

Blockformer Game Proposal

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1. Describe the game you are making. Detail what you will need to learn in order to accomplish this.

Blockformer is a simple platformer-style game in which a player controls a block using WASD / arrows keys to navigate a map. The player must reach the end of the map while avoiding obstacles like turrets or land enemies. I will also implement many elements of traditional platformers such as lava and falling + moving platforms.

What I have to learn:

- Canvas drawing + updating
- Game physics for platformers (friction/acceleration/velocity)
 - “Feels” better than static movement speed
- Displaying HTML elements on top of canvas
- Using a tilemap to create levels
 - Much easier than manually defining pixel coordinates

2. Explain how you plan to incorporate each of the topics taught in the course?

Arrays:

- Storing objects (e.g. wallArray)
- 2D array for representing the level (tilemap)

Variable Types:

- Strings
 - Tilemap is made up of a list of strings (e.g. ‘#’ = wall)
- Booleans
 - Used to determine when something should be drawn on the canvas
 - E.g. bool isRunning - determines if canvas should update (false when paused)

For loops:

- Iterate through an arrays of objects to update them
- Mass creating particle effects (e.g. create 30 particles)

Functions:

- Put self-contained code that needs to be called repeatedly into a function
 - E.g. drawMap() - map needs to be drawn every frame

HTML/CSS:

- Game UI
 - <div>, <table>, , <p> used for creating UI
 - CSS to format UI (color, alignment, size, animations...etc.)

3. Lay out the steps you will take to create your game and estimate how much time you will need for each step.

Steps	Estimated Time Needed
Learning how to draw and update on the canvas <ul style="list-style-type: none">Follow the tutorials found on ManageBac (create Atari Breakout for practice)	1 hours
Learning how to create a tilemap to render maps <ul style="list-style-type: none">Iterate through 2D array to “draw” the map	1.5 hours
Create player class: <ul style="list-style-type: none">Handle input (WASD + arrow keys)Player spriteApply simple physics to make movement smoother	1.5 hours
Create a collision handler: <ul style="list-style-type: none">Player interaction with the platforms in the tilemap	2 hours
Create turret object <ul style="list-style-type: none">Finds angle from turret to player, rotates barrel to matchShoots a bullet on a timer towards the playerCollision with player	1.5 hours
Game Aesthetics: <ul style="list-style-type: none">Lava particle effectsColorful lavaPlayer die particle effect	1 hour
Creating Game UI <ul style="list-style-type: none">Use HTML + CSS	1 hours
Create 10 maps <ul style="list-style-type: none">Maps should progress in difficulty	2.5 hours