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Games Programming (AC31009)
Report - Wimli

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Design Patterns

MVC

MVC has been used in the game more like MC and V. All the assets are loaded in the Preload state, which keeps them separate from the game logic. Thus adhering to MVC.

Observer Pattern

The observer pattern is used to update the player's health. When an enemy damages the player (subject), a health point is deducted. The displayed hearts graphic signifying health is then changed to show this deduction in health.

Game Loop Pattern

The game loop pattern is implemented with the use of the `update()` function in each prototype. This runs many times per second to check for events such as collisions with enemies or platforms.

Prototype Pattern

The prototype pattern is used when creating enemies.

Why Final Game Deviates From Plan

Basic concept

The basic concept remained the same except that there is no boss level at the end. This was solely due to running out of time, not due to a design decision.

Characters

Non-Playable

As in the original plan, there are still 3 different types of enemies, although they do not behave how the plan explained.

The plan detailed the following:

Enemy 1

Moves quickly towards the player and a collision depletes the player's health.

Enemy 2

Moves slowly but shoots at player. Shots that hit the player deplete health.

Enemy 3

Rarer enemy. Moves quickly and shoots at player. Warning sound played when this enemy is going to appear.

What was actually implemented was the following:

Enemy 1 - Rabbit

Bounces up and down. Collision damages player. If player hits rabbit on either side, this can cause the rabbit to go bouncing around crazily. Although this was not originally intended, it was left in as it makes the enemy a bit more difficult to kill.

Enemy 2 - Bee

Hovers in the air and shoots projectiles at the player.

Enemy 3 - Spider

Moves back and forth on platforms. Collision damages player.

Items

Items remained the same except water was removed. This was initially implemented then removed to make the game more fun for the player. Having limited projectiles meant the player could not kill bee enemies as they can only be killed by a player projectile).

Controls

The controls are the biggest deviation from the original plan as mobile controls are not

implemented, only PC/MAC.

Scoring System

The player gains points by collecting turds and killing enemies. Although the game is timed, there is no implementation on the score if the player completes the level faster.

Levels

There are three levels rather than the planned five. This, again, was due to time constraints and some issues with spritesheets.

There are three different themed levels:

1. Grass level
2. Mushroom level
3. Candy level

The reason for the differing levels is to make the graphics more aesthetically interesting for the player.

Saving and Loading

There is no saving and loading. This was another time issue.

Facebook Integration

Facebook integration was a hoped-for feature and did not get implemented. This was not a design decision, merely a ran-out-of-time decision.

Options Menu

There is not an options menu, instead there are three buttons on the bottom left, as follows:

- Mute/unmute sound
- Pause
- Quit

Testing Strategy

Testing was done regularly, i.e. after every little change, the game was run again and the level played through while triggering events such as killing enemies and collecting items.

General playthrough testing was undertaken regularly by both myself and another and feedback was taken on board and any bugs noted for fixing later on.

In addition, the game was put on an external server website to ensure there were no issues with it running there.