# Diablo 1 (1996) – Retro game documentatie

## Kevin Absen – Kernmodule Game Development jaar 2

**Concept:**
For the core module of Game Development I decided to recreate Diablo 1 from the original Diablo series by Blizzard Entertainment. The reason why I wanted to recreate Diablo 1 was because I always liked the gameplay, mechanics and story of the game. And it seemed like a fun challenge to me to practice my programming and art skills by recreating this game in a more straightforward version with my own unique twist.

I specifically wanted to focus on programming and designing the User Interfaces for the game (combat UI and inventory UI) and the combat system that is associated to AI enemies.

At the moment you can only use the primary and secondary skills. Unfortunately I didn't have time to program the rest of the abilities.

*Diablo in a nutshell:*
Diablo is an action role-playing hack and slash video game. The player moves and interacts with the environment primarily by way of a mouse. Other actions, such as casting a spell, are performed in response to keyboard inputs. The player can acquire items, learn spells, defeat enemies, and interact with non-player characters (NPC)s throughout the game.

**Twist:**
While Diablo is originally played in isometric-perspective, my game is played in top-down perspective with rotatable horizontal camera controls (third person). I also wanted to redesign the art style to 3D low poly style which makes it easier for me to control the environment (such as roofs disappearing when entering a building). The game has a linear gameplay but with many "benefits" that give you rewards (such as gold or items). There is only be one playable class for the time being which is a combination of Barbarian and Wizard, but with a focus on sword combat. I scrapped a lot of stats that Diablo 1 has to make it a little easier for me. The following is a list of the available stats in the game:

- Strength: Increases damage done per hit.
- Defense: Decreases damage taken by enemies.
- Vitality: Increases maximum health points.
- Stamina: Increases maximum mana points.

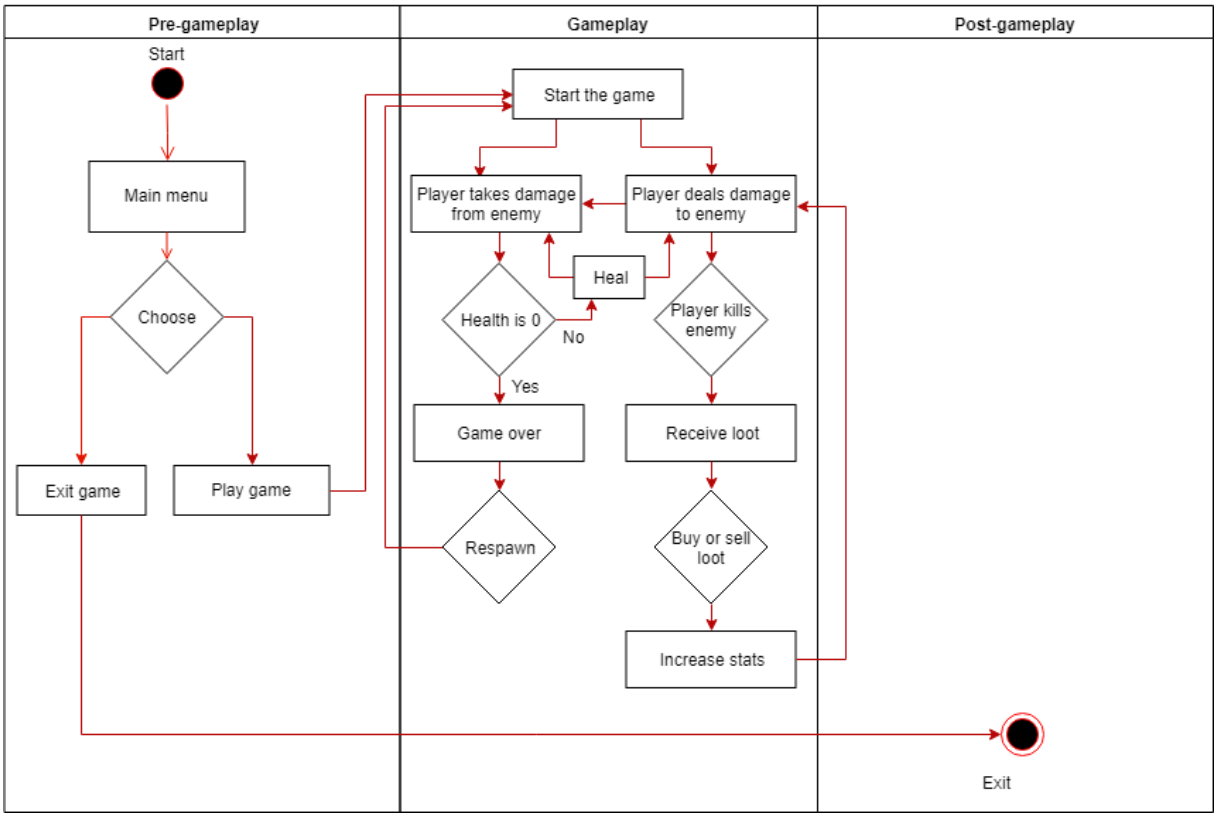
The skills/abilities also vary a lot from Diablo 1. Below is a list of the attainable abilities:

- Primary: Slash (deal 100% damage, generate 15 mana per hit).

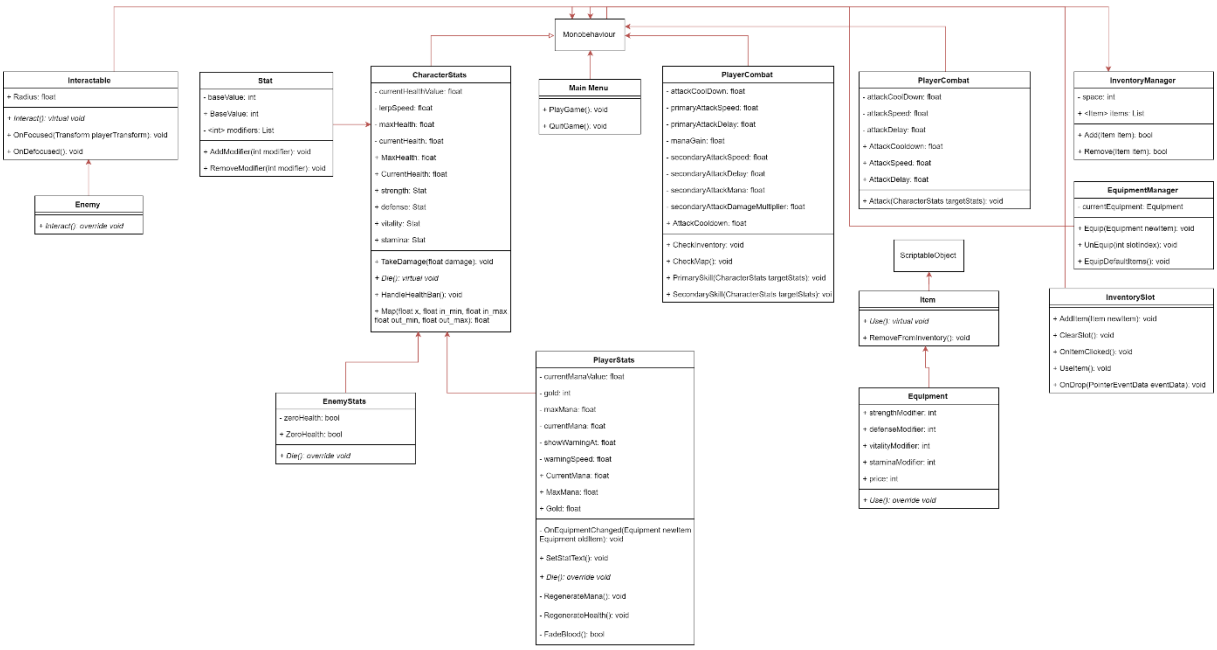
- Secondary: Fire Strike (deal 300% damage, 40 mana cost).
- Defensive: Shield Bubble (decreases damage taken by 50%, duration 5 seconds).
- Power: Sprint (increases walkspeed by 50%).
- Summoning: Minions (summons 2 clones of yourself that each deal 50% damage, duration 10 seconds).
- Ultimate: Immortality (increases health by 500%, damage by 500%, duration 10 seconds).

*Design patterns:*
I used two design patterns in my game. The first one is a *singleton* for my game manager which takes care of storing items and stats for the game. The second one is a *delegate* which takes care of initiating callback methods for methods like changing equipment.

**UML Activity Diagram:**



**UML Class Diagram:**




**Game Controls:**
You can move around by clicking on the screen and you can stop moving with shift (in case you need to attack). With A and D or the arrow keys you can rotate your screen on the horizontal axis and with your mouse wheel you can zoom in and out.

To attack you can use either the left mouse button (primary attack) or right mouse button (secondary attack). In addition to key/mousebinds, you can open your inventory with the I-key and your minimap with the M-key.

To pick up items, either click on them or walk over them (for example health orbs). You can also drop items by dragging them out of your inventory slot. Left mouse click in your inventory to equip/unequip items.

**Sources:**

Design patterns:
https://sourcemaking.com/design_patterns

Random snippets:
https://docs.unity3d.com/ScriptReference/UI.Graphic.CrossFadeAlpha.html
https://docs.unity3d.com/ScriptReference/Random.Range.html
https://unity3d.com/learn/tutorials/projects/2d-ufo-tutorial/counting-collectables-and-displaying-score
https://polycount.com/discussion/151718/healthbar-below-zero
https://www.youtube.com/watch?v=aPXvoWVabPY

UI:
https://www.youtube.com/watch?v=28JTTXqMvOU
https://www.youtube.com/watch?v=db6ofSbAXnE
https://www.youtube.com/watch?v=Pc8K_DVPgVM
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https://www.youtube.com/watch?v=hzuxb8CPGyQ
https://www.youtube.com/watch?v=Wx9TgWl4LAU

AI:
https://www.youtube.com/watch?v=o011XuWOMmM
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