**Space Invaders – Design Documentation**

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**Overview**

Each of the following sections describe a collection of code, organized together to implement a specific part of the game functionality. We will hereafter refer to these as “features”. We will split the code up into three points: Model – these are our “objects” like sprites, letters, etc. View – This is the image render and how it interactions with the screen. Controller – The backend of our program that will keep track of counters, score, and update the View accordingly

**Image Render**

This feature will print sprites, scores, lives, player, etc. to the screen. This will be our View class for our Model-View-Controller approach.

**What It Does**

This prints stuff like sprites to the screen

**External Requirements**

Sprites and other arrays of images

**Alien Control**

This feature controls the movement of the alien block, as well as the flying saucer. This will be a Controller for our Image Render View.

**What It Does**

Functions will move the aliens around as well as the flying saucer

**External Requirements**

Need a way to print to screen using Image Render, retrieve data to update player’s score, and retrieve data to see what state the game is in (Game over, gameplay, etc.)

**Player**

The player is the little tank on the bottom. This will be one of our Models and have functionality to move, this will be our Controller for the player. The Controller will interact with the Image Render View to draw to the screen as the player is moving, dying, or shooting.

**What It Does**

Player is mostly a model but it will move around using the Image Render and fire bullets

**External Requirements**

None

**Bunkers**

The bunkers will be another one of our Models. The bunker is one sprite when it’s fully intact but will split into different sprites as it’s eroding. The Controller will be in charge of which bunker parts to render when it’s shot.

**Bullets**

The bullets will be yet another one of our Models. The only thing the Controller would do with the bullets is track it/redraw it and detect if it hit (either alien bullets on the player or player bullets on the alien)

**What It Does**

Just simple bullets that will be shot by the player and aliens.

**External Requirements**

Which alien/player the bullets are coming from.

**Stats**

The stats is collection of variables that represent that scoreboard. These scores will be stored in a file, read, sorted, and everything in between.

**What It Does**

Just keeps a collection of variables for stats.

**External Requirements**

None

**Globals**

Globals will keep track of the variables that is used within different files.

**What It Does**

Globals allows every file to both get and set the information mentioned above.

**External Requirements**

None

**Gameplay**

This is our main function that will tie everything together

**External API**

None, top-level

**External Requirements**

This file will contain all of our inits and tick function to keep the game going

**Assignments**

Jeff: Image Render, Gameplay, Globals, Stats, Bunkers

Drew: Image Render, Alien Control, Bullets, Globals, Player