SDL 9 - Fonts in video games

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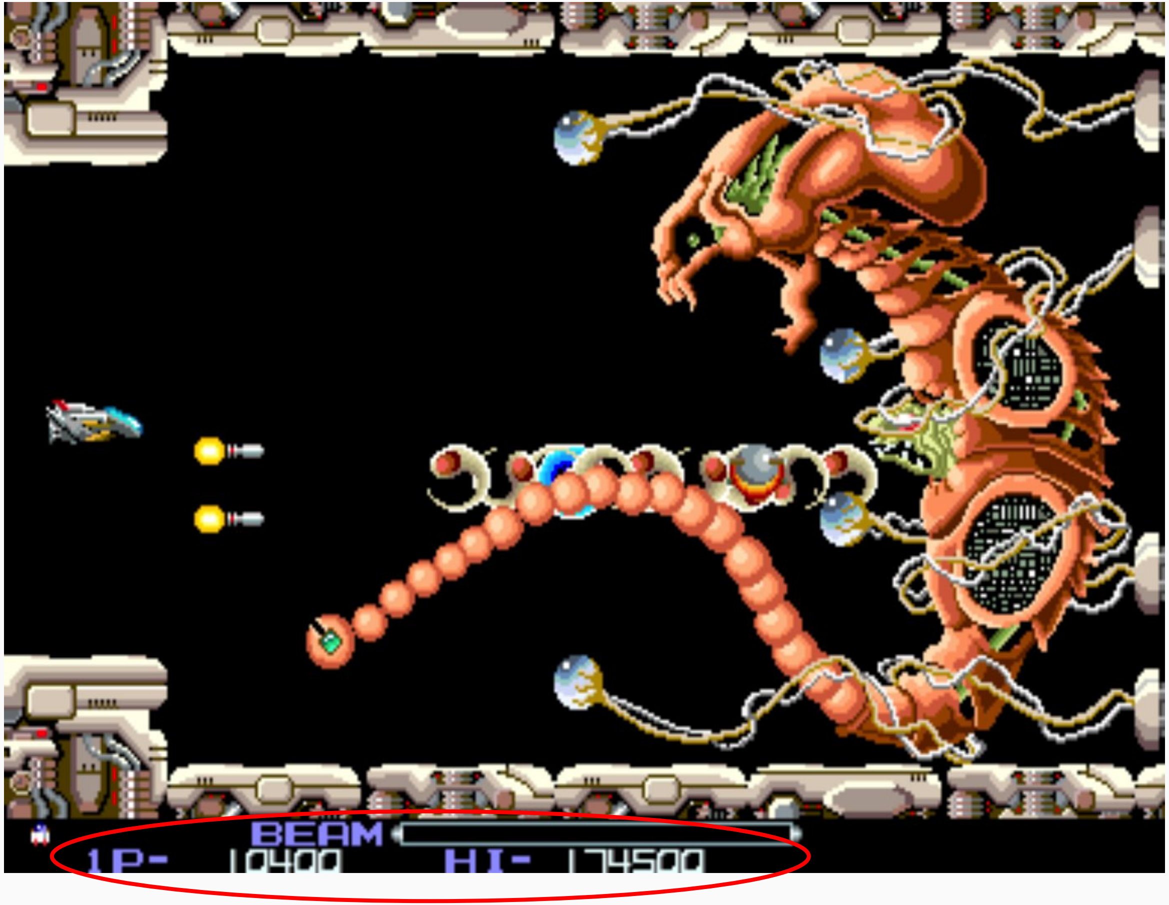
Fonts and video games



General improvements

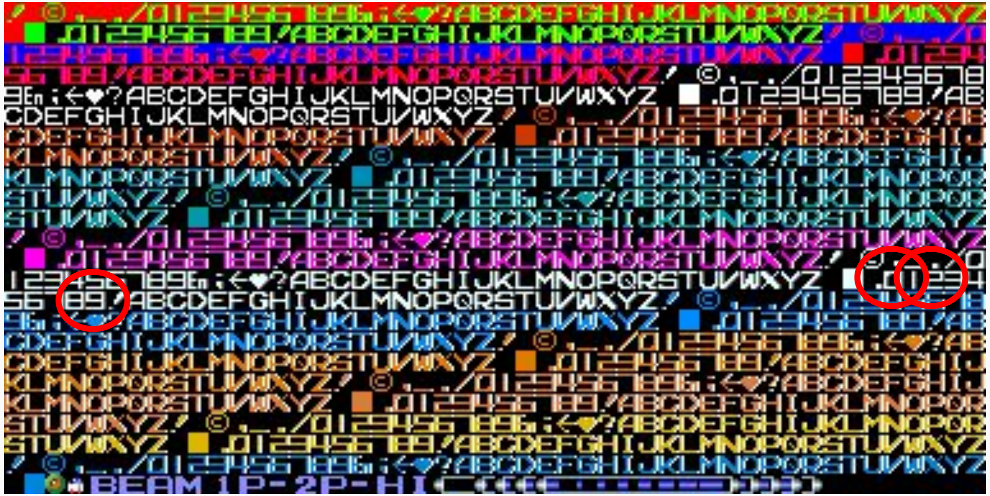
- New ModuleTextures::LoadSurface()
- New ModuleTextures::GetSize()
- Now ModuleRenderer::Blit() has an optional arg to ignore camera
- ModulePlayer now draws player score in the bottom
  - *It would be better to have a full ModuleUI, but is good enough for now*

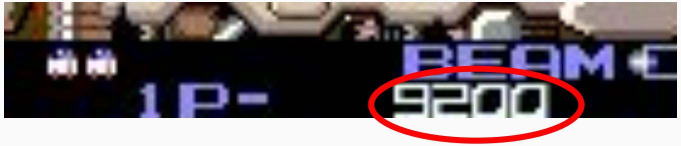
New Module: Fonts!

- Module that is always loaded (not based on scene)
- Creates a bitmap font from a png file and a list of characters
- All characters must fill the same space
- Could have more than one row
- Once a font is loaded, we can now Blit to screen with it

Bitmap Fonts

- In video games fonts do not exist, only textures!
- The texture is out in pieces and draw the individual characters

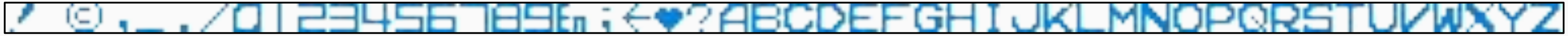




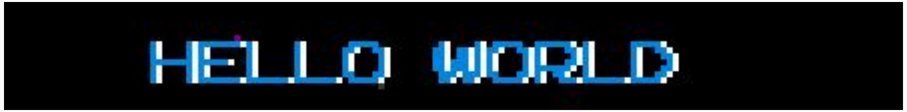
Loading Bitmap Fonts

Font System will look up every character in a string in a **Lookup Table**:

```
“! @,_./0123456789$;<&?abcdefghijklmnopqrstuvwxyz”
```



Now printing “hello world”:



TODO 1

“Finish storing font data”

- To retrieve a texture’s width and height use *ModuleTextures::GetSize()*
- Final calculations are: len:48, row_chars:48, char_w: 8, char_h:7
- You should find a formula for each, **do not hardcode those values!**
- This method will be called from ModulePlayer::Start(), check TODO 0:

```
App->fonts->Load("fonts/rtype_font.png", "! @,_./0123456789$;<&?abcdefghijklmnopqrstuvwxyz", 1);
```

TODO 2

*“Find the character in the table and its position in the texture, then **Blit**()”*

- This is the most important TODO
- You should iterate all characters in your font table
- If you have a match, calculate the x and y of the rect
- Then just Blit()
- Remember to increment screen’s x draw position

TODO 3

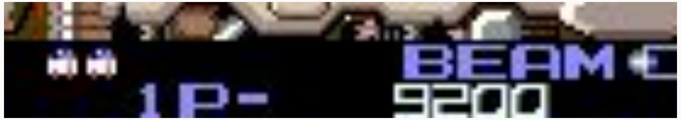
“Blit the text of the score at the bottom of the screen”

- You are nearly done, just call the method you just created
- You can send score_text property with the score
- ...it contains padding of 7 spaces already
- You should have the score working visible and in the solution.exe

TODO 4

*“Try loading "**rtype_font3.png**" that has two rows to test if all calculations are correct”*

- The font will be white as the original game



Homework

- For the next delivery a minimum score display must exist
- The end goal is to know how good the player is
- You should have already a texture from the previous delivery in the wiki
- Try following the score points from the original game