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Dice Game

Computer Science – City Of Leicester

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Analysis

Try and create 3 or more key success criteria for your program.

**Success Criteria:**

1. A working login and register for both player 1 and player 2
2. Player 2 can not use the same account as player 1
3. Leaderboard system to sort and output the top 5 scores

Design

* *You may like to create a flow chart which will show broadly how your program will work. If so include your flow chart in this section.*
* *You must create pseudocode for a part of your program (minimum of 15 lines)*

**Flow Chart**

* Login

A picture containing text, white

Description automatically generated

* Register

Diagram

Description automatically generated

* Main Menu
* Game
* Score

**Pseudocode**

* Login
* Register
* Main Menu
* Game
* Score

Test design

* *Think of tests that you can carry out to see if your system works*
* *Remember to try and use normal, boundary and erroneous tests.*
* *If you wish to, you may add more tests to the table.*

**My tests:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test | What am I testing? | What data will I use? | Normal/Boundary/Erroneous? | Expected Result |
| 1 | Log In Details (Normal Testing) | Username = Ilhaam | This is a normal test that I will carry out whilst I make my code for the log in section of the solution | I expect that when I enter the username it will be expected. |
| 2 | Loig in Details (Erroneous Testing) | Password = 123 | This is a erroneous test that I will carry out whilst I make my code for the log in section of the solution | I expect there to be an error as the password is wrong. (Syntax error ) The correct password that should be expected is 123 |
| 3 | Amount of rolls  (Normal Test) | Print(roll) | This is a normal test to ensure that the amount of rolls does not exceed 5 | The amount of rolls does not exceed 5 as I have added a limit in the while loop. If it does then I know that it is a logic error. |
| 4 | Player 2 login details  (Erroneous Testing) | P1username = Ilhaam  If P2 username == P1username then don’t allow. | This is an errorneous test to try and not allow the same login details to be entered. P2 username should not match P1 username. | If the second player inputs the same information as the first player then it won’t grant access although if it isn’t then allow access. |
| 5 | Leader Board  (Normal testing) | Sort | This is a normal testing to predict the movement of the data being sorted. If the data is outputted in a different order to descending then it is incorrect. | The data to be sorted in a descending order and able to be outputted without any errors of wrong constants. |

Development

* *Copy and paste your code into this section*
* *Remember to try and add comments to your code to make it more readable!*

**My program code:**

Testing

* *Show you have completed the tests you thought of*
* *Identify if you needed to make changes to your program*
* *Include the screenshots of the tests*

**My tests:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test | What am I testing? | Expected result | Pass/Fail | Do I need to change my program? If so, how? |
| 1 | P1username = alex  P1password = 123  P2username = bob  P2password = 123 | I expect the results to be the be exactly the same as I allow the program to read through all my lines – using a for loop – which should allow me to search for the name and a password even if it has the same password. | Pass | Other then a bit of refining such as placing a few delays inbetween the lines, there is not much I could possibly do to change. |
| 2 | Turns stopping at 5 (including 5) without breaking | I currently have a couple of problems with the turns system. I think that this could be a logical error that I have missed somewhere. | Fail | I found out that my operator was swapped the wrong way. This is a logical error so then my code ran but did not give me what I wanted. |
| 3 | Score system adding up for the amount of roles and if it is a even or odd number | The score to increase by 10 if even and minus by 5 if odd. Also it adds up the total of the dices rolled. | Fail | The score system is mixed in with he wrong while loops therefore is multiplying at many times. This can be fixed by altering the indentations. |
| 4 | Players switch turns | Once the first player has ended their goes it should switch to the next player. The players names should be used when possible. | Pass | Just a few delays inbetween the code to be less fast passed. I must use abstraction to remove all unwanted lines of code. |
| 5 | LeaderBoard system to add and sort the player scores and the corresponding names. It should also be able to be outputted. | A file will be written to and have the playernames next to the playerscores. A for loop can be used to show the top 5 results. | Fail | The code is sorting the playernames instead of the score therefore creating an incorrect order. This can be fixed by swapping the score and the names around. |

Evaluation

* Evaluate how successful your program was. You may find it useful to refer back to your tests
* You should reflect on any new skills you have developed

This section should be approximately 200-500 words.

**How successful was my program?**

My program is highly successful as the game did exactly as I intisipated. Along the way I found my self stubeling on many logic and syntax errors, but I shortly discorverd how to resolve them. I chose to do my game in sections. The login and register was section 1. I had to learn how to use the open fuction in order to fully understand the concepts of how python can read and write onto files. This wasn’t too hard. The second secition was the initial game. The game consists of having a player vs player and a player vs computer game mode. This was a simple selection that had to be made although depending on what the player chose dictaded the 2 diferent paths needed to travel. Therefore I had to create 4 different areas of the game. If the pvp gamemode was selected the game will prompt the user to login another player; the same cridentials as player 1 can not be used. The turns system counts to 5 and sawps the players accordingly. Each player only has 2 goes. Once the goes are over the total amount get compared additionally the player with the highest score wins. Lastly, section 3 consisted totally on the leaderboard system and it was the most complexed in my opinion. The same concept of the opening and reading commands as from the login and register although once the data was inputed into a text file I needed a way to sort them. I figured out an algorithem to use a merge sort in order to sort the data in a descending order. Once sorted the data can be ouputed using a for loop to display only the first 5 scores.

**What new skills have I developed?**

I have learnt how to use funcitions in order simplify my code and recall the sunroutines when I needed them. This allowed me to reduce the amount of repeated line of code which therefore reduced the length of my source code. I have also developed the understanding of using the open, read, write and close functions for external files. This later allowed me to do the login and register and the leaderboard system which were all highly necessary parts of the game. The game it self helped me rediscover the different ways of using a while loop to ocontrust the basics of the roll system. I have learnt how to use delays to hold time inbetween the areas to create a normal pased output for the shell. This creates a better userfriendly system which then leads to better gameplay. The computer vs player gamemode taught me how to use prints and delays to imitate the automatic computer system. The module of random was realitivly new for me therefore I had to self teach my self to research its capabilities and implement it into my code to allow the random system to work. This needed me to import the module and then use the functions inside the module to work in my code. The random module was used a lot and is one of the most important aspects to the game as it let me roll the dices for example.