# CEN 4020: Software Engineering I, Spring 2019

**Florida State University**

**- Team Project Proposal –**

**02/22/2019**

1. **Project title**

A Knight’s Tale

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

We want to create a web-based open world 2D RPG game that uses frontend and backend technologies. Our game would take place in a fantasy kingdom and utilize weapon-based “hack and slash” gameplay. People who play the game would have their own profile with their saved data and customized information that is stored in an online database. The game will have a complex story with multiple branching paths based on dialogue options and character actions that result in different potential endings. Overall, we are hoping to create a fun game of grand scale where every play through of the game can provide a new experience based on players actions and choices.

1. **Motivation**

We want to entertain people with a fun experience playing our game that keeps people coming back to play more. Our aim is to create something memorable that we can enjoy and be proud of when showing other people. We also want to know what it’s like creating our own game and seeing if we can make something better than the games we loved playing growing up.

1. **Features to be implemented (aka functional requirements)**

In our game, we will be implementing story-based open world gameplay. The driving focus behind what the player does will be quests and other similar event-driven gameplay elements. The player will have the option to roam freely as they please but we will ensure there is a strong guiding force behind the gameplay. The player will also receive optional objectives and be given a choice in many situations to influence the direction of the story. This will result in many different branching story paths that we will develop. The player will have multiple different weapon classes to choose from to suit their own playstyle and the weapon mechanics will be complex and varied. We will implement damage calculations based on a variety of weapon and armor effects, encouraging strategic thinking and experimentation. Naturally, we will need to include sprite graphics for the all of the characters, enemies, and environments, and ensure that all of the graphics we use mesh and fit our fantasy theme. To expand upon the story of our game and give the characters personality we will be incorporating dialogue in the form of dialogue boxes with character interactions. In order to give players the ability to save their story progression and play data, we will be incorporating user profiles that store all game progress and other user information. This will be achieved via a backend database and login system that authenticates users. Lastly, the enemies that the player will be facing will need to be programmed with simple AI that have basic movement patterns and damage mechanics that range from easy to very difficult to play against.

1. **Risk / Challenges**

* Creating large and complex maps for open world gameplay
* Creating an intricate weapon class
* Developing a sophisticated and cohesive story that works for every branching path
* Finding appropriate open source graphics that we have permission to use or developing our own graphics
* Creating good dialogue
* Storing information for each user (save data)
* Developing working enemy AI

1. **Existing related projects**

* Legend of Zelda (<https://en.m.wikipedia.org/wiki/The_Legend_of_Zelda_(video_game)>)
  + we would have a more unique story and complicated weapon system
* Terraria (<https://terraria.org>)
  + we would have a story-driven game instead of having the player be free to do whatever they want
* Metroid (<https://en.m.wikipedia.org/wiki/Metroid_(video_game)>)
  + we would have a different setting and atmosphere surrounding our gameplay

1. **Intended platform / programming language**

We intend to design a web application that will run in a web browser. We would utilize HTML and CSS for the markup and styling of our website. We would also use JavaScript and Python for the gameplay and implementing backend features such as connecting to the database of player information.

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

We would utilize Firebase to handle the database of user information and authenticating users. We could possibly use Node.js for backend development and implementing some game functionality. We would also use the Pygame library to develop our gameplay.

# Team members, expertise, project responsibilities, and team organization

* Matthew Wix - mtw16
  + C++, C, Java, HTML, CSS, JavaScript
  + Responsibilities: User authentication and website formatting (front-end and backend)
* Riley Garrison – rag16c
  + C++, C, Java, HTML, MySQL
  + Responsibilities: Player mechanics and story
* Michael Tesfaye – mst14
  + C++, HTML, CSS, JavaScript, Node.js, Python
  + Responsibilities: Weapon mechanics, story, dialogue
* Ryan Kenney – rgk16b
  + C++, C, Java, Python
  + Responsibilities: Graphics and enemy AI

Our team will be organized under a democratic system where we all vote on ideas and how to implement certain concepts. We will communicate on a constant basis through texting, Discord, and GitHub to make sure we’re all on the same page. We will meet at least once a week or more depending on any development issues that arise.