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**Multimodal Interfaces for Games
(COM2061)**

**ICA Component 1
Graphical User Interface for a Games Tool**

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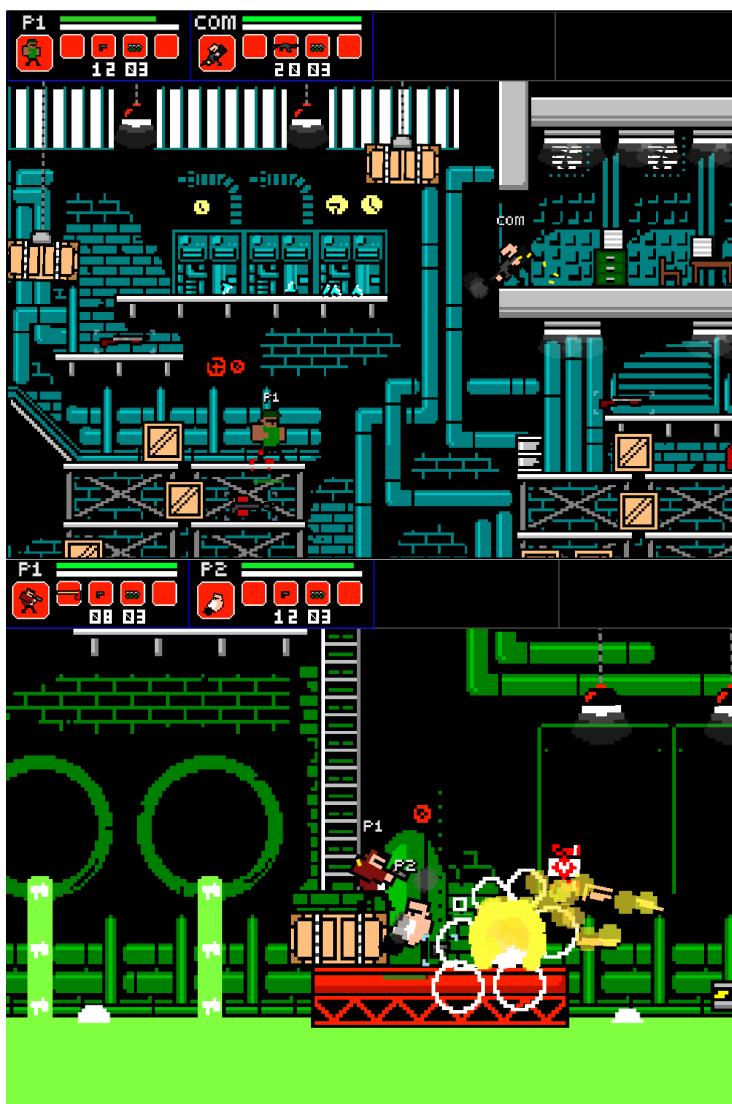
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1 INTRODUCTION

The level editor is designed for a Game Engine Construction project that is heavily inspired by an online flash game called SuperFighters™.

SuperFighters, is a game 2D platform shooter that has you fighting against other players (or AI) by picking up weapons and shooting each other.

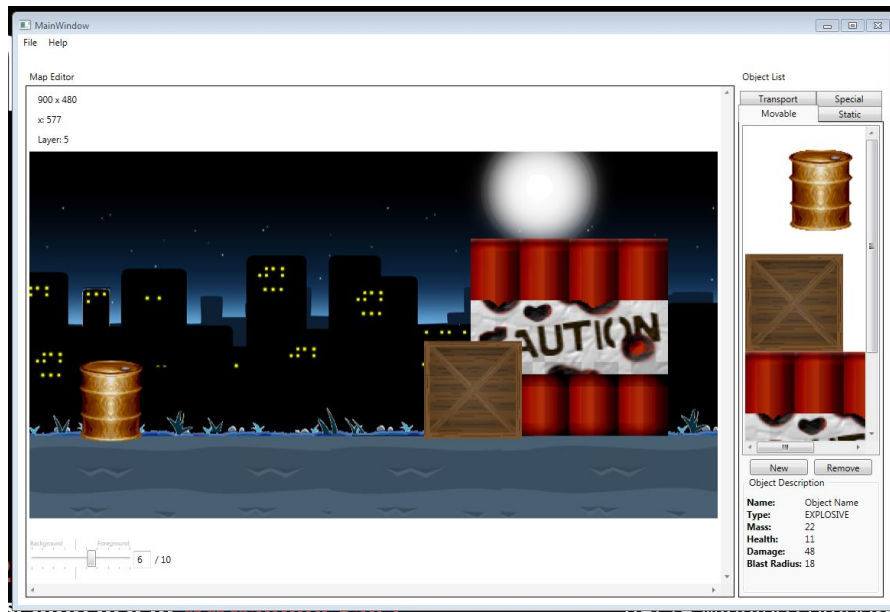
The game takes place in a modern world, where you can use pickups as well as objects in the world to eliminate your opponent(s). The game is physics driven, so you can push objects over and off things as you wish (such as boxes, barrels, desks, etc.).



The game itself, as well as the rightful publishers can be found at:

<http://www.newgrounds.com/portal/view/575163>

2 SOFTWARE DESIGN



The editor is a free roaming drag and drop game editor, with custom objects, that can be deleted and added as the user sees fit. The program can be broken into two parts:

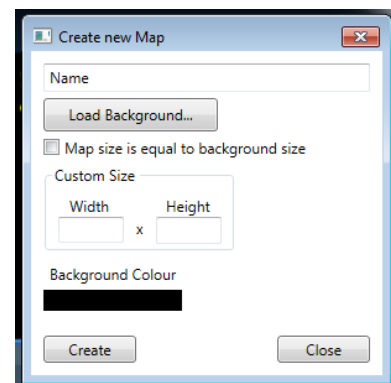
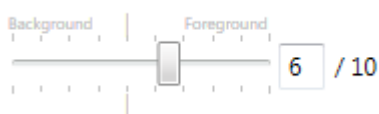
1. Map view
2. Object view

The main inspiration for the level editor comes from the classic *Warcraft 3* Level editor, however very simplified.



2.1 Map View

The map view handles everything that is going to be added to the game itself. When you add an object to the map, you can drag it around and change what layer the object is on. This allows you to have objects overlap each other. When you create a new map, you will be presented with a new window that allows you to set the map properties, this including the map size and name.¹



¹ Background colour button yet to be implemented

2.2 Object View

The object view handles every object in the game. The objects are broken into separate tabs accordingly. The object types are as follows:

2.2.1 Transport Objects

“Teleportation points”, Platforms, Ladders

2.2.2 Static Objects

Floors and walls

2.2.3 Movable Objects (Objects influenced by physics)

Breakable Objects, Unbreakable Objects, Explosive Objects, Ropes, Particles.

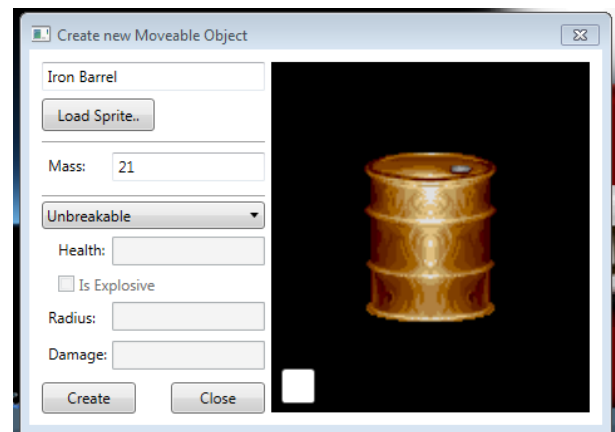
2.2.4 Special Objects

Player spawners

All of these objects have their own properties that may differ depending on what object it is.²

Objects can be added and removed as the users sees fit. When creating a new object, the user is presented with various options that will determine what type of object it will.

The details about any given object is displayed at the bottom of the object view.



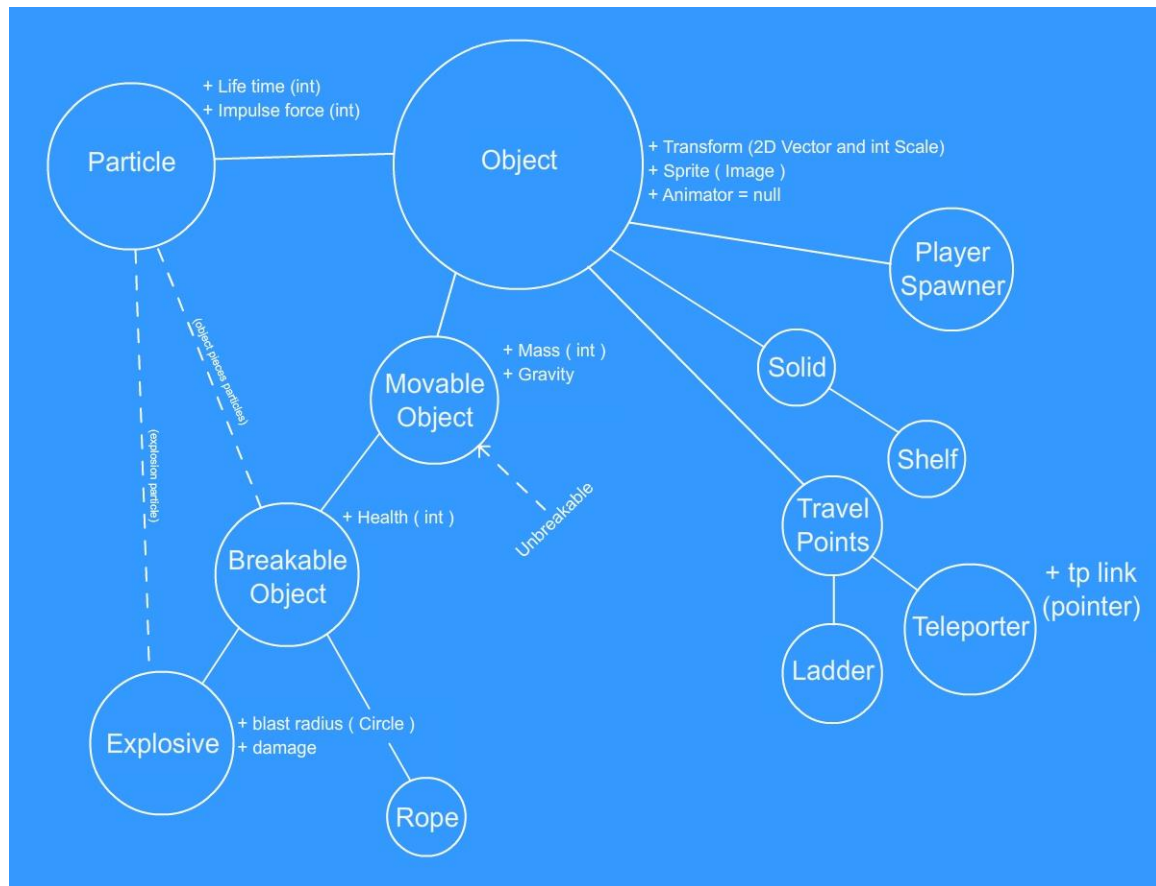
² Note that only the moveable tab has been completed, also that the ropes and particles have not been implemented.

2.3 Saving & Loading

As expected, the user can save and load maps. The maps are saved in an xml format, the structure of it is that it stores the information in groups, the map information, and then a group for every object tab:

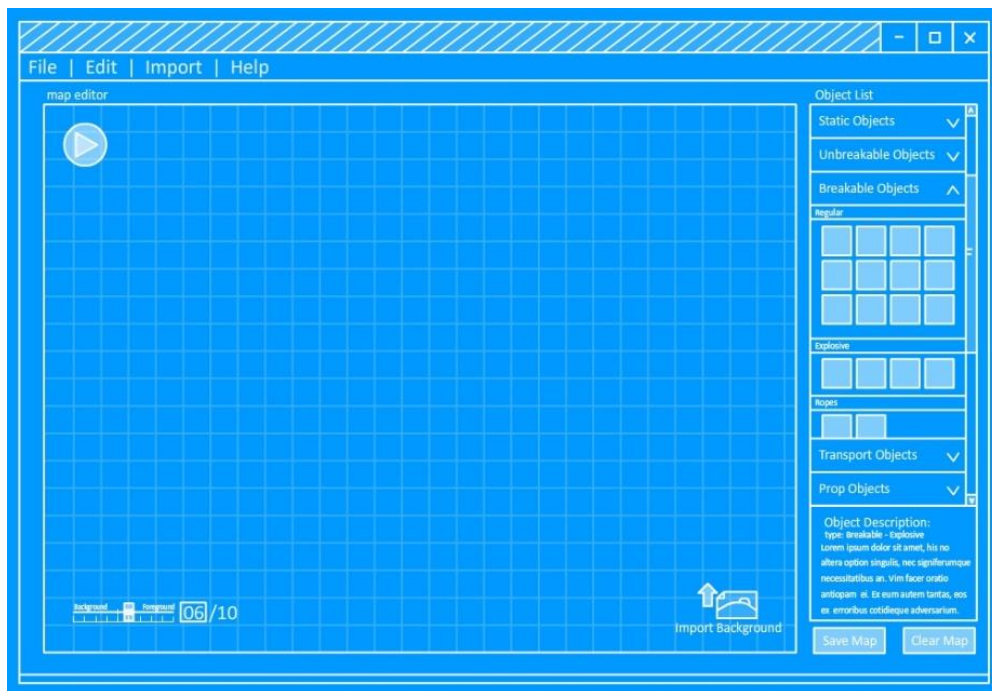
```
<?xml version="1.0" encoding="UTF-8"?>
<StoredObjects>
  <BACKGROUND xmlns="BACKGROUND">
    <Name xmlns="">Town</Name>
    <Background_Source xmlns="">U:\Homework\Year 2\Multimodal Interfaces for Games\ICA 2\LevelEditor 2\Resources\background.png</Background_Source>
    <Width xmlns="">900</Width>
    <Height xmlns="">480</Height>
  </BACKGROUND>
  <MOVEABLE xmlns="MOVEABLE">
    <BREAKABLE xmlns="">
      <Name>Crate</Name>
      <SpriteSource>U:\Homework\Year 2\Multimodal Interfaces for Games\ICA 2\LevelEditor 2\Resources\Crate.png</SpriteSource>
      <Layer>6</Layer>
      <Transform>
        <Position PosX="516" PosY="248" />
        <Scale ScaleX="1" ScaleY="1" />
      </Transform>
      <Mass>32</Mass>
      <Health>22</Health>
    </BREAKABLE>
    <UNBREAKABLE xmlns="">
      <Name>Barrel</Name>
      <SpriteSource>U:\Homework\Year 2\Multimodal Interfaces for Games\ICA 2\LevelEditor 2\Resources\barrel.png</SpriteSource>
      <Layer>5</Layer>
      <Transform>
        <Position PosX="8" PosY="243" />
        <Scale ScaleX="1" ScaleY="1" />
      </Transform>
      <Mass>22</Mass>
    </UNBREAKABLE>
    <EXPLOSIVE xmlns="">
      <Name>Object Name</Name>
      <SpriteSource>U:\Homework\Year 2\Multimodal Interfaces for Games\ICA 2\LevelEditor 2\Resources\tnt.png</SpriteSource>
      <Layer>5</Layer>
      <Transform>
        <Position PosX="577" PosY="114" />
        <Scale ScaleX="1" ScaleY="1" />
      </Transform>
      <Mass>22</Mass>
      <Health>11</Health>
      <Explosive_Damage>48</Explosive_Damage>
      <Blast_Radius>18</Blast_Radius>
    </EXPLOSIVE>
  </MOVEABLE>
</StoredObjects>
```

The object list is also stored in its own separate xml file, and it uses the same structure, minus the background information. As shown on the xml file, most of the properties for the objects vary slightly, but still look similar. This is because of the class structure of the objects. Turn to the next page to see a the hierarchy class diagram

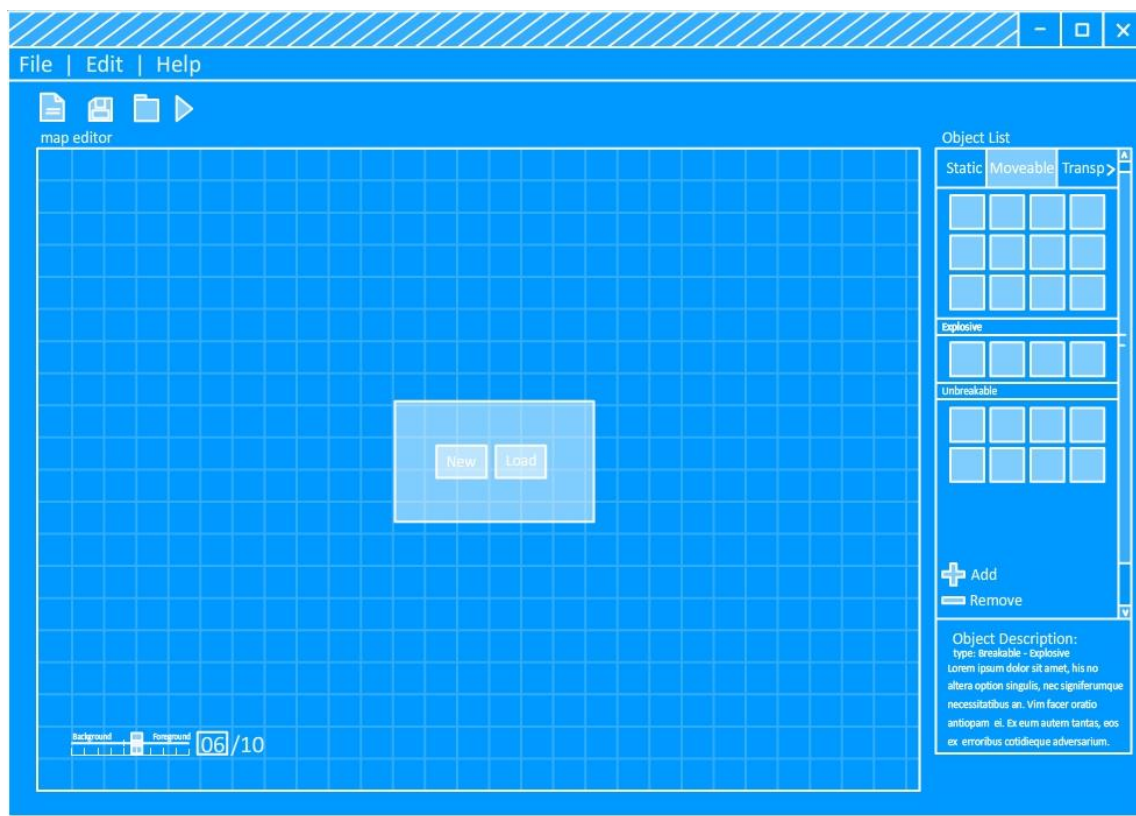


2.4 Design Sketch-up

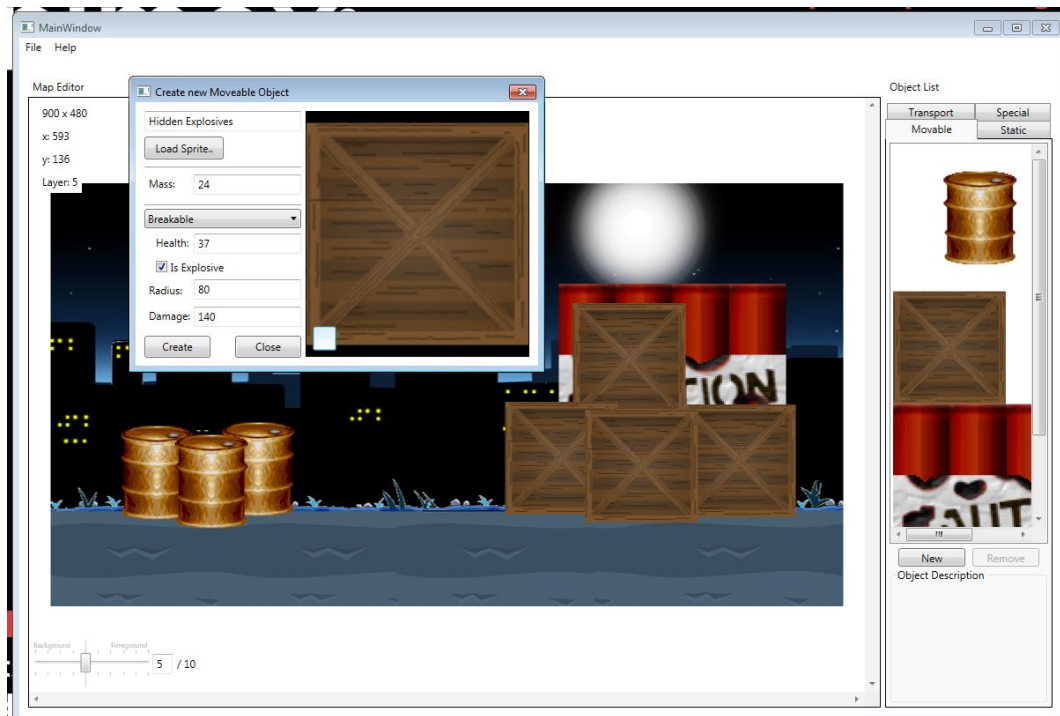
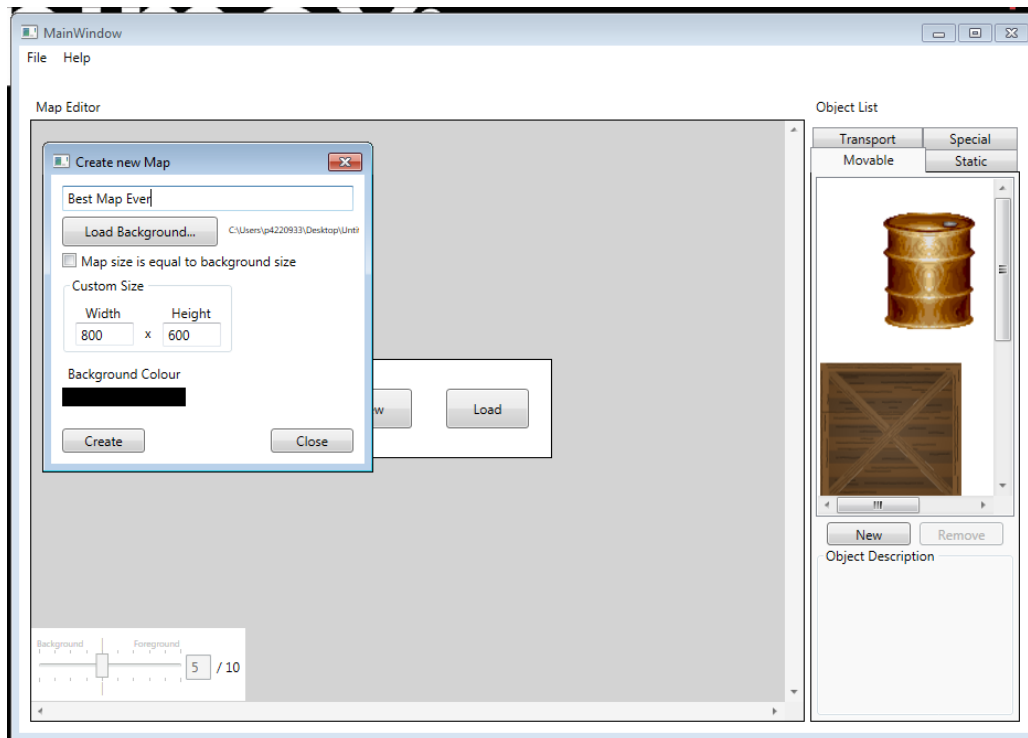
Initial design:



Final Design:



3 RESULTS



4 REFERENCES/BIBLIOGRAPHY

Sprites and backgrounds:

Background	http://img11.deviantart.net/926e/i/2012/100/1/1/angry_birds_city_background_by_munir99-d4vqlcu.png
Barrel	http://www.sprites-resource.com/resources/sheet_icons/38/40793.png
Explosives	http://i.imgur.com/fFzzP8U.png