# **CEN 4020: Software Engineering I, Fall 2019**

**Florida State University**

**- Group Project Proposal Template –**

**1.** **Project title**

CyberRush

**2.** **Brief overview of what you are proposing**

A retro futuristic, cyberpunk platformer. It will feature crisp movement mechanics, enemies, abilities, and unique bosses as well as game modes. We’re looking to make a unique modern take on the old retro style games like Megaman, blending the mechanics of a 2D platformer with a shooter.

**3.** **Motivation**

We enjoy playing video games and want to work on a game that is enjoyable to play and develop, while also improving our software engineering skills. We’d like this opportunity to work on a larger scale, relatively long-term project in which we learn to engineer software and work with a team of our peers.

**4.** **Features to be implemented and types of users**

**Character/Player**

- Basic movement: left, right, jump

- More advanced movement options such as dashing, double jumps, etc.

- Visible HP counter for player

- Weapons/power ups/gained move

- Basic character customization (skins/palettes)

- Single character/player role

**User interface**

- Handheld controller and keyboard compatible

- Music in the background

- Title Screen, Death Screen, Settings/Options, Game Screen

- Settings/Options, including remappable controls

- Keyboard and possibly handheld compatible

- Leaderboard for endless mode

**Gameplay**

- Enemy mobs

- Changing maps/background

- Game theme

- Boss battles

- Game modes: endless mode, story, boss rush

- Emphasis on the mechanics of gameplay, especially movement

**5.** **Risk / Challenges**

- Creating AI for enemies

- Creating an engaging story and plot line

- Developing our own graphic or finding appropriate open source graphics

- Creating a soundtrack

- Creating interesting bosses with unique mechanics

**6.** **Existing related projects**

* Mega Man (https://en.wikipedia.org/wiki/Mega\_Man)
* We would have a more modern game and more of an emphasis on movement mechanics
* Mighty No. 9 (<https://en.wikipedia.org/wiki/Mighty_No._9>)
* Our project will have a simpler art style and will also platform on systems using python, with the pygame library installed

**7.** **Intended platform / programming language**

We plan to platform on any systems that can run and use controls with python, and has the pygame library installed (PC, RaspberryPi, etc.). We would implement gameplay, screens, and all other features besides scoring with python, and the pygame library. We plan to possibly use sql to hold a list of high scores from previous players, and to also implement that on the scoreboard.

**8.** **Third-party libraries / APIs to be used**

* Pygame (https://www.pygame.org)
* Tiled Map Editor (https://www.mapeditor.org/)

# **9.** **Team members, expertise, project responsibilities, and team organization**

Daniel Brown, djb16b – C++, Python, Java

Jared Usher, jtu16 – C++, Java, SQL, a little Python

Garett Anderson, ga17 - C++, Java, Python, SQL

Cameron Heffelfinger, cjh17h – C++, Java, SQL, Python

We will mainly communicate through a mixture of Discord, texting, and Github. Meeting in person will be once a week, and we will be delegating and separating tasks/work as a group based on interest and skill.