University of Regina

ENSE 400/477

Project Night Terror System & Object Design

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Last Modified
February 24, 2019

Revision History

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1   Introduction
1.1   Purpose
The purpose of this document is to outline and summarize the class diagrams and structures of Project Night Terror. It is important to note that as a game, there are very many structures involved. In response, this document will outline major classes, structures, and objects. It is also important to note that an Unreal Engine 4 Blueprint is a type of representation for classes and classes will be created through blueprints instead of text code.
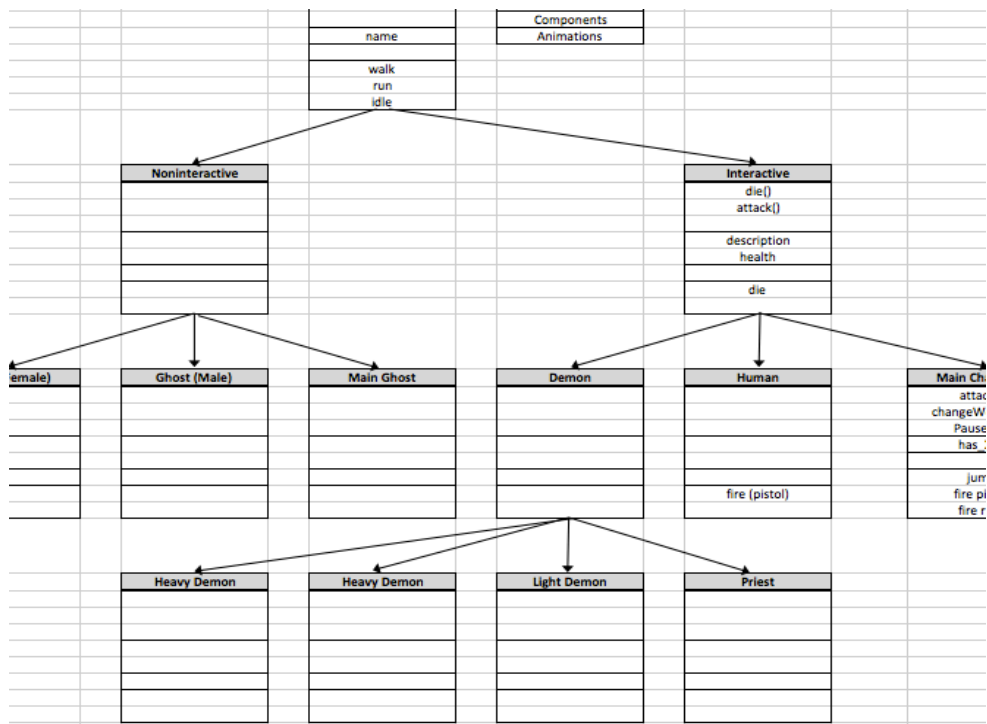
2   Class Diagrams
2.1   Characters

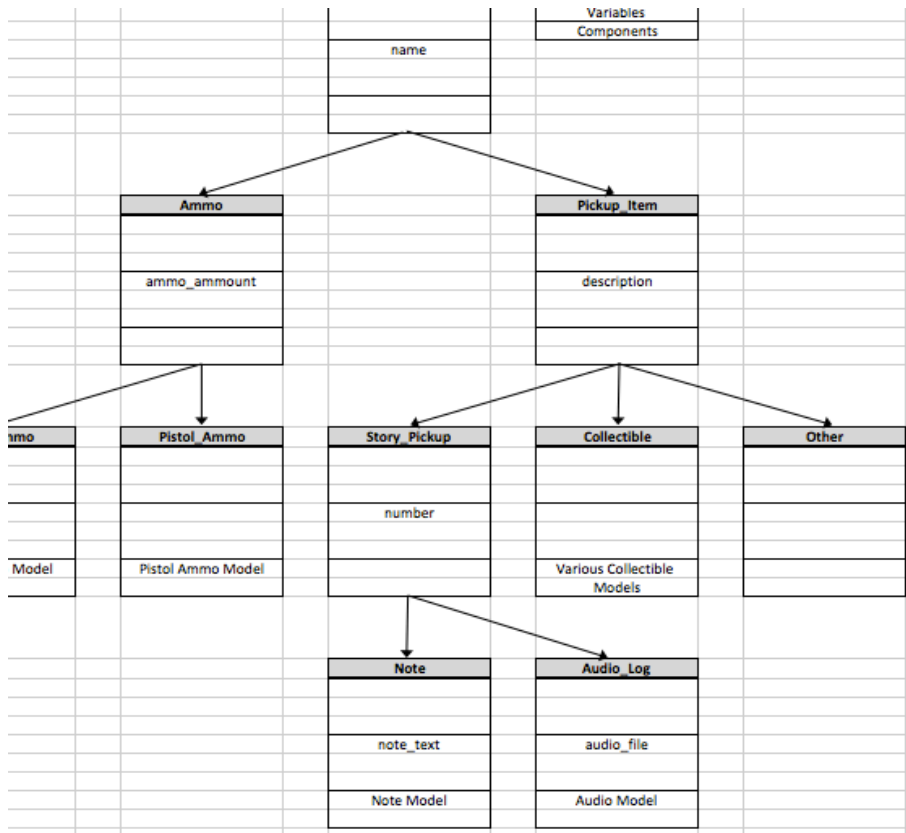*Figure 2-1. Character Class Diagram*

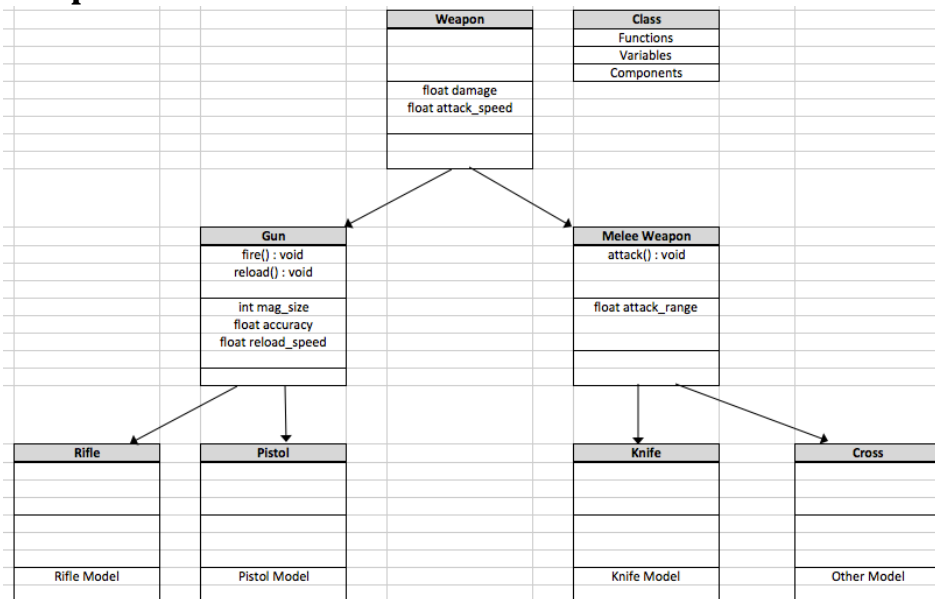## 2.2   Collectables

Figure 2-2. Collectable Class Diagram

2.3 Weapons

Figure 2-3. Weapon Class Diagram

3 Flow Chart Structures
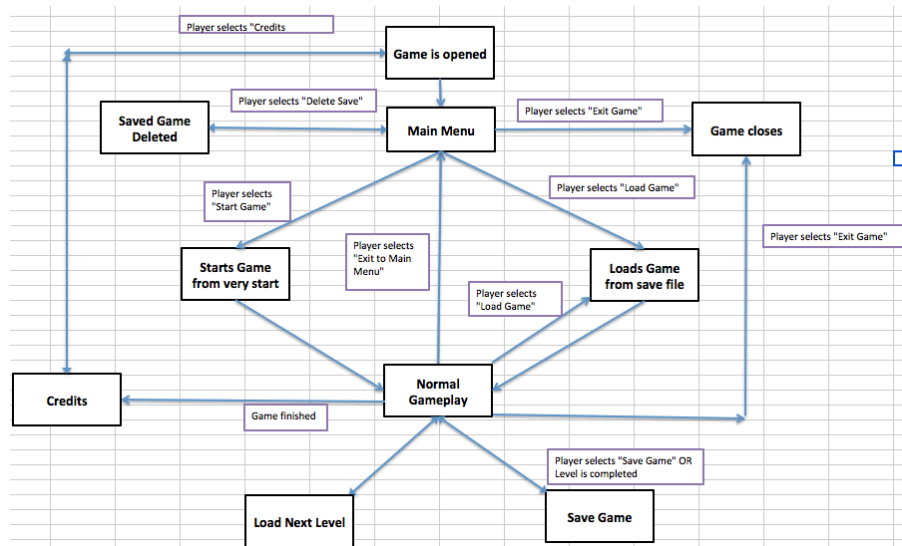## 3.1 Purpose

3.2   General Game Flow

Figure 3.1-1. Basic Flowchart of the Game

3.3   Saving & Loading

4   Perk Trees
4.1   Purpose

Throughout the game players collect upgrades to enhance their character in different categories. The different areas are: health, flashlight, pistol, rifle, cross, and knife. The player can select any perk the wish as long as all attached previous nodes have been chosen already. Initial nodes in the tree can be chosen with no prerequisite nodes required.

For example, in the figure below node 1 and node 2 can be chosen right away. However, node 3 can only be chosen once node 1 has been previously chosen. Node 4 can only be chosen once node 1 and node 2 have been previously chosen.

Figure 4.1-1. Perk Tree Example

4.2   Health

4.3   Flashlight

4.4   Pistol

4.5   Rifle

4.6   Cross

4.7   Knife

5   Blend Spaces
5.1   Purpose
A blend space is used to create

5.2   General Blend Space

6   State Machines
6.1   Purpose
The state machines described below allow the characters to move from one animation state to another. The state machines allow for smoother transitions created by blend spaces and also allow separation of unique animations such as dying or a normal movement blend space versus a movement with a weapon blend space.

6.2   Main Character
6.3   Heavy Demon
6.4   Light Demon
6.5   Main Demon
6.6   Ghost
6.7   Main Ghost

7   AI Behaviour Trees
7.1   Purpose
The behaviour trees help the AI to determine what it should be doing. In the figures below

7.2   Main Character
7.3   Heavy Demon
7.4   Light Demon
7.5   Main Demon
7.6   Ghost
7.7   Main Ghost