Names: Ayan Basu & Adrian Jeyakumar

EID: ab73287 & EID:

Dr. Yerraballi - Unique #17070

4 May 2021

***Lab 10 Project Proposal***

***Space Invaders***

Ayan Basu & Adrian Jeyakumar

Our game will have an overlying mission of the user playing as a spaceship to destroy as many of the approaching invaders as possible. The slide potentiometer will be used to shift the location of the spaceship horizontally and a button will be used to launch the lasers that will take down each invader. As the game proceeds, a score will be kept, incrementing each time an invader has been shot by a laser. The game ends once all of the invaders have been taken down indicating a successful mission, or once an invader has reached the bottom of the screen taking over the user’s base indicating a loss. Another button will be incorporated to allow the user to pause and restart the game at their leisure.

**FEATURES**:

* Two buttons: one to shoot at enemy and one to pause/play the game
* Slide pot: to move ship left and right
* Multiple enemy ships will be sprites
* Player’s ship is also a sprite
* Moving sprites of bullets
* Sounds: shooting sound
* Score will be kept based on enemy ships destroyed
* Languages: English and Spanish

**REQUIREMENTS MET**:

* *Buttons*: Shoot & Pause/Play
* *Slide Pot*: Move spaceship (Left & Right)
* *Sprites*: Player Ship, Enemy Ships, Bullets
* Sound (Shooting sound) created when player shoots (presses shoot button)
* *Interrupt Service Routines*
  + *Edge Triggered Interrupt*: Shoot
  + *Periodic SysTick Interrupt*: Move the ship Left & Right
  + *Periodic Interrupt*: Pause / Play Game (Interrupt set at **highest priority**)
* Score is displayed at the end of the game
* Language options (English and Spanish) are displayed at beginning of game (enter game screen)