

1. **Project title**

Retro Arcade

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

Our idea encompasses creating an arcade of retro-style games. The user will have between 6 to 8 games to choose from and will be able to track their high scores depending on the game. We plan on having a GUI that resembles an old arcade machine where the player can choose which game they wish to play. Along with high scores for individual players, we will also track high scores between different players. The games included will be variations of the games such as Pong, Flappy-Bird, and Snake.

1. **Motivation**

When working on a project for an entire semester, it is important for us to choose something that will not only challenge us but will interest us as well. We wanted to do something that we wouldn’t get bored of over the next several months and that will expand our skills as developers. We hope that by choosing something that peaks our interests, we can stay on track and motivated to create something that we are excited to demonstrate to our peers.

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

For our project, we will have different user profiles to keep track of the high scores and track games played. The user profiles will have the same access to each feature. For our games, it will not be necessary to have a profile with different privileges. There will be a feature to track favorites and most recently played.

1. Features:
   1. Create user account (only regular user accounts available)
   2. Logging in with a username and password
   3. User account stores high scores and games played
   4. Most recent games will be displayed first
   5. High scores of all games will be displayed in high scores tab
   6. Overall score for the player will be displayed in a tab next to their username
   7. 6-8 games for the user to choose between.
   8. Database integration to store user information
2. **Risk / Challenges**

* Working remotely
* Group member’s different programming experiences
* COVID-19

1. **Existing related projects**
2. Existing Related Projects
   1. [Battle Bros](https://raw.githubusercontent.com/njbittner/battle-bros-pyarcade/master/battlebros.gif) : Mortal Kombat style fighting game
   2. [Wormy](https://inventwithpython.com/pygame/chapter6.html) : “Snake” like game
   3. [Tetris](https://inventwithpython.com/tetromino.py) : no explanation needed

…. et al. There are dozens of examples of projects recreating or tweaking existing arcade games.

**Most existing projects are individual games, not a composite Arcade machine simulator as**

**we are proposing; they likely exist but could not be found to include in the previous list.**

1. Added Functionality & Differences from existing projects
   1. High Scores implementation (Python/SQLite/MySQL Integration).
      1. User’s high score for game(s).
      2. User’s rank compared to other players for individual game.
      3. Overall score for a player (sum of rankings in individual games, adjusted appropriately from any differences in scoring methodology in a given game.
   2. Separate login displays/games for different users (examples)
      1. Show favorite(s) with precedence to other games in the GUI.
      2. Show the most recently played game with precedence to other games in the GUI.
   3. Potential inclusion of cheat codes.
2. **Intended platform / programming language**

* Python3
* MySQL (likely using MariaDB as DBMS).

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

* Pyqt designer to create the GUI for our games, pygames to develop the actual games, SQLite (DB-API using version ‘sqlite3'),
* CS Department’s MariaDB will be used for database management.

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

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| --- | --- | --- | --- |
| **Name** | **FSUID** | **Experience** | **Roles** |
| Andrew Lindsay | abl14b | Proficient: HTML, CSS, PHP, Java, JavaScript, C++, SQL/mySQL  Comfortable: Python, C, yacc, MIPS, et al. | In charge of creating and managing the database as well as the requisite source code to facilitate database integration. |
| Michael Tafuri | mat12j | Comfortable with C++, learning Python as we go. | Creating multiple games in python (at least 2). |
| Seth Polen | scp17d | Comfortable with C++, python. Worked very little with HTML and CSS | Creating the GUI and creating one game in python. |
| Mackenzie Paul | mcp16t | Comfortable with C++, python. I’ve worked with Java, NodeJS, JavaScript, postgreSQL, but am not proficient. | Creating multiple games in python (at least 2). |
| Joseph Bellissimo | jsb18e | Comfortable with C++, python. Worked with Java. Worked a little with HTML, CSS and Swift. | Creating multiple games in python (at least 2). |

Team Organization**:** We will decide based on interests/skills what portions of the project we will complete. We will work in pairs, if needed.

Meeting: We will meet on a weekly basis with the option to meet twice in a week with certain circumstances. We will use Discord for voice chat and Git for project management. We do not plan to meet in person.