Group Name: Bulletstorm 09/10/23

# Internet of Things Project

## Group Members


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## Project Description

The target of the project is to develop a game of the top-down-shooter genre that is controlled using a physical weapon. It aims to resemble an arcade-style shooter.

The basic game-loop of the game results in the player aiming at the screen using a real weapon. The player will have to fend off an unstoppable onslaught of enemies as well as dodging all their attacks. There will be a wide range of possible virtual weapons as well as abilities or powerups like healing and damage increases to help out the player survive.

The physical weapon will have a gyroscope and compass attached to detect any movement of the weapon as well as several buttons to control in-game actions such as firing. In addition to those features the weapon will have included a rumble motor as well as leds to grant more physical feedback to the user.

## Hardware Requirements

- 2 buttons
- 1 laserpointer
- 2 rumble motors
- 1 accumulator
- 2 processors
- 2 gateways
- storage
- X LEDs
- X connectors

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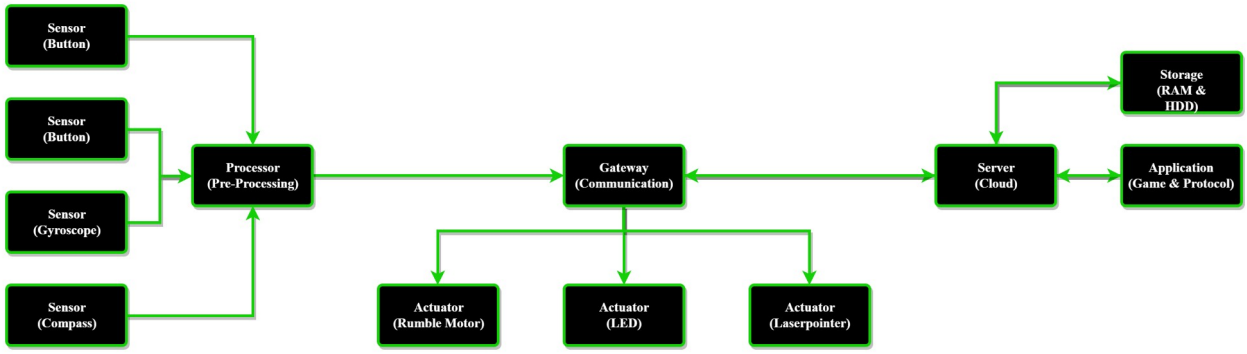
## Software Requirements

- Application
- Python3 (PyGame)
- User Datagram Protocol
- Modeling Software
- Image Manipulation Software

## System Architecture




## Project Timetable

- **2nd of October – 1st of December: Game Development + Weapon Design**
  - Game Development
    - engine
    - textures
    - level design
  - Weapon Design
    - 3D Model
    - IoT component chain
    - preprocessing software
- **1st of December – XMAS:**
  - Server Setup
    - IoT component chain
    - UDP connection test
- **1st of January – End of Project:**
  - test runs
  - documentation
  - preparation presentation