Welcome to this Solarus Ebook about

How to do this : Work with Solarus...

Intermediate Guide

« This book is still under construction »

Terms and Conditions

The content in this guide is for your information and doesn't have an exhaustive characterization of the software. It is only for giving you some basic knowledge to understand more, how to do this...; with the software. The editor, writer and others can not be held responsible for all the errors or/and part errors and others. The images in this document were found on the web with the keyword "Free" and some other images and more in this file are also considered Free and available thank's to some peoples and the web.

Even if the content is free, it doesn't give you and others, the right to use the document files freely, dismantle and others at any time. This Ebook is free, can be distributed freely, saved for safe keeping. No money is made from it and can be made of it.

Thank's to the peoples from http://www.solarus-games.org, that have helped me to understand more this great software. Also for giving me authorization to take images to put into the pages. Thank's to Zefk from the Solarus forum and others for this guide. Note that it is not an official Solarus guide. The Zelda assets are owned by Nintendo. They are used under non-commercial and press purposes. There are considered as « Fair Use ». I hold no responsibility on how the book affects others. Note that the author dont make any profits of any kinds at any times from this document and it's content. This book can not be sold by any ones, can not be profitable.

Also you agree to not pursue, not sue, ask money and others; the persons making this document possible. Note that you also agree all terms, conditions and others that can be modified, added, deleted and others at any times by the author of this book. This is writen to protect the peoples of Solarus, of Nintendo as my self.

About this Ebook and the Creator of It

This document can be used as a basic intermediate guide using Solarus Game Engine. When we say as an intermediate guide, we assume that you know how to install and use a software, open windows, create and save some files, use a mouse, use a keyboard, copy and replace some files, etc.

In this guide we will use the software:
"Solarus version 1.5"

About the Author

Trough the years, the author have created many free pdf guides. This made with the acceptence and authorizations of peoples, for doing some printscreens images to put into the pages. He have created some free pdf guides oriented for the software Futurepinball, a basic Milkshape3d pdf guide; and have created some readings for other subjects. The comments of the peoples about these said, they are easy to understand; and fun to learn.

The author hope that this book will help you have fun with this great software that is called Solarus. The author want to give his thank's to the many peoples that have contributed there time, in this personnal free project. Without them it would not have been possible.

Thank's to all, and have a nice reading!

Where to download Solarus
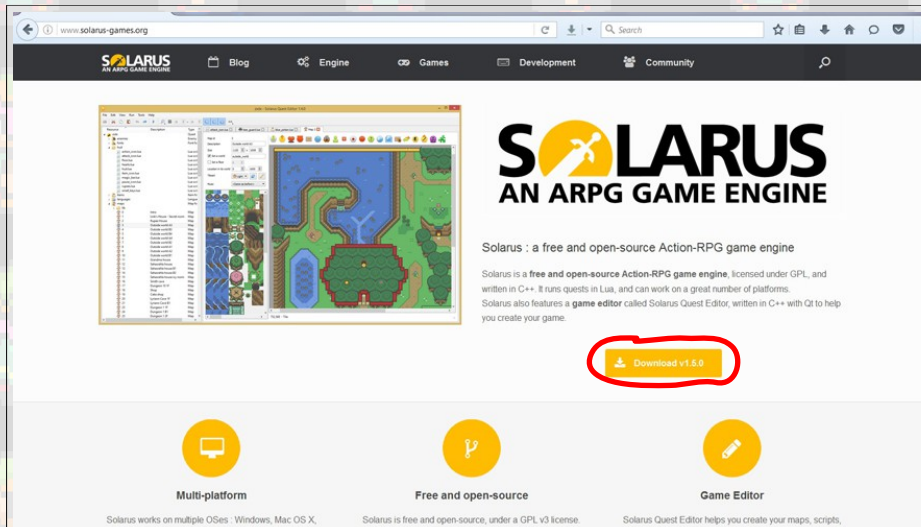
First you go at the site of : http://www.solarus-games.org you should then see the word to click on (**Download**). Note that the address is writen in full, just in case some people would want to modify the link to some website that would be a false website of Solarus.
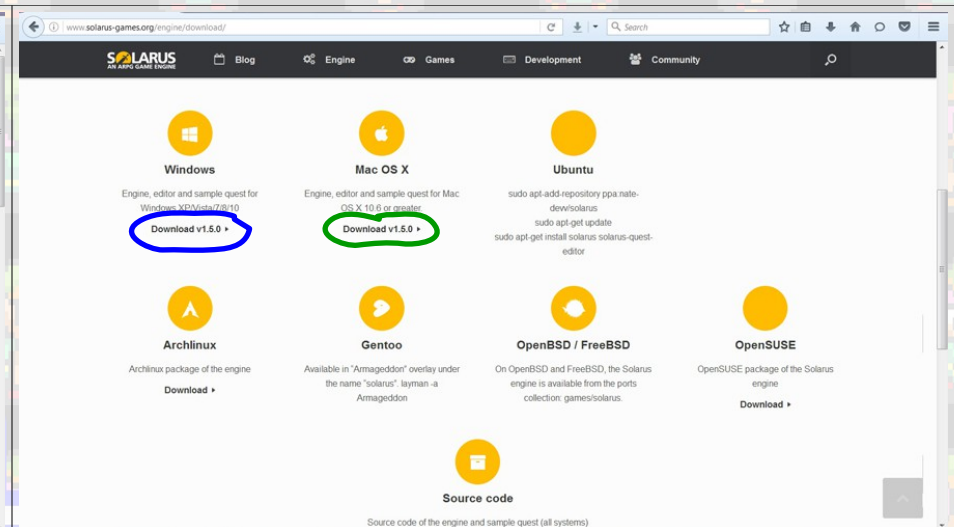
When you have clicked on (**Download**) by scrooling lower of the page you see for what operating system you download it. Like (**Windows**), (**Mac OS X**) as example.

Where to download the Legend of Zelda Resource Pack
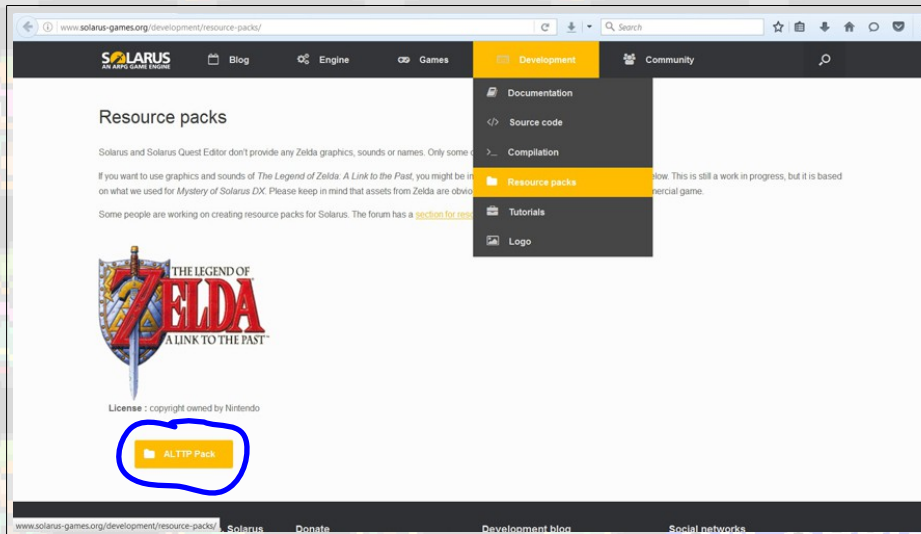
When you go on the website of « **Solarus** », you can point your mouse on the word (**Development**) then you choose (**Resources Packs**). You should then see the image of « **Zelda** » and under it the ressource pack that you click on (ALTTP Pack). This will make a new window open.
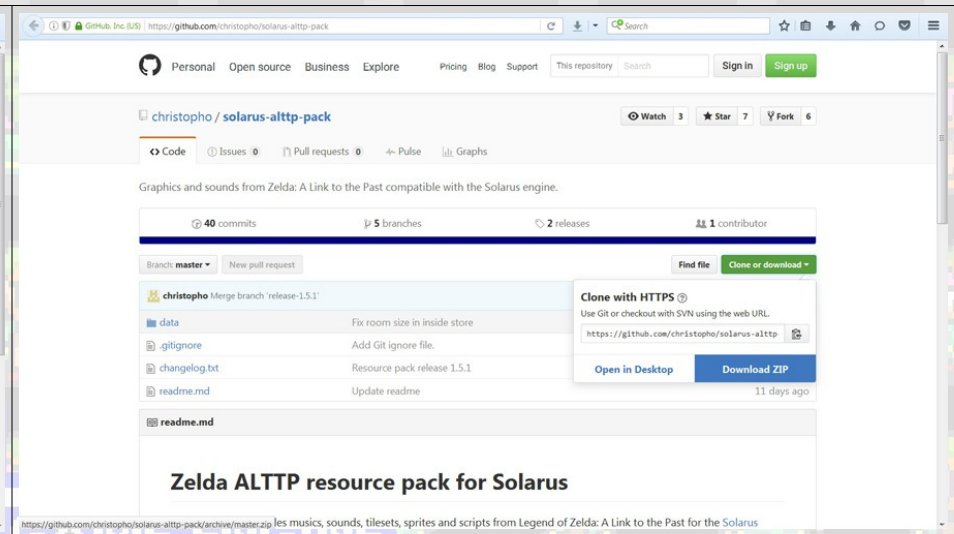
The next thing to do is simply click on the « **Green** » button writen (Clone or Download). This will make some menu apear and you click on the button writen (Download ZIP). You place it where you want on your computer and you « **Extact It** ». As told this book is an (**Intermediate Guide**), so you should also have the knowledges to know how to extract files that are zipped; and know where to place it.

What operating System can Solarus work on

It is said that it can go on Microsoft Windows, on Mac OS X, on Linux, on ReactOS Windows and others.

Where i can download some files for Solarus

Here are link's of suggestions of files that could be used for Solarus Quest Editor:

http://diarandor.deviantart.com/   https://github.com/Zefk/Fairyolica-World

Note that there are some Diarandor files in the "Sample Quest" of Solarus Quest Editor also.

Link's to softwares that might help you and other link's

Office softwares : http://www.openoffice.org	**Text Editor Softwares** : http://notepad-plus-plus.org
File archiver and extractor softwares : http://www.7-zip.org	**PDF Reader softwares** : http://www.adobe.com/reader
Graphics and Images softwares : http://www.gimp.org , http://www.inkscape.org/en Link to suggestions	**Audio softwares** : Ardour Professional Studio , Presonus Studio One , Audacity , FAEmedia , Link to suggestions
Font tools, Font softwares : http://fontstruct.com/ , Link to suggestions	**Screen Capture Softwares** : Shutter for Linux , Greenshot for Windows
Websites of softwares : http://www.download.com	

Other link's:

Some Solarus Documentations

Explaining how to create a Solarus Menu

How to do a Printscreen in Windows with the basic Windows soft

There are rumours that say that most peoples dont know how to do some printscreens, with there software already installed on there computer; as it is said it is rumours that is said. What they do then? They try to find some free softwares that can do printscreens for them.

How to do printscreens in Windows? (Operations maybe similar in other operating system)

On your computer keyboard, you should have a button that is writen (**FN**) wich is a « **Function** » button. By pressing the combination of the keyboard button (**FN**) plus the keyboard button (**Prnt Scrn**); wich mean the key's (**FN + PrntScrn**). It will simply copy all things that you see on the computer screen, at the time you press the combinations of keys.

What it is said is important is that what have been done as a printscreen is open, because this function tell from what you do a printscreen; to the software you copy it. So if you do some printscreen of a software and close it, then the window of what is said have been screen captured; it's possible that the computer wander what is the source of the screen captured.

The next step is to go to your Windows « **Start Icon** » by default at the (**Bottom-Left**). Then choose « **All Program's** », after you choose (**Accessories**); then you open the « **Paint** » Windows software. Once the (**Paint**) Windows software is opened, you simply do a « **Paste** », shortcut key's (**CTRL + V**).

To resume what's been done doing a « **Function + Printscreen** », it's like if you would do a « **Copy** » of what is shown on your computer screen; then you « **Paste It** » into the « **Windows Paint Soft** » by pressing the key's (**CTRL + V**). After in the software paint you can do a (**Save-As**) and save your screen capture where you want.

How to create a quest

First you go at the "Top Text Menu" where it is writen (File), then from it you choose (New Quest). It should then ask where you want to put your quest, after a quest properties will open looking as this:
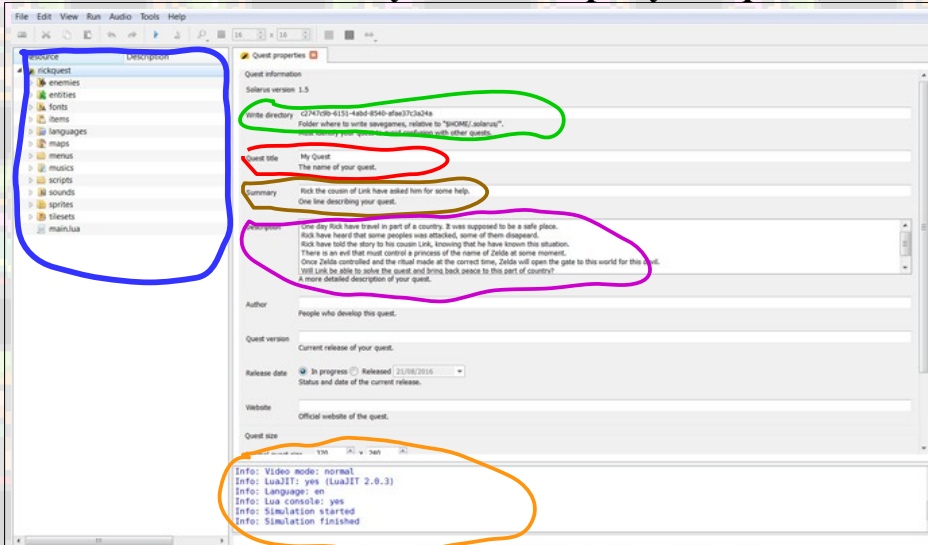
In (**Blue**) it is the tree of your components making the game.

In (**Green**) is where you give a unique directory name, for game saving informations.

In (**Red**) is your quest title, it is also the title you see in a window when you run your quest.

In (**Brown**) is a brief description of your game

In (**Purple**) is a longer description of your game.

I'm sure you have guessed the rest. For «Quest Size » just leave it to it's default state (320 by 240) at this time.

In (**Orange**) is the infos that Solarus give, i would call it the « Actions Infos » since Solarus do some actions and give infos.

## Replacing your game ressources by the ALTTP package

For this you should first know where is the new quest you just have created. Then simply unzip the Zelda ALTTP package, the files should already be in it's own repertoire. Note that Solarus must be closed before replacing the files. After simply copy all the the directory's to the place that have all the same directory's. If your computer ask to "Replace" then just say Yes!

After you should re-open again your quest of Solarus. In the Solarus Quest Maker you should notice the "Tree" that have the files. If in a directory you see some file that have some (Question Mark) as " ? ". Then with your mouse point the file and right click to see some menu apear, it should have the option as "add......". Once done the (Question Mark Icon) should change to some (Wooden Artistic Palette).

Tilesets example in Solarus

Simply go to the "Tilesets Directory" and (Double-Click) on a name. Here "Light World" have been double-clicked.
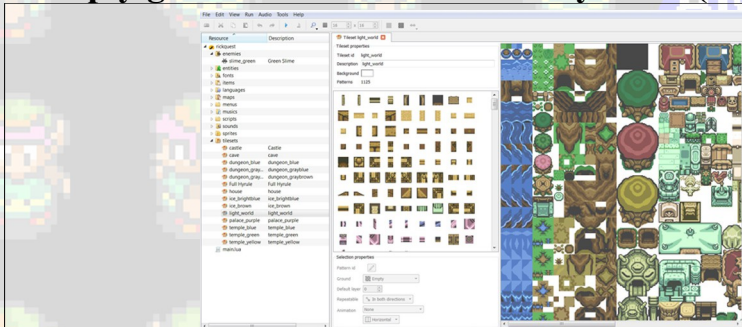

When you create a map where the player move, it have some informations like if the tile is « Lower » of the player, or if it's at the « Same Level » of the player, or if it is « Above » the player.

An example : I could say is that (Grass) would be « Lower » then the player, some (Tree Body) could be at the same level of the player; and the (Clouds) would be higher of the player. Some tiles can act differently like some tree, the player could decide to pass in front or go at the back of it.

Created by : S.Favron, with the help of other peoples.

Tileset Properties example
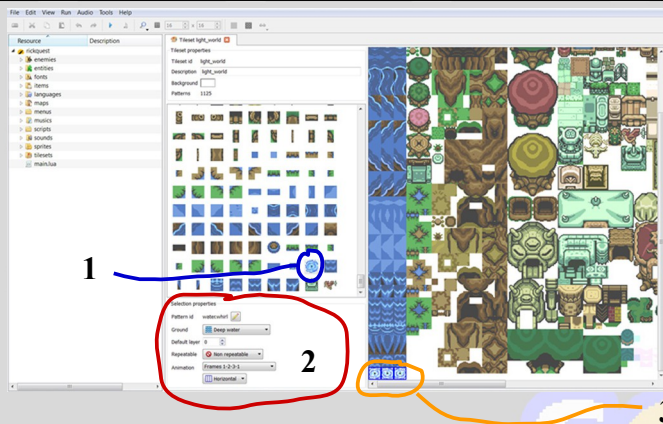
On this image i have clicked with the mouse some « **Swirl** » tile near some bird (**1**).

Where it is circled (**2**) it is the « **Tile Properties** » of what is clicked.

Patern ID : is the (Unique) name of the tile.

Ground : indicate what type of ground it is, in this example the ground is (**Deep Water**) wich mean the player Link must have some (Palm Item) to be able to swim in the (Deep Water).

Repeatable : indicate when you put the tile on a map, if you can draw the tile many times by dragging the tile; like using with some shortcut keyboard keys. If you want you can try to put a tile on your map that is « Repeatable », and a tile that is not Repeatable, just to figure the difference.

Animation : Here the (**Swirl Clicked**) is animated, it say it goes from the (**frame 1 to 3**) then return to frame 1 to loop. You can see (**3**) the frames 1 to 3. It also say's that the next frame is (**Horizontal**) of the first frame.
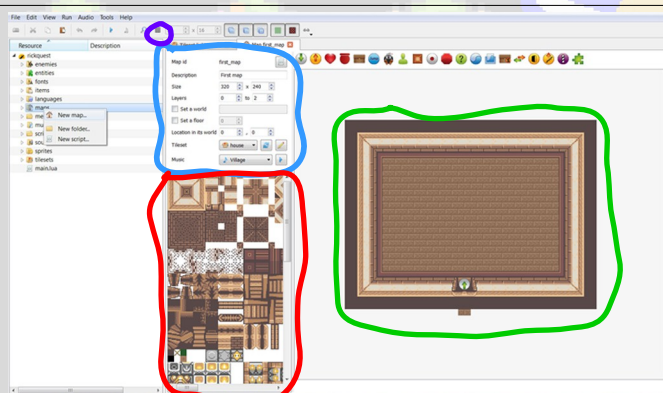
How to create a new map
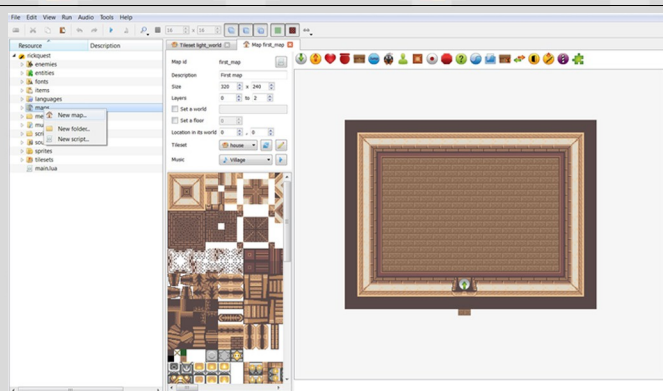
To create a map you simply go to your left, where is the (**Tree**) of your quest. You should then point with your mouse the section that is writen « **Map** ».

After you do a (**Right Mouse Button**) click, this will make apear some menu.

Simply click with your mouse the option « **New Map** ».

This part : have some infos, like the (**Size**) of your map. The (**Tileset**) wich make you select some tiles, that can change the look. (**Music**) is the music that play in the map, but can be changed trough script. Many options you can do. Near the (**Magnify**) you can make apear the (**Grid or Not**).
This part : is the pieces that compose the tileset. You can click on some tile, then click on the (**Map Beside**) to put the tile where you want. By (**Keeping pressed**) the mouse button you can resize some tiles. You can also (**Right-Click**) mouse button on the map to put many. You can cancel your tile selected by simply clicking on the keyboard (**Escape**). Feel comfortable with trying.

Creating a Start
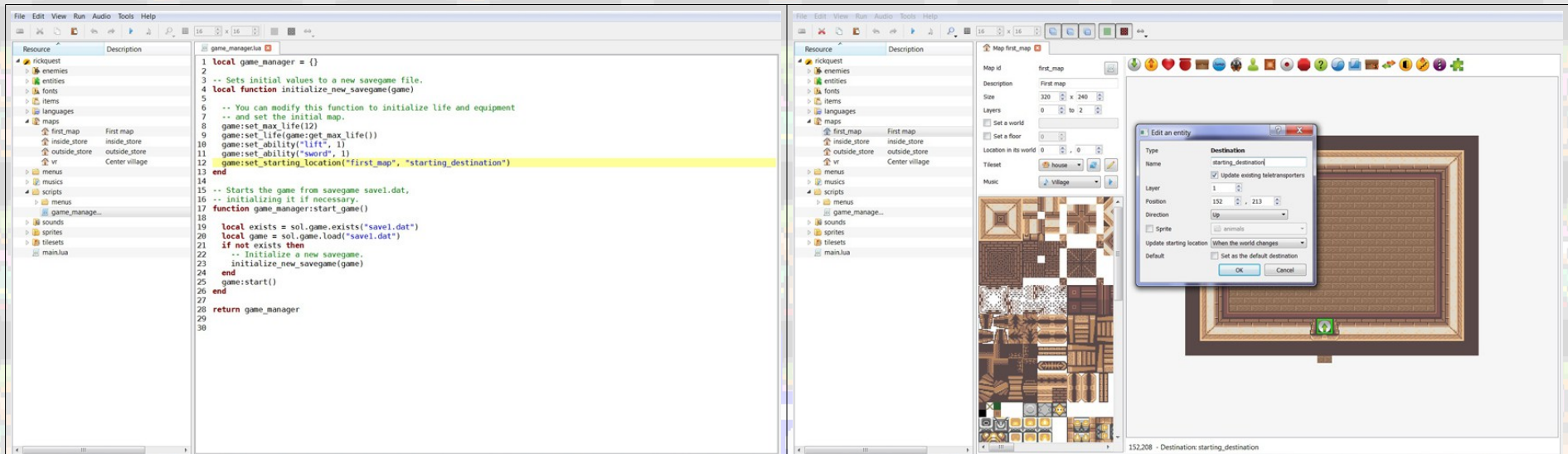
In the tree of the game, when you expand the folder (**Scripts**) after expand (**Menus**), you should see the LUA file « **Game manager** ». Double-clicking on it will make the LUA script apear in Solarus. You should notice it is writen :
set_starting_location("first_map", "starting_destination")
(**First Map**) is the name of the map. (**Starting Destination**) is the « **Entity** » that have the name (**Starting Destination**)

If we double-click on the map named (**First Map**), making apear the map. Then we double-click on the « **Entity** » that is some (**Destination Entity**), there will be a window that will open. You will notice that the « **Entity** » is named (**Starting Destination**). So if you simply want to put your player on some map just to test, you simply indicate the name of the map and the name of the entity in the LUA file. I think you understand the logic of it.

Creating some logo's for the Solarus Quest Player

Here is an image of the Solarus Quest Player of a quest i'm building. In « **Blue** » is the icon and title of your quest. In « **Red** » is the logo of your quest, below of it is the button (**Play**) to run your selected game. After there is the title of your quest, and some description of your quest. In « **Green** » is the buttons to add or remove some quest in the Solarus Quest's player. In « **Grey** » show the actions that the Solarus Quest Player do. In « **Orange** » is the list of quest's that the Solarus Quest Player have.

When you add some quest by clicking on the button "Add Quest" you simply go to the directory of your game. Note that the directory of your game contain the (data folder).

What is the file type used that can show the icon and logo? Well the image file type is (.png)!

What you do to show the images (icon & logo) of your quest in the player?
1st, into the (data folder) you create some folder that is writen in "small letters" the name of: (logos). The image representing the quest in the "**Red**", has the name of (logo.png); and it's size is 200px length by 140px height.

For the icon in the "**Blue**" is also a file in (.png) format. They have multiple names: (icon_16.png) and the size is 16px by 16px. Image (icon_24.png) is the size of 24px by 24px, (icon_32.png) is the size of 32px by 32px. It also have the images as: (icon_48.png), (icon_64.png), (icon_128.png), (icon_256.png), (icon_512.png) and (icon_1024.png).

Creating some stairs on a same map that go on two floors
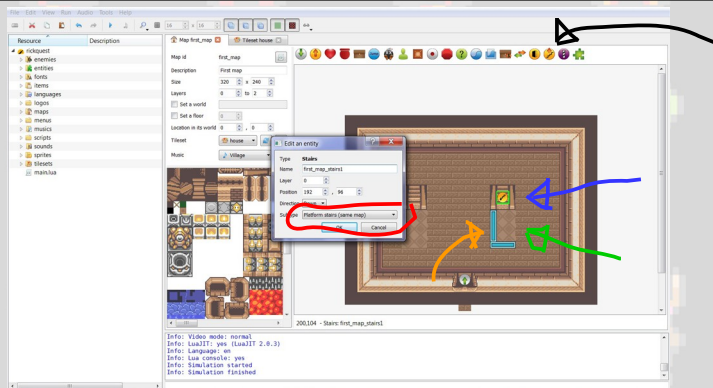
On this image all the bottom floor is at layer 0. The « **Black** » arrow point the (**Stairs Entity**) icon to put into the map. The « **Blue** » arrow point to the tile that have the (**Stairs Entity**) onto.

Because this entity is at « **layer 0** », when the player step on it go in the direction marked; if the entity is put on layer 0, when the player step on it; it tell that the hero go to the layer that can be higher or lower.

Note that when « **double mouse clicking** » on the entity it popup an option menu. In « **Red** » indicate what option it does. On the image here « **Subtype : Platform Stairs (Same Map)** ». It indicate on what layer it's on (**here it's layer 0**), and the direction the hero goes when he step on. Here it indicate the hero go in the direction of « **Down** ».

The « **Green** » is some floor tiles that are on the layer 1. When the player goes on the right of the floor on layer 1, it automaticly (fall down) on a lower layer wich is layer 0.

In « **Orange** » there is some (**Jumper Entity**) telling when the player goes onto, the hero jump in some direction.

Creating some rotating stairs going on two maps
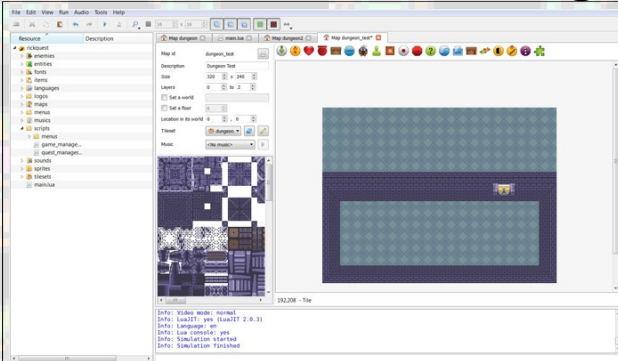
First you choose some tile that have some rotating stairs as the tile dungeon. Here the wall's are in purple color, and it dont matter that there are at layer 0, because there are some wall. So your hero look as beeing in front of the wall, but can not pass it; because the tile is of the type of : « Wall ».
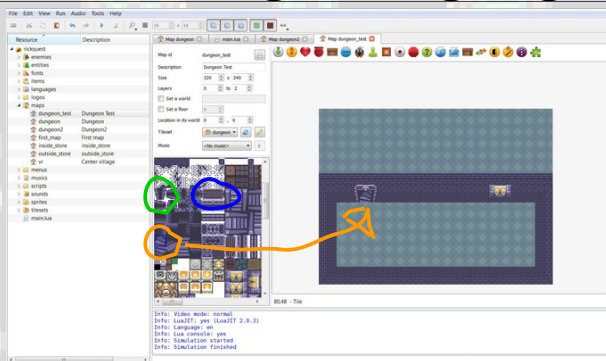
Then you put the rotating stairs that rotate to the right (if it's going up), or the rotating stairs to the left (if it's going down). The (**Stairs**) is also at layer 0, so that your hero can be over it. It dose not matter if you place the stairs over the wall, because doing so make the wall passable; because the tile that is some stairs is passable. The (**Sides**) is the left and right frame of the stairs, it is also at layer 0. The (**Top**) frame is at layer 1. You can also put an arrow on it at layer (2) if you want.
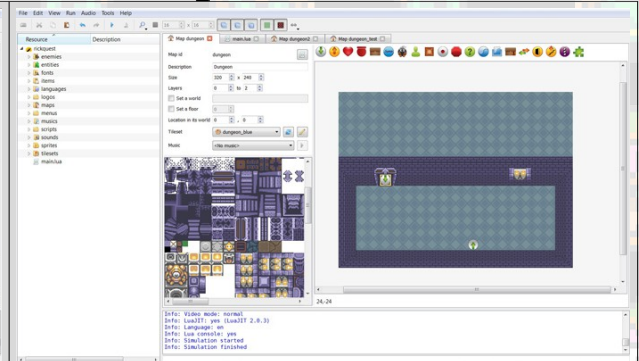
After you position on the stairs at layer 0 three entities. The (**Stairs Entity**) telling the direction is « **Up** » because the hero go « **Up** » to the stairs; and you choose a (**Spiral**) option movement. The (**Destination Entity**) giving it a name and direction. Also the (**Teleport Entity**), this entity by double-clicking will ask what (**Destination**) will go. If it goes on some (**Destination**) on the same map or an other map. So the logic of it is that, when the hero (**Steps on**) it make some spiral movement and teleport to some destination.

Zefk Infos about: Basic License Informations

Basic License Information

About:

I had massive of amounts of license questions when looking for free graphics and audio. It can give one a headache, so I decided to not let others to go through what I had to. I will not talk about non-commercial use licenses, but these can be used for noncommercial use. This will be simplified version because who wants to read through a million pages? Let us begin our GPL and CC Journey! Added a note for MIT License.

CC: - Creative Commons

Source: **https://en.wikipedia.org/wiki/Creative_Commons_license**

CC0- This is a public domain waiver. It means one can do as they wish with it and mix it with anything. No restrictions.

CC-BY- One must attribute to the artist the way they ask. Name, link, etc.

CC-BY-SA- One must attribute to the artist the way they ask. Name, link, etc. Also, you must share your modifications! (SA = Share-alike) You can credit yourself and must credit the other artists.

The 3.0 and 4.0 version of the Share Alike licenses includes a compatibility clause, allowing Creative Commons to declare other licenses as compatible and therefore derivatives may use these instead of the license of the original work. That means a CC-BY 3.0 pieces can be combined with CC-BY-SA 3.0 and released as CC-BY-SA 3.0

Source: **https://en.wikipedia.org/wiki/Share-alike**
source: **https://wiki.creativecommons.org/wiki/4.0/Compatibility**

CC-BY-ND- CC-BY is okay to modify as long as it is not CC-BY-ND ND is for no derivatives or remixes.

Zefk Infos about: Basic License Informations (Part 2)

GPL: - General Public License

<u>LGPL - Lesser General Public License</u>- Commercial and noncommercial use.

The freedom to use the software for any purpose,
the freedom to change the software to suit your needs,
the freedom to share the software with your friends and neighbors, and
the freedom to share the changes you make.

The LGPL and GPL licenses differ with one major exception; with LGPL the requirement that you open up the source code to your own extensions to the software is removed.

<u>GPL - General Public License</u>- Commercial and non-commercial use.
The freedom to use the software for any purpose,
the freedom to change the software to suit your needs,
the freedom to share the software with your friends and neighbors, and
the freedom to share the changes you make.

GPL (Not LGPL) Source Code Release:
The GPL FAQ has this to say about keeping your modifications private:
Source: **https://www.gnu.org/licenses/gpl-faq.html#GPLRequireSourcePostedPublic**

Does the GPL require that source code of modified versions be posted to the public?

The GPL does not require you to release your modified version, or any part of it. You are free to make modifications and use them privately, without ever releasing them...

But if you release the modified version to the public in some way, the GPL requires you to make the modified source code available to the program's users, under the GPL.
Thus, the GPL gives permission to release the modified program in certain ways, and not in other ways; but the decision of whether to release it is up to you.

Zefk Infos about: Basic License Informations (Part 3)

Mixture:(As in putting them on the same png, keep reading for package mixture.)

<u>Creative common mixture</u> can leave your mind a little confused. CC0 obviously can be used with anything, but what about CC-BY and CC-BY-SA? How do I mix these or can it do that?

The answer is yes! You can mix them, but you must credit all the authors and release it under CC-BY-SA.

<u>GPL Mixture</u> can I mix it with GPL art? No! You can not unless it is GPL3 being mixed with CC-BY-SA**4.0**or CC0. It will be released as GPL3 and never can be released as CC-BY-SA 4.0. Source: **https://creativecommons.org/compatiblelicenses/**

<u>Package mixture:</u>
Can art/audio under CC0, CC-BY, CC-BY-SA, and GPL be put in the same package on separate image/audio files such as png/ogg? Yes!
GPL code mixed with other code is always turned into GPL, but code is functional data. Non-functional data based on beauty are not affected by any GPL functional data. That means all audio and graphics will stay as their own license. Source: **http://opengameart.org/content/faq#q-ccgplcompat**

Non-functional Data

Data that has an aesthetic purpose (Beauty purposes), rather than a functional one, may be included in a free system distribution as long as its license gives you permission to copy and redistribute, both **for commercial and non-commercial purposes.** For example, there are some game engines that have been released under the GNU GPL, and have accompanying game information, a world map, game graphics, and so on released under such a verbatim distribution license. This kind of data can be part of a free system distribution.

Source: **http://www.gnu.org/philosophy/free-system-distribution-guidelines.html**

Zefk Infos about: Basic License Informations (Part 4)

Loopholes:

Programming code is amazing because it allows loopholes. What do I mean? Layers, overlaying, etc.

You can overlay a GPL tree trunk and a CC Bushy tree top with programming code or Game Engines as long as the art pieces are on separate image files.

Sadly, Solarus has no plans on supporting this tab feature.
https://github.com/christopho/solarus-quest-editor/issues/182

EX:
http://forum.solarus-games.org/index.php/topic,603.0.html

MIT - Other info:

MITis another license that is somewhat common with freedom, but trust me there are a bunch of them. MIT is pretty short and easy to understand. You are free to sell, give away, etc.

Zefk Infos about: Basic License Informations (Part 5)

Mixture:(Putting together,**not package mixture.** Ex: Putting MIT pixels on GPL pixels or putting a Mit audio loop with a GPL loop together. As long as they are on the same image or audio file.)

MIT can be put into GPL, but not the other way around. Do understand that audio and pixel art are almost never MIT license. I found no sources on it or mention of mixture with creative commons. You can, however mix MIT audio and the pixel art (if any exists) with the GPL. You will have to release it as GPL. Most engines or code are under MIT. For instance, Torgue 3D game engine.
Ex: **http://www.garagegames.com/products/torque-3d**
Source: **https://en.wikipedia.org/wiki/MIT_License**

MIT:
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.

Zefk Infos about: Basic License Informations (Part 6)

Formats:
.ogg is an open source format and it should be used in most projects for the games to work perfectly on Linux Operating systems. (This format works in Solarus)
.png is very common due to transparency. It is free to use just like .ogg.

MP3 license has fees, but there are ways to avoid it. Solarus does not support MP3 as far as I know, but read on for more information.

If you let Flash combine everything into a single .swf it therefore avoids separate MP3 files, making the license unnecessary for Flash games. (If you use external MP3s though, you still fall under the license!)

Source: **https://www.scirra.com/blog/65/even-more-about-audio-licenses-on-the-web**

Questions or improvement suggestions:
Please let me know if you have any questions because they may help make this guide better.

Common questions:

1.**Q:**I made unique art that I do not want free. Will the GPL3 force me to make them free?
   A:No. Only your game programming code is made free under GPL3. You have full rights to your audio and pixel art. I mention this above. You will still have to release the source code because GPL requires it, so it might be best to have your non-free art in a separate package, but you can encrypt it. No one is saying you "have" to share your unique original art. I honestly can not find anything on it because it is not a free distribution, but if you are including free Creative common or GPL graphics, then you must release those license type graphics for free. If you get complaints about your original encrypted art, then separate your original art that you do not want to be free. You can sell it on a separate disc or it can be bought and downloaded online. Your selling package (GPL data on one disc and original art on the other) or disc is not GPL, so people would have to buy it if it was sold in a store. You have your right to sell it. You must have the source code free somewhere and online is the best way to do that.

2.**Q:**Can I encrypt my code?
   A:I would think so, but you must still release that code not encrypted as GPL3 if you distribute your game. I do not see the point in encrypting it.

Zefk Infos about: Basic License Informations (Part 7)

Common questions continue:

3.**Q:**Can I encrypt my art and audio?

 A:Yes, but you must still release that encryption code under GPL 3 not encrypted if you distribute your game. I do not see the point in encrypting unless it is not free art/audio. You may want to encrypt your own audio and pixel art so the majority of the people do not rapidly distribute your work illegally. Solarus does have a way to **archive your data and rename the extension to data.solarus** You might need to keep some .dll if things break. I had to. This is good because you can compress your data with zip (only) and rename the extension. This will be fine for protecting your art and audio from the majority. You will still have to release the source code, so it might be best to have your non-free art in a separate package. See A, B, C, D, & E if you are having a hard time deciding encryption due to GPL3 license.

A.At some point in time someone somehow will decrypt your encryption.
B.People can just record your audio and print screen your pixel art to edit. They do not have to decrypt it.
C.People can use your work under **fair use** for criticism, commentary, parody, news reporting, research and scholarship, and classroom instruction. I would think that the attention your work is getting is a good thing. It might increase the sells for your next game.
Source: **https://en.wikipedia.org/wiki/Fair_use**
D.People who buy games will almost always buy games.
E.You will still have to release the source code, so it might be best to have your non-free art in a separate package.

4.**Q:**Does my story writing became GPL? GPL is a **software** license, so text and writing really does not apply. The last I checked stories are not software. There is not really an answer anywhere.

 A1: If your story writing and dialogues are written in the lua programming code with Solarus libraries (EX: sol.surface.create("Menu.png")) and distributed with or without game, then **no or yes**. Stories are not software.

 A2: If your story writing and dialogues are written in the lua programming code **without** Solarus libraries (EX: sol.surface.create("Menu.png")) and **not** distributed with game, then **no**. Lua is MIT and you can do what you want with it, but Stories are not software.

 A3: If you use a .dat file, then yes and no. This can be debated either way. It contains text data and basic formats, but it is not really programming code like Lua. The programming code uses the data. Distributing it separately should be okay. This way your story does not become GPL, but again that might be impossible because stories are not software.

Zefk Infos about: Basic License Informations (Part 8)

How do I license my work?

In anyway you want as long as you are the owner of the work. You can put them under as many difference licenses or you can make up one. You can give people an option to pick different licenses as well. For example, pick from GPL, CC-BY 3.0, and CC-BY-SA 3.0. You do not have to choose those licenses and you can make up a license that will be compatible with any license. You can also give non-commercial restrictions or no remixes/derivatives. Your work! Your rules! A popular license might protect your work more and the same goes if you share it with a large community. **Example for free with commercial GPL free distribution compatibility**

Most people want credit like this:

1. They want to know when others use/modify their work.
2. They want their name in the credits.
3. They want a link to their website in the scrolling credits or a text file.

You might want the same!

Deciding to no longer use CC-BY:

Anything once CC-BY is always CC-BY. You can stop distributing it as creative commons and no longer use the CC-BY logo, but it can still be used under that license. Ex: The Solarus logo is GPLv3, but is can still be used under CC-BY 3.0 because it was once that license.
Source: **https://creativecommons.org/faq/#what-if-i-change-my-mind-about-using-a-cc-license**