Neuro invaders: Brain-Computer Interface (BCI) Game using mental attention

Stage 1: The Player:
1. Player starts game and gets feedback from game
2. If player observes attention score is low and is having difficulty destroying enemies, player tries to focus to raise attention score
3. If player feels overwhelmed by enemies, the player will try and focus to raise attention score
4. If player hears a sound, player presses the up arrow keys to repair the wall

Stage 2: EEG Device
1. BCI device worn by user
2. 4 channels to read EEG from user
3. Electrodes on the forehead at positions TP9, FP1, FP2 and TP10
4. The device will read in player’s EEG and pass information on to the BCI engine

Stage 4: BCI Game:
1. 7 levels in total, enemies move faster as level rises
2. If the game detects that the player’s attention score is high, the game will
   1. Reduce the frequency of enemy spawning
   2. If the game detects the attention score is low, the game will increase frequency of enemy spawning
   3. If the player has selected level 6 or 7, the game will play a sound
   4. Game is controlled by pressing the right and left arrow keys to inflict damage on the enemies in that direction

Stage 3: BCI Engine:
1. Developed in Matlab
2. Takes in raw EEG Signals from Muse
3. Processes EEG signals
4. BCI scores reflect 3 statuses of the player: attention, relaxation and anxiety
5. BCI Scores vary from 0 to 1