eSports - Programming (Formative) Name: ______________________

September 13, 2022
Mr. Frey

Goal: to demonstrate introductory programming skills and basic game design

Create a game in TinkerCAD for the MicroBit. The game needs to have

- 2 or more characters displayed with independent motion upon each clock tick
- Controls to shift direction of the character in at least 2 directions
- Collision checks to keep the characters in play
- Collision checks for reward/penalty (win/lose)
- Appropriate response to each collision (Stop, bounce, relocate, etc)

Tuesday:

- decide on the object of the game
- create variables to hold the coordinates of each character
- create variables to hold the vector for each character
- setup the starting positions and vectors for each character
- setup the clock to move each character by their vectors

Wednesday:

- add button controls that change the vectors of the avatar
- add collision checks to make sure players stay within the boundary

Thursday:

- add collision checks for each penalty/reward.

Friday:

- Write a brief explanation of your game (title, goal, control)
- send a cropped screen-snap of your program code
- send a cropped screen-snap of your MicroBit

Marking:

	Level 4	**Level 3**	**Level 2**	**Level 1**
Input Control	Controls vectors for up, down,left, right, and stop	3 controls adjust at least 2 vectors	2 controls for at least 2 vectors	Single vector control
Output Motion	Moves only on clock tick Moves according to vectors set in the input Correct plotting of several objects in a variety of motion	Moves only on clock tick Moves according to vectors set in the input Correct Plotting of 2 characters in motion.	Movement does not rely on clock tick Moves by appropriate vectors Minor error in plotting 2 characters in motion	Movement does not rely on clock tick Correctly plots movement of a single character. Previous position of avatar is not erased.
Collision Detection	Complex collision checks (interior walls)	Collision with • Boundaries • Reward • Penalty	Collision with • Boundary • object	Boundary check
Collision Response	Variety of collision responses (bounce, stop, relocate etc)	Avatar responds appropriately to • boundary • reward • penalty	Avatar stays in bounds Responds to another object	Avatar either strays out of bounds or does not respond to another object

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