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## *Lab 10 Project Proposal*

# *Space Invaders*

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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)