrument specified on the preferences window when playing questions. This variable let you select a different instrument. Example:

```
instrument = "cello", 100
```

The instrument name has to be quoted. The integer is the volume, and it should be in the range 0-127. You can see a list of instrument names in la section intitulée « Midi instrument names ». For lesson files where it makes sense, it is possible to specify three set of instruments. The following example will play bass for the lowest tone, piano in the middle and clarinet on the top tone:

```
instrument = "bass", 100, "acoustic grand", 100, "clarinet", 100
```

This variable can also be defined globally for the whole lesson file. Do do so you should put it in the beginning of the file, outside any question blocks.

Modules: `idbyname`, `chord`, `singanswer` and `chordvoicing`

`set`

The set variable is used by some exercise modules to select which question to play when the user right clicks on one of the answer buttons. This can be useful if the lesson file has many questions with the same name, and you want solfege to play the question that is most closely related to the question being asked. You can assign whatever value you want. A good suggestion is to use integers.

In lesson files that does not use the `set` variable, solfege will play the first question it can find with the same name as the button the user right clicks on.

If the lesson file uses the `set`, or more precisely, if the question being asked has the variable defined, the program will first try to find a question where the `set` variable matches the question being asked, and the name matches the button clicked. If no match is found, the program will select a question to play as if the `set` variable was not used at all.

Modules: `idbyname` and `chordvoicing`.

`key`

Needed to make some random transposition work properly if the music is not in C major on A minor. Two examples:

```
key="b \minor"
key="g \major"
```

`music` objects

Each question in your lesson files will define one or more `music` objects.

music(*musiccode*)

This is music entered completely following the music format FIXME spec. This means you have to enter complete code with a `\staff` command. Example:

```
variable = music("\staff\relative c' { c' d' }")
```

music3(*musiccode*)

The music object can be used for music that has 3 or more staffs. It works the same way as music, but if "Use different instruments for chords and harmonic intervals" is checked in the preferences window, the 3 instruments you can select the same place will be used instead of the preferred MIDI instrument.

chord(*musiccode*)

Enter the tones from the lowest to the highest tone, like this:

```
variable = chord("c' e' g'")
```

satb(*musiccode*)

This type of music is used by the singchord exercises. It let you say which tones of a chord the different voices in a choir will sing. Take this, for example:

```
variable = satb("c''|e'|g|c")
```

The `c''` will be sung by the soprano, `e'` by the alto, `g` by the tenor and `c` by the bass. Please notice that when this music is played in arpeggio, the tones to be sung by the women, will be played one octave deeper, of the user is a male. And vice versa if the user is a female or a child.

voice(*musiccode*)

This musictype saves some key strokes if you want to enter a melody.

```
variable = voice("c'4 c' g' g' | a' a' g'2")
```

is the same as

```
variable = music("\staff{ c'4 c' g' g' | a' a' g'2")
```

rvoice(*musiccode*)

`rvoice` is similar to `voice` except that the music is in `\relative` mode, relative to the first tone. The following two statements produce the same music:

```
variable = rvoice("c'4 c g' g | a a g2")
\staff\relative c'{ c4 c g' g' | a a g2 }
```

percussion(*percussioncode*)

This music object provides a simple way to play rhythms with percussion instruments. Each tone represents a percussion instrument as defined in la section intitulée « Percussion instrument names ». In the following example, the tone *c* is translated to the midi sound *Side Stick* and *d* to a *Mute triangle*.

```
variable = rhythm("d4 d d d c8 c8 c4")
```

rhythm(*musiccode*)

This music object let you write questions that taps rhythms with the two instruments defined in the preferences window. The tone `c` will play the rhythm representing the question, and the tone `d` can be used if you want to write some sort of "count-in" before the question starts. Example:

```
rhythm("d4 d d d c8 c8 c4 c c8 c8")
```

You should only use two pitches, `c` and `d`. Other pitches will print a warning, but will still work in the current implementation. To play real percussion with many different instruments you should use the percussion music object.

midifile(*filename*)

Play a midi file. The path given to the file is relative to the directory the lesson file is stored in. Example:

```
variable = midifile("share/example.mid")
```

wavfile(*filename*)

Play a `.wav` file. The path given to the file is relative to the directory the lesson file is stored in. Example:

```
variable = wavfile("share/fifth-small-220.00.wav")
```

mp3file(*filename*)

Play a MP3 file. Similar to `wavfile`.

oggfile(*filename*)

Play an Ogg Vorbis file. Similar to `wavfile`.

csound(*orchestra*, *score*)

Given a CSound orchestra and score, this music object will generate a WAV file and play it. Example:

```
csound(load("share/sinus.orc"), """
    f1 0 4096 10 1
    i1 0 1 220.0
    i1 + 1 329.04
    """)
```

mma(*mmacode*), **mma**(*groove, mmacode*)

Create a music object that use MMA to generate music that it will play. If you create the object with one argument, *mmacode* should be a string with complete MMA code. With two arguments, `groove` is a string with the name of the groove, and `mmacode` is comple MMA code, except it could be missing the initial "Groove" instruction. The groove from `groove` will be prepended the string.

cmdline(*shell code*)

Run an external program. Example:

```
cmdline("./bin/csound-play-harmonic-interval.sh 220.000000 320.100000")
```

Functions

- **_(*message*)**

Return the translation of *message* if it exist. Return the string unchanged if not.

```
title = _("Bla bla title")
```

- **include(*filename*)**

  Read the file *filename* into the lesson file and parse it as a part of the file. The filename is relative to the location of the lesson file.

```
include("singchord-1")
```

  The lesson header variables will be taken from the including lesson file. Only if a variable is only defined in the included lesson file, and not in the including lesson file, then the value will be taken from the included file.

- **load(*filename*)**

  Read the file *filename* from disk and return it as a string. The filename is relative to the location of the lesson file.

```
orc = load("share/sinus.orc")
```

Label functions

We call these functions *label functions* because we use them to create the label for some questions in the program. You should only use these functions where they are documented to work.

- **pangomarkup(*pangostring*)**

  Return a label that the program can put on a button. The label is created using GTK pangomarkup. Google for "pango markup" to get the markup explained. Notice that you have to use triple qoutes around the string.

```
pangomarkup("""<span size="xx-large">V</span>""")
```

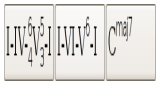
- **progressionlabel(*str*)**

  This function has existed in Solfege for a while, but it has not been documented until now. Should we find a shorter function name? An alias can be added so that the old long function name still works.

  Return a label. *str* is interpreted like this:

  - Each letter outside of a parentheses is displayed with a large serif font.
  - The text inside parentheses is displayed as a superscript: smaller letters above the baseline.
  - If the text inside the parentheses is divided by a comma, the text before the comma is superscript and after the comma is subscript.

```
progressionlabel("I-IV-(6,4)V(5,3)-I")
progressionlabel("I-VI-V(6)-I")"
progressionlabel("C(maj7)")
```



- **`rnc(`*`str`*`)`**

  Display a sequence of roman numeral chords. The chords are separated by whitespace and an optional hyphen. The exact implementation of this is still open for discussion. The current developent version of Solfege will divide each chord in 3 parts and give them different font sizes, and also try to make the chord compact, so that it should not take too much space on screen.

  - The first part of the chord is the roman numberal, including an optional `b` or ♭ (unicode character `U+266D MUSIC FLAT SIGN`).
  - The second part is the letters (if any) between the first and the third part.
  - The third part is from the first digit and the rest of the chord.

```
rnc("Imaj7-IIm7-V9-Imaj7")
```

  Spaces are not allowed in the chord name.

  New in version 3.11.0.

- **`chordname(`*`str`*`)`**

  Display a sequence of chords. The chords are separated by whitespace. Each chord consist of up to four parts, and part two to four are optional:

```
[notename][txt1][:txt2][/bass]
```

  `notename` and `bass` music be a notename in the format understood by the music parser. You can read more about this in [la section intitulée « The `mpd` module »](). Example:

```
g:11b9 cm/g ges:Δ besm:7/f
```

  New in version 3.11.1.

Operators

Operators can only be used on strings. `+` is used for joining strings, and `%` is similar to what you find in python, but it is very limited. It only know about `%s`. One example:

```
"\staff\relative c'{%s}" % "c d e"
```

evaluates to

```
\staff\relative c'{c d e}
```

The `chordvoicing` module

Still undocumented...

The `compareintervals` module

Here is a minimal lesson file:

```
header {
    countin_perc = compareintervals
    title = "Compare intervals"
    lesson_id = "9f830e12-1f50-4fa9-8688-1e04469692fa"
}
```

This file will make an exercise that ask you to compare harmonic intervals. And since you do not say which intervals, it will ask for all intervals from a small second up to a major tenth.

`first_interval_type`, `second_interval_type`

Let you select if the intervals you are asked to compare should be a melodic or a harmonic interval. The default value is `melodic`. Possible values: `harmonic` and `melodic`.

```
    first_interval_type = melodic
    second_interval_type = harmonic
```

Modules: `compareintervals`.

`first_interval`, `last_interval`

Select which intervals to select from when creating the questions. This variable should be defined the same way as ask_for_intervals_0. If these two variables are not defined, then the user will be able to select which intervals to practise from the Config page of the exercise.

Modules: `compareintervals`.

The `dictation` module

Example:

```
header {
  module = dictation
  lesson_id = "a265df62-e007-4a1b-9057-cd05397e88a2"
  title = _("Norwegian children songs")
  version = "2.1.10"
}

question {
 name = "Bæ, bæ, lille lam"
 tempo = 130/4
 breakpoints = 2/1, 4/1, 8/1, 10/1, 12/1, 14/1
 music = rvoice("""
    \time 4/4
    c'2 g' | e4 e c2 | d4 d g, g | c1 |
    c2 g' | e4 e c2 | d4 d g, g | c1 |
    a'4 f f f | g2. e4 | f d d d | e2. c4 |
    a'2 f | g e4 e | f b, b b | c1 |
```

```
 """)
}
question {
 # this tempo definition overrides the global
 tempo = 160/4
 name = "Lisa gikk til skolen"
 breakpoints = 2/1, 4/1, 6/1
 music = rvoice("""
   \time 4/4
   c' d e f | g2 g2 | a4 a a a | g1 |
   f4 f f f | e2 e | d4 d d d | c1
 """)
}

question {
 name = "Det satt to katter på et bord..."
 tempo = 96/4
 music = rvoice("""
     \key g \major \time 2/4
     d'8 | [g g] [fis e] | [fis g] a4 | [d,16 d d d] [e8 fis] | g2 """)
}
```

By default, the dictation exercise will show the first column of music, and then the user should write the rest. But if the first column is not good enough, for example if there are only rests on the first beat, these two variables can tell the program how much music to display:

`clue_end`

The following example will display the music on all staffs in the first quarter note:

```
clue_end=1/4
```

`clue_music`

This is an alternative to `clue_end`. The music assigned to `clue_music` will be shown to the user when he should start the dictation. You should not use both `clue_end` and `clue_music` in the same question.

`breakpoints`

Set breakpoints in the music, so you can hear the music in parts when doing the dictation.

The `elembuilder` module

Here is a minimal lesson file:

```
element progI { label = "I" }
element progIV { label = "IV" }
element progV { label = "V" }

header {
    lesson_id = "3f3872c0-ef2e-4132-9fb1-97f75c7b28fd"
    module = elembuilder
    title = "progression test"
    elements = auto
    # uncomment if you want a music displayer.
    # have_music_displayer = yes
}
```

```
question {
 music = rvoice("<c' e g> <b d g> <c e g>")
 elements = progI, progV, progI
 name = "I-V-I"
}
question {
 music = rvoice("<c' e g> <c f a> <c e g>")
 elements = progI, progIV, progI
 name = "I-IV-I"
}
```

The element block

This block defines the elements the user can put together to answer the question. Each block is named by the string between `element` and `{`. The block defines one variable, `label` that is the label the button will get.

`label` can either be a plain string or one of the label functions.

The header block

`elements`

This variable defines which elements to display. Set this to `auto` to display all elements that are needed to answer the questions in the lesson file. You can display more elements that needed to make it more difficult for the user. An example:

```
elements = progI, progIV, progV, progIV, progV_6
```

`music_displayer_stafflines`

Set this if you want the music displayer to show more than one empty staff line when the music displayer have no music to display.

See also at_question_start and music_displayer_stafflines.

The question block

`elements`

This variable defines which elements defines the question. It can be elements, as defined in the example above, or strings or labels defined by the label functions.

`tonic`

The exercise will have a "Play tonic" button if this variable is defined in a question in the lesson file. The variable should contain some music to play to the user so that he knows the tonic of the question. This can be useful in harmonic progressions that does not start on the tonic. This variable is optional. Example:

```
tonic = chord("c e g")
```

`name`

The name is needed for storing statistics. A string or a label created by the label functions.

See also vmusic.

The `harmonicinterval` module

User documentation is in la section intitulée « Intervalle harmonique ».

Here is a minimal lesson file:

```
header {
  module = harmonicinterval
  lesson_id = "a400df62-e007-4a1b-9057-cd05397e88a2"
  version = "3.1.4"
  title = "Seconds"
  intervals = [1, 2]
  test = "3x"
  test_requirement = "90%"
}
```

Additional variables you can put in the header. Click on the link to get an explanation:

- disable_unused_intervals
- lesson_heading

The `idbyname` module

This is a very generic exercise. In its most basic form, the program will play some sound, and you have to select among several buttons that in some way represents the music.

Here is a minimal lesson file:

```
header {
  module = idbyname
  lesson_id = "a400df62-e007-4a1b-9057-cd05397e88a2"
  version = "3.1.4"
  title = "Menuitem title"
}
question {
 name = "Major"
 music = chord("c' e' g'")
}
question {
 name = "Minor"
 music = chord("c' es' g'")
}
```

Optional idbyname header variables

`filldir = vertic`

Tell the direction the buttons are filled. Default value is `horiz`.

Modules: `idbyname`.

`fillnum`

Tell how many buttons there are in each row or column. The default value is 1.

Modules: `idbyname`.

`labelformat = progression`

The default value is `normal`. Set to `progression` for lesson files where the name of the questions is a harmonic progression, written in a undocumented, but not difficult format. Check some existing lesson file to see how it works.

> **Avertissement**
>
> Using this variable is deprecated. Do not use it for new lesson files.

Modules: `idbyname`

`have_repeat_slowly_button = yes`

Set to `yes` if you want the exercise to have a "Repeat slowly" button.

Modules: `idbyname`.

See also at_question_start and music_displayer_stafflines.

Question block

Required question variables

- name. Can be a string or a label created by the label functions.
- music

Optional question variables

`vmusic`

See vmusic.

`cuemusic`

Will be displayed in the music displayer when the user clicks New. Ignored if `at_question_start = play, show` or `at_question_start = show`, because then the content of `music` or `vmusic` is displayed when the user clicks New. (Added in Solfege 2.5.1)

The `identifybpm` module

Still undocumented...

The `idproperty` module

The `idproperty` module let you create exercises where solfege will play some music and you have to identify different properties of the music.

Below is a minimal lesson file. It will create an exercise that will play a minor or major chord and the user answers with two buttons labeled "Minor" and "Major" and two buttons representing the inversion. Notice that unused properties, toptone in this example, are hidden.

```
header {
    module = idproperty
    flavour = "chord"
    title = "Minor and major chords"
    lesson_id = "e263d40a-d8ff-4000-a7f2-c02ba087bf72"
}
question {
  name = "Major"
  music = chord("c' e' g'")
  inversion = 0
}
question {
  name = "Minor"
  music = chord("es' g' c''")
  inversion = 1
}
```

`flavour = "chord"` will add the following definitions to the lesson file header, unless if they are missing:

```
  new_button_label = _("_New chord")
  lesson_heading = _("Identify the chord")
  qprops = "name", "inversion", "toptone"
  qprop_labels = _("Name"), _("Inversion"), _("Toptone")
```

`new_button_label` is the label to put on the **New** button. The default value is `_("New")`.

`lesson_heading` will set the heading to be displayed when you practise. The default value is an emptry string, that will hide the heading.

The properties are defined by the `props` variable in the lesson file header, and there should be a variable `prop_labels` that defines the label to use. `props` and `prop_labels` must be lists of equal length.

The exercise will have a **Repeat arpeggio** button if one or more of the questions can be played arpeggiated. Set the lesson file header variable `have_repeat_arpeggio_button` to `no` to disable hide the button.

If the exercise have a `inversion` property, it will be treated special. If assigned integer values, like in the example, the integer values will be replaced with strings. So `0` is replaced with "root position", `1` with "1. inversion" etc.

The `idtone` module

Here is a minimal lesson file:

```
header {
    module = idtone
    title = "Id tone 3"
    lesson_id = "e263d70a-d8ff-4000-a7f2-c02ba087bf72"
    black_keys_weight =  0, 0,    0, 0, 0
    white_keys_weight = 1, 1, 1, 0, 0, 0, 0
}
```

The 'weight' of a tone tell how big chance is it that the program will select this tone as the next to identify.

Think of the weight of a tone as the number of lottery tickets with the name of the tone.

The variable `black_keys_weight` set the weight of the tones c#, d#, f#, g# and a#, and `white_keys_weight` will set the weight of the tones c, d, e, f, g, a, b. In the example above, the tones c, d and e get an equal weight of 1, the other tones 0. This mean that the only tones that will be asked for are c, d and e, and that the three tones share the same probability to be selected.

The `melodicinterval` module

User documentation is in la section intitulée « Intervalle mélodique ».

Here is a minimal lesson file:

```
header {
  module = melodicinterval
  lesson_id = "a400df62-e007-4a1b-9057-cd05397e88a2"
  version = "3.1.4"
  title = "Seconds and thirds"
  ask_for_intervals_0 = [1, 2, 3, 4, -1, -2, -3, -4]
  test = "3x"
  test_requirement = "90%"
}
```

Additional variables you can put in the header. Click on the link to get an explanation:

- disable_unused_intervals
- lesson_heading

Tests are only partially implemented for the `melodicinterval` exercise module: tests where each question is made by more than one interval does not work yet.

The `nameinterval` module

Here is a minimal lesson file:

```
header {
    lesson_id = "5623c43e-f529-4376-a0c9-c7d533050360"
    module = nameinterval
    title = _("Fifths")
    intervals = p5, a5, d5
}
```

`intervals`

A list the the intervals to ask for. The intervals are written in a short form, a letter and a number, like `d5` or `m7`. The letters are telling the interval quality are 'd' for diminished, 'a' for augmented, 'm' for minor, 'M' for major and 'p' for perfect.

`tones`

This variable sets the range of tones that can be used when constructing the intervals. The note names as to be quoted. The default value is `"b", "g'''"`. Example:

```
tones = "c'", "f'''"  # valid
tones = c', f''       # not valid
```

accidentals

This variable defines how many accidentals the tones making the interval can have. The value 0 means no accidentals, 1 means that flats and sharps are allowed, and 2 means that double flats and double sharps are allowed. The default value is 1. Example:

```
accidentals = 2
```

clef

Set which clef to use. The default value is `violin`. Possible values: `violin`, `treble`, `subbass`, `bass`, `baritone`, `varbaritone`, `tenor`, `alto`, `mezzosoprano` and `french`. Example:

```
clef = bass
```

The `rhythm` module

A simple rhythm exercise. Solfege will randomly generate rhythm patterns that the user should recreate by clicking on buttons.

Here is a minimal lesson file:

```
header {
  module = rhythm
  lesson_id = "7a4910be-de17-4ce3-9d15-78d48ccf945e"
  version = "3.1.4"
  title = "Easy rhythms"
  rhythm_elements = 1, 2, 3, 4
}
```

visible_rhythm_elements

Define this variable if you want more rhythm elements that the one to be asked for. This variable must include both the rhythm elements defined in `rhythm_elements` and the extra elements. Example:

```
rhythm_elements = 0, 1, 2, 3, 4, 5, 6
```

countin_perc

An integer value between 35 and 81, representing the percussion instrument used to give you the beat before the question. The default value is 80. Example:

```
countin_perc = 35

35 Acoustic Bass Drum 51 Ride Cymbal 1   67 High Agoga
36 Bass Drum          52 Chinece Cymbal  68 Agogo Low
37 Side Stick         53 Ride Bell       69 Cabasa
38 Acoustic Snare     54 Tambourine      70 Maracas
39 Hand Clap          55 Splash Cymbal   71 Short Whistle
40 Electric Snare     56 Cowbell         72 Long Whistle
41 Low Floor Tom      57 Crash cymbal 2  73 Short Guiro
42 Closed Hi Hat      58 Vibraslap       74 Long Guiro
43 High Floor Tom     59 Ride Cymbal 2   75 Claves
44 Pedal Hi Hat       60 Hi Bongo        76 Hi Wood Block
45 Low Tom            61 Low Bongo       77 Low Wood Block
46 Open HiHat         62 Mute Hi Conga   78 Mute Cuica
```

```
47 Low-Mid Tom        63 Open High Conga 79 Open Cuica
48 Hi-Mid Tom         64 Low Conga       80 Mute Triangle
49 Crash Cymbal 1     65 High Timbale    81 Open Triangle
50 High Tom           66 Low Timbale
```

Modules: `rhythm`

`rhythm_perc`

Same as countin_perc, but setting the instrument used to play the question. The default value is 37.

Modules: `rhythm`

`count_in`

The number of beats as count in. The default value is 2.

Modules: `rhythm`

`bpm`

The tempo, in beats per minute. The default value is 60.

Modules: `rhythm`

`num_beats`

The number of elements the question is made of. The default value is 4.

Modules: `rhythm`

The `rhythmtapping` module

Exercises using this module will play some music and then the user should tap the rhythm. The program will then say if the users rhythm is similar enough to the rhythm played by the computer.

Here is a minimal lesson file:

```
header {
  module = rhythmtapping
  lesson_id = "82b718e8-f174-446f-8297-58ddd17dae03"
  version = "3.7.0"
  title = "Rhythm tapping test"
}
question {
 music = rhythm("c4 c8 c8")
}
question {
 music = music("\staff\relative c'{c4 d8 e f4}\addvoice\relative c'{c4 b8 c a4}")
 rhythm = rhythm("c4 c8 c c4")
}
```

The first question in the example is very simple and self explaining. Solfege will play the rhythm defined in the `music` variable, and the user should tap that rhythm.

The second question is a little more complicated. Here Solfege will play the music defined in the `music` variable. And when the user taps the rhythm, Solfege will compare the users rhythm with the rhythm

defined in the `rhythm` variable. The reason for using two variables is that Solfege is not smart enought to figure out the rhythm if you enter polyphonic music. It make noe difference if you set the `rhythm` variable to be a `rhythm` music object, or another single voice type like `rvoice`. This might change in the future. You as a lesson file author must make sure the rhythms in the two variables are in fact the same.

The `rhythmtapping2` module

Solfege will play a generated rhythm, and the user should tap the same rhythm.

Here is a minimal lesson file:

```
header {
  module = rhythmtapping2
  lesson_id = "7a4916be-de47-42e3-9d15-78d48ccf945e"
  version = "3.7.0"
  title = "Rhythm tapping test"
  rhythm_elements = 1, 2, 3, 4
}
```

See also at_question_start.

The `singanswer` module

Here is a minimal lesson file:

```
header {
  module = singanswer
  lesson_id = "a400df62-e007-4a1b-9057-cd05397e88a2"
  version = "3.1.4"
  title = "Sing the root of the chord"
}
question {
    question_text = "Sing the root"
    music = chord("c' e' g'")
    answer = chord("c'")
}
question {
    question_text = "Sing the root"
    music = chord("a' c'' e''")
    answer = chord("a'")
}
```

Additional variables you can put in the header. Click on the link to get an explanation:

- have_repeat_arpeggio_button

The `singchord` module

Questions for this exercise need to have the `key` variable set if the key signature is anything else than "c" major (or "a" minor). Example:

```
header {
  module = singchord
  lesson_id = "a404df62-e037-6a1b-9027-cd05397e88a2"
  version = "3.1.4"
```

```
  title = "Simple chords"
}
question { music = satb("c''|e'|g|c") }
question { music = satb("a'|e'|c'|a") }
question { key="d \major" music = satb("a'|fis'|d'|d") }
question { key="f \minor" music = satb("as'|f'|c'|f") }
```

See also la section intitulée « Chanter un accord ».

The `singinterval` module

This is an exercise where the program display an interval and play the first tone. Then the user should sing the interval, and then click a button to hear the correct answer. There is no microphone support yet.

User documentation is in la section intitulée « Chanter un intervalle ».

Here is a minimal lesson file:

```
header {
  module = singinterval
  lesson_id = "a400df62-e007-4a1b-9057-cd05397e88a2"
  version = "3.1.4"
  title = "Thirds"
  ask_for_intervals_0 = [3, 4]
  test = "3x"
  test_requirement = "90%"
}
```

The `twelvetone` module

Still undocumented...

The `mpd` module

The module is not documented yet. The input format is similar to the one used by GNU Lilypond, but only the simplest construct works.

Quick note: Notenames understood by the program are c, d, e, f, g, a, b, with 'is', 'isis', 'es', or 'eses' added. For example 'fis', 'bes', 'gisis'.

Midi instrument names

```
         acoustic grand          contrabass      lead 7 (fifths)
        bright acoustic     tremolo strings   lead 8 (bass+lead)
         electric grand   pizzicato strings      pad 1 (new age)
             honky-tonk  orchestral strings         pad 2 (warm)
       electric piano 1             timpani    pad 3 (polysynth)
       electric piano 2   string ensemble 1        pad 4 (choir)
            harpsichord   string ensemble 2        pad 5 (bowed)
                   clav      synthstrings 1     pad 6 (metallic)
                celesta      synthstrings 2         pad 7 (halo)
           glockenspiel          choir aahs        pad 8 (sweep)
              music box          voice oohs          fx 1 (rain)
             vibraphone         synth voice    fx 2 (soundtrack)
                marimba       orchestra hit       fx 3 (crystal)
```

```
              xylophone             trumpet    fx 4 (atmosphere)
          tubular bells            trombone    fx 5 (brightness)
               dulcimer                tuba       fx 6 (goblins)
          drawbar organ       muted trumpet        fx 7 (echoes)
       percussive organ         french horn        fx 8 (sci-fi)
             rock organ       brass section                sitar
           church organ        synthbrass 1                banjo
             reed organ        synthbrass 2             shamisen
              accordion         soprano sax                 koto
              harmonica            alto sax              kalimba
             concertina           tenor sax              bagpipe
acoustic guitar (nylon)        baritone sax               fiddle
acoustic guitar (steel)                oboe               shanai
 electric guitar (jazz)        english horn          tinkle bell
electric guitar (clean)             bassoon                agogo
electric guitar (muted)            clarinet          steel drums
      overdriven guitar             piccolo            woodblock
       distorted guitar               flute           taiko drum
       guitar harmonics            recorder          melodic tom
          acoustic bass           pan flute           synth drum
 electric bass (finger)        blown bottle       reverse cymbal
   electric bass (pick)          skakuhachi    guitar fret noise
          fretless bass             whistle         breath noise
            slap bass 1             ocarina             seashore
            slap bass 2     lead 1 (square)           bird tweet
           synth bass 1   lead 2 (sawtooth)       telephone ring
           synth bass 2   lead 3 (calliope)           helicopter
                 violin      lead 4 (chiff)             applause
                  viola    lead 5 (charang)              gunshot
                  cello      lead 6 (voice)
```

Percussion instrument names

The first column is the integer value for the instrument. The second column tell the name of the note you should enter in the rhythm music object.

```
35 b,,   Acoustic Bass Drum   59 b     Ride Cymbal 2
36 c,    Bass Drum 1          60 c'    Hi Bongo
37 cis,  Side Stick           61 cis'  Low Bongo
38 d,    Acoustic Snare       62 d'    Mute Hi Conga
39 dis,  Hand Clap            63 dis'  Open High Conga
40 e,    Electric Snare       64 e'    Low Conga
41 f,    Low Floor Tom        65 f'    High Timbale
42 fis,  Closed Hi Hat        66 fis'  Low Timbale
43 g,    High Floor Tom       67 g'    High Agogo
44 gis,  Pedal Hi Hat         68 gis'  Agogo Low
45 a,    Low Tom              69 a'    Cabasa
46 ais,  Open HiHat           70 ais'  Maracas
47 b,    Low-Mid Tom          71 b'    Short Whistle
48 c     Hi-Mid Tom           72 c''   Long Whistle
49 cis   Crash Cymbal 1       73 cis'' Short Guiro
50 d     High Tom             74 d''   Long Guiro
51 dis   Ride Cymbal 1        75 dis'' Claves
52 e     Chinese Cymbal       76 e''   Hi Wood Block
53 f     Ride Bell            77 f''   Low Wood Block
54 fis   Tambourine           78 fis'' Mute Cuica
55 g     Splash Cymbal        79 g''   Open Cuica
56 gis   Cowbell              80 gis'' Mute Triangle
57 a     Crash Cymbal 2       81 a''   Open Triangle
58 ais   Vibraslap
```

Annexe A. GNU General Public License version 3

Version 3, 29 June 2007

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