**Name**: Warren Ferrell

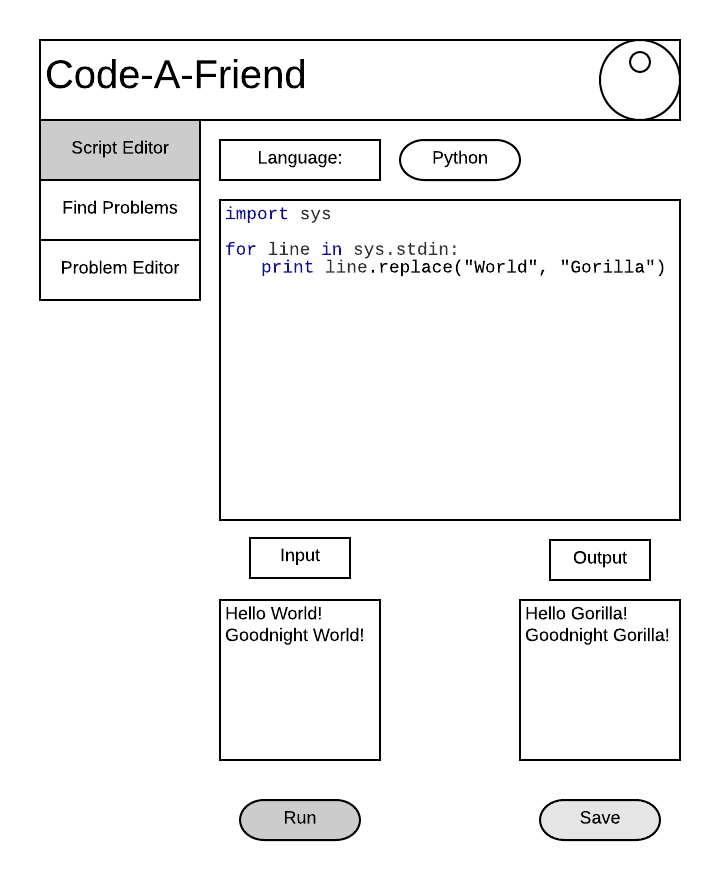
**Title**: Code-A-Friend

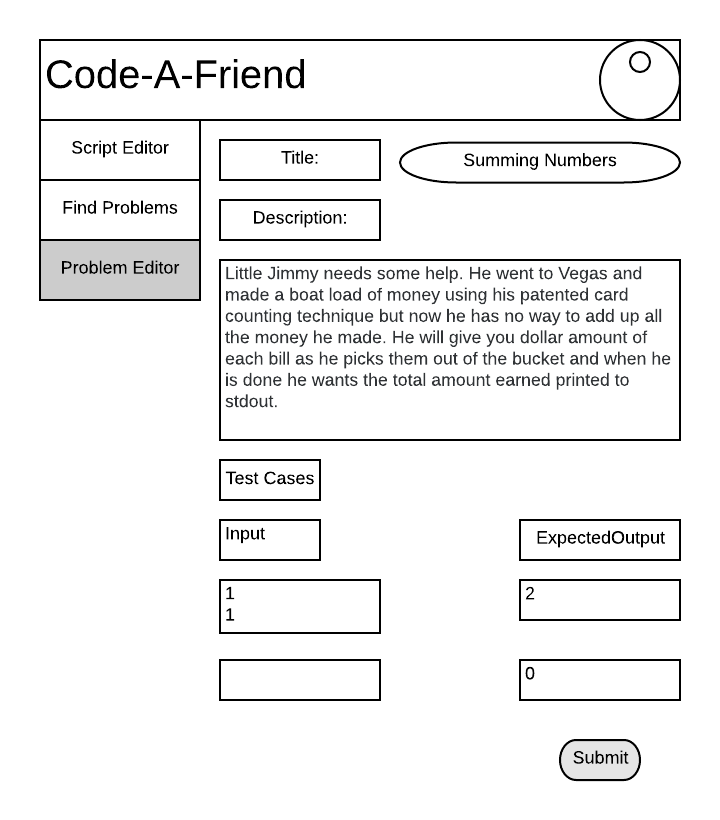
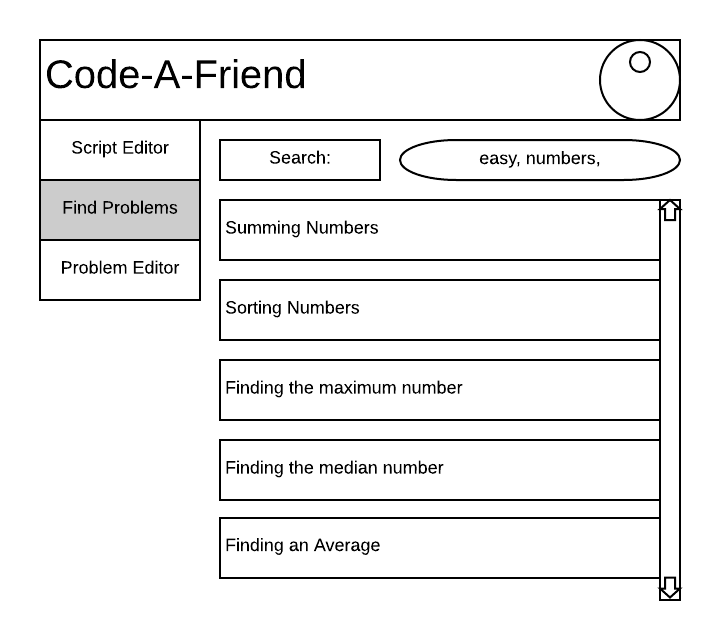
**Project Summary**: A website for submitting and voting on code samples that demonstrate implementations of various common algorithms. Will only support python at first.

**Project Requirements**:

|  |  |  |
| --- | --- | --- |
| **Requirement Id** | **Requirement Name** | **Description** |
| UR-01 | Script Editing | As a user, I want to be able to type up a python script that I want run. |
| UR-02 | Script Saving | As a user, I want to be able to save, delete or retrieve a script that I have written. |
| UR-03 | Script Execution | As a user, I want to be able to have a script that I am working on be run for me. |
| UR-04 | Script Analysis | As a user, I want to be able to see how long my script ran for and how much memory it consumed during execution. |
| UR-05 | Problem Editing | As a user, I want to be able to create a problem with a text description. |
| UR-06 | Problem Saving | As a user, I want to be able to save a problem that I have written and retrieve problems I have saved. |
| UR-07 | Problem Testing | As a user, I want to be to add a set of tests that determine if a script is a solution to a problem. |
| UR-08 | Solution Submission | As a user, I want to be able to submit my script as being a solution to a problem. |
| UR-09 | Problem Solutions | As a user, I want to be able to see all scripts that solve a problem, after I have submitted a correct solution. |
| UR-10 | Solution Voting | As a user, I want to be able to vote on a solution as being a good solution to a problem. |
| UR-11 | Problem Tagging | As a user, I want to be able to tag problems so other people can search for them. |
| UR-12 | Problem Searching | As a user, I want to be able to search through problems by tags to find one that I want to solve. |
|  |  |  |
| AR-01 | Script restrictions | As an admin, I want to be able to limit the amount of memory and cpu time a script can be allocated. |
| AR-02 | Problem deletion | As an admin, I want to be able to delete problems that I believe contain inappropriate content. |

**UI Mockups**:





**Class Diagram**:

1. Users can sign up via an OAuth2 provider

2. Users can login via an OAuth2 provider

3. Users can type code into a box to make a script

4. Users can submit scripts

5. Users can receive the output from a submitted script

6. Users can see how long a script ran for

7. Users can see how much memory a script used

8. Users can save scripts they have written

9. Users can view scripts they have saved

10. Users can post a problem to be solved

11. Users can add tests of expected output from specified inputs for a problem

12. Users can configure the max runtime for a single script execution on a problem

13. Users can configure the max memory for a single script execution on a problem

14. Users can propose a script as solving a problem

15. Scripts will be accepted as a solution if it passes all provided tests for a problem

16. Users can vote on a script as being a good solution to the problem

17. Users can see all scripts that correctly solve a problem

18. Users can post an algorithm

19. Users can tag a script as implementing an algorithm

20. Users can vote on a script as being a good implementation of an algorithm

21. Admins can login

22. Admin can view all users

23. Admins can delete problems

24. Admins can delete algorithms

Stretch Functionality:

1. Support more languages than just python

2. User can submit illustrations that show how an algorithm works

3. Admins can ban hammer a user for submitting inappropriate content

4. Coding box has syntax highlighting

5. User can collaborate on a script with another user