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| --- | --- | --- | --- | --- | --- | --- |
| Function | # | Description | Sample Input Data | Expected Output | Actual Output | P/F |
| mainMenu | 1 | Manage Data | 1 | Return 1 | Return 1 | P |
|  | 2 | Play | 2 | Return 2 | Return 2 | P |
|  | 3 | Exit | 3 | Return 3 | Return 3 | P |
| main | 4 | Manage Data | menu == 1 | Calls manageData(cRecords, &nNumber); | Calls manageData(cRecords, &nNumber); | P |
|  | 5 | Invalid Input | menu == 0 | [1] Manage Data as an admin  [2] Play as a player  [3] Exit Program  Input your choice: 0  Input valid input: | [1] Manage Data as an admin  [2] Play as a player  [3] Exit Program  Input your choice: 0  Input valid input: | P |
|  | 6 | Exit | menu == 3 | Prints “Have a nice day!” then ends the program | Prints “Have a nice day!” then ends the program | P |
| manageData | 7 | If mData is called, a password is asked | N/A | Calls playerPassValid() | Calls playerPassValid() | P |
|  | 8 | If pPassValid() returns 1 | pPassValid() == 1 | Prints “[1] Add a record\n[2] Edit a record\n[3] Delete a record\n[4] Import data\n[5] Export data\n[6] Return to main menu\n\nInput direction of activity: " | Prints “[1] Add a record\n[2] Edit a record\n[3] Delete a record\n[4] Import data\n[5] Export data\n[6] Return to main menu\n\nInput direction of activity: " | P |
|  | 9 | If you input a given choice | 4 | Calls ImportRecords(cRecords, nNumber); | Calls ImportRecords(cRecords, nNumber); | P |
|  | 10 | If you input a number greater than the given choices | 0 | Prints “[1] Add a record\n[2] Edit a record\n[3] Delete a record\n[4] Import data\n[5] Export data\n[6] Return to main menu\n\nInput direction of activity: " | Prints “[1] Add a record\n[2] Edit a record\n[3] Delete a record\n[4] Import data\n[5] Export data\n[6] Return to main menu\n\nInput direction of activity: " | P |
|  | 11 | If you input less than the given choices | 7 | Prints “[1] Add a record\n[2] Edit a record\n[3] Delete a record\n[4] Import data\n[5] Export data\n[6] Return to main menu\n\nInput direction of activity: " | Prints “[1] Add a record\n[2] Edit a record\n[3] Delete a record\n[4] Import data\n[5] Export data\n[6] Return to main menu\n\nInput direction of activity: " | P |
| playerPassValid() | 12 | If you input the correct password | AdminPass | Returns 1 | Returns 1 | P |
|  | 13 | If you input the wrong password | ADMINPASS | INCORRECT PASSWORD  [1]Retry  [2]Return to main menu  Input Choice: | INCORRECT PASSWORD  [1]Retry  [2]Return to main menu  Input Choice: | P |
|  | 14 | If you decide to return to the main menu after typing the wrong password | 2 | Returns to main | Returns to main | P |
| numCount | 15 | If there are 2 records | cRecords[0]  cRecords[1]  are both filled | \*nNumber = 2 | \*nNumber = 2 | P |
|  | 16 | If there are 0 records | cRecords is empty | \*nNumber = 0 | \*nNumber = 0 | P |
|  | 17 | If there are 3 records | cRecords[0]  cRecords[1]  cRecords[2]  are all filled | \*nNumber = 3 | \*nNumber = 3 | P |
| assignTopicNumbers | 18 | Assuming a topic changes then returns again | cRecords[0].cTopic1 = “Entertainment”  cRecords[1].cTopic1 = “Literature”  cRecords[2].cTopic1 = “Entertainment” | cRecords[0].nNumber = 1  cRecords[1].nNumber = 1  cRecords[2].nNumber = 2 | cRecords[0].nNumber = 1  cRecords[1].nNumber = 1  cRecords[2].nNumber = 2 | P |
|  | 19 | Assuming the topic stays the same | cRecords[0].cTopic1 = “Entertainment”  cRecords[1].cTopic1 = “Enterainment”  cRecords[2].cTopic1 = “Entertainment” | cRecords[0].nNumber = 1  cRecords[1].nNumber = 2  cRecords[2].nNumber = 3 | cRecords[0].nNumber = 1  cRecords[1].nNumber = 2  cRecords[2].nNumber = 3 | P |
|  | 20 | Assuming the topic just changes | cRecords[0].cTopic1 = “Entertainment”  cRecords[1].cTopic1 = “Literature”  cRecords[2].cTopic1 = “Literature” | cRecords[0].nNumber = 1  cRecords[1].nNumber = 1  cRecords[2].nNumber = 2 | cRecords[0].nNumber = 1  cRecords[1].nNumber = 1  cRecords[2].nNumber = 2 | P |
| checkRecord | 21 | Returns if the question and answer inputted are the same as previous records with the inputs being different from previous records | Assuming  strInput = “What”  Answer = “Answer”  And that none of the values of cRecords.cQuestion1 and cRecords.cAnswer are the same as strInput and Answer | Returns 1 | Returns 1 | P |
|  | 22 | Inputs being the same as a previous record | Assuming  strInput = “What”  Answer = “Answer”  cRecords[0].cQuestion1 = “What”  cRecords[0].cAnswer = “Answer” | Returns 0 | Returns 0 | P |
|  | 23 | Inputs being different from previous records | Assuming everything inputted is different from eachother | Returns 1 | Returns 1 | P |
| inputRecord | 24 | Assuming the user inputs choices that don’t correspond to the answer | Assuming the passed on answer is “Me” and with  continuous inputs  Inputted topic: Self  Inputted Choice1 = “Him”  Inputted Choice2 = “Her”  Inputted Choice3 = “They” | Prints: Input a question: Who is failing?  Input the answer to the question: Me  Input the topic of the problem: Self  Enter the first choice: Him  Enter the second choice: Her  Enter the third choice: They  The answer is not in the choices. Please input valid choices.  Press any key to continue . . . | Prints: Input a question: Who is failing?  Input the answer to the question: Me  Input the topic of the problem: Self  Enter the first choice: Him  Enter the second choice: Her  Enter the third choice: They  The answer is not in the choices. Please input valid choices.  Press any key to continue . . . | P |
|  | 25 | Assuming the user inputs a choice that is the same as the answer | Assuming the passed on answer is “Me” and with  continuous inputs  Inputted topic: Self  Inputted Choice1 = “Me”  Inputted Choice2 = “Her”  Inputted Choice3 = “They” | Returns to mData | Returns to mData | P |
|  | 26 | Assuming the user inputs a choice that is the same as the answer | Assuming the passed on answer is “Me” and with  continuous inputs  Inputted topic: Self  Inputted Choice1 = “Her”  Inputted Choice2 = “Me”  Inputted Choice3 = “They” | Returns to manageData | Returns to manageData | P |
| editRecord | 27 | If there are no records | cRecords is empty | There are currently no records.  Press any key to continue . . . | There are currently no records.  Press any key to continue . . . | P |
|  | 28 | If cRecords has a record, and we are changing the topic | cRecords[0].cTopic1 = “Geography” (Assuming all other fields are filled)  Choose a topic to edit: 1  Choose a record to edit: 1  Enter field number: 1 (For topic)  Enter new value: Mathematics | cRecords[0].cTopic1 = “Mathematics” | cRecords[0].cTopic1 = “Mathematics” | P |
|  | 29 | If cRecords has a record, and we are changing the answer and the new input is not among the choices | cRecords[0].cChoice1 = “Me”  cRecords[0].cChoice2 = “You”  cRecords[0].cChoice3 = “Him”  cRecords[0].cAnswer = “Me”  Choose a topic to edit: 1  Choose a record to edit: 1  Enter field number: 3 (For first choice)  Enter new value: They | Current Record:  Topic: Self  Question: Who is failing?  Choice 1: Me  Choice 2: You  Choice 3: Him  Answer: Me  Which field do you want to modify?  [1] Topic  [2] Question  [3] Choice 1  [4] Choice 2  [5] Choice 3  [6] Answer  Enter field nNum: 3  Enter new value: They  None of the Choices correspond to the answer. Please input a valid answer  Press any key to continue . . . | Current Record:  Topic: Self  Question: Who is failing?  Choice 1: Me  Choice 2: You  Choice 3: Him  Answer: Me  Which field do you want to modify?  [1] Topic  [2] Question  [3] Choice 1  [4] Choice 2  [5] Choice 3  [6] Answer  Enter field nNum: 3  Enter new value: They  None of the Choices correspond to the answer. Please input a valid answer  Press any key to continue . . . | P |
| deleteRecord | 30 | If there are no records | cRecords is empty | There are currently no records.  Press any key to continue . . . | There are currently no records.  Press any key to continue . . . | P |
|  | 31 | If we want to delete cRecords[0] | cRecords[0].cTopic1 = “Geography” (Assuming all other fields are filled)  Choose a topic to delete: 1  Choose a record to edit: 1  Are you sure you want to delete this question? (1 = yes, 0 = no): 1 | All fields of cRecords[0] = ‘\0’ and will be replaced by the next records in the struct | All fields of cRecords[0] = ‘\0’ and will be replaced by the next records in the struct | P |
|  | 32 | If we want to delete a record that doesn’t exist | cRecords[0].cTopic1 = “Geography” (Assuming all other fields are filled)  Choose a topic to delete: 2 | Available Topics:  [1] Geography  Choose a topic to delete: 2  Invalid input. Please choose a valid topic number.  Choose a topic to delete: | Available Topics:  [1] Geography  Choose a topic to delete: 2  Invalid input. Please choose a valid topic number.  Choose a topic to delete: | P |
| importRecords | 33 | Importing a normal record | Data.txt contains:  Geography  1  The Sudd area of Southern Sudan is traversed by which of the following rivers?  Niger  Nile  The Congo  Nile | cRecords[0].cTopic1 = “Geography”  cRecords[0].cNumber = 1  cRecords[0].cQuestion1 = “The Sudd area of Southern Sudan is traversed by which of the following rivers?”  cRecords[0].cChoice1 = “Niger”  cRecords[0].cChoice2 = “Nile”  cRecords[0].cChoice3 = “The Congo”  cRecords[0].cAnswer = “Nile” | cRecords[0].cTopic1 = “Geography”  cRecords[0].cNumber = 1  cRecords[0].cQuestion1 = “The Sudd area of Southern Sudan is traversed by which of the following rivers?”  cRecords[0].cChoice1 = “Niger”  cRecords[0].cChoice2 = “Nile”  cRecords[0].cChoice3 = “The Congo”  cRecords[0].cAnswer = “Nile” | P |
|  | 34 | Importing a record that is missing the answer | Data.txt contains:  Geography  1  The Sudd area of Southern Sudan is traversed by which of the following rivers?  Niger  Nile  The Congo | cRecords[0] is empty as it skips it | cRecords[0] is empty as it skips it | P |
|  | 35 | Importing from an empty text file | Imported File: empty.txt | Input file: empty.txt  Nothing was imported...  Press any key to continue . . . | Input file: empty.txt  Nothing was imported...  Press any key to continue . . . | P |
| exportRecords | 36 | If there is an existing record | cRecords[0].cTopic1 = “Geography”  cRecords[0].cNumber = 1  cRecords[0].cQuestion1 = “The Sudd area of Southern Sudan is traversed by which of the following rivers?”  cRecords[0].cChoice1 = “Niger”  cRecords[0].cChoice2 = “Nile”  cRecords[0].cChoice3 = “The Congo”  cRecords[0].cAnswer = “Nile” | Export.txt now contains Geography  1  The Sudd area of Southern Sudan is traversed by which of the following rivers?  Niger  Nile  The Congo  Nile | Export.txt now contains Geography  1  The Sudd area of Southern Sudan is traversed by which of the following rivers?  Niger  Nile  The Congo  Nile | P |
|  | 37 | If there are no records | cRecords is empty | There are currently no records.  Press any key to continue . . . | There are currently no records.  Press any key to continue . . . | P |
|  | 38 | If there is an existing record | cRecords[0].cTopic1 = “Entertainment”  cRecords[0].cNumber = 1  cRecords[0].cQuestion1 = “Which character owns an invisible robot plane?”  cRecords[0].cChoice1 = “Wonderwoman”  cRecords[0].cChoice2 = “Superman”  cRecords[0].cChoice3 = “Thanos”  cRecords[0].cAnswer = “Wonderwoman” | Export.txt now contains  Entertainment  1  Which character owns an invisible robot plane?  Wonder woman  Superman  Thanos  Wonder woman | Export.txt now contains  Entertainment  1  Which character owns an invisible robot plane?  Wonder woman  Superman  Thanos  Wonder woman | P |
| playerCount | 39 | Counts the total number of players | cPlayers[0]  cPlayers[1]  are both filled | \*pNumber = 2 | \*pNumber = 2 | P |
| importScores | 40 | Imports scores from score.txt | Maverick  5  Ian  10  Donald  3  Shaira  2 | cPlayers[0].pName = “Ian”  cPlayers{0}.pScore = 10  cPlayers[1].pName = “Maverick”  cPlayers{1}.pScore = 5  cPlayers[2].pName = “Donald”  cPlayers{2}.pScore = 3  cPlayers[3].pName = “Shaira”  cPlayers{3}.pScore = 2 | cPlayers[0].pName = “Ian”  cPlayers{0}.pScore = 10  cPlayers[1].pName = “Maverick”  cPlayers{1}.pScore = 5  cPlayers[2].pName = “Donald”  cPlayers{2}.pScore = 3  cPlayers[3].pName = “Shaira”  cPlayers{3}.pScore = 2 | P |
| playerPlay | 41 | If input is a valid number | 1 | Calls playGame(cRecords, nNumber); | Calls playGame(cRecords, nNumber); |  |
|  | 42 | If input is an invalid number | 0 | [1] Play  [2] View Scores  [3] Exit  Input Direction of Activity: 0  Invalid input. Please input a valid number  Press any key to continue . . . | [1] Play  [2] View Scores  [3] Exit  Input Direction of Activity: 0  Invalid input. Please input a valid number  Press any key to continue . . . | P |
|  | 43 | If input is for exit | 3 | Calls exitGame(cPlayers, & pNumber); | Calls exitGame(cPlayers, & pNumber); |  |
| playGame | 44 | If there are no records | cRecords is empty | There are currently no records.  Press any key to continue . . . | There are currently no records.  Press any key to continue . . . | P |
|  | 45 | If there are records | Given the records: cRecords[0].cTopic1 = “Entertainment”  cRecords[0].cNumber = 1  cRecords[0].cQuestion1 = “Which character owns an invisible robot plane?”  cRecords[0].cChoice1 = “Wonderwoman”  cRecords[0].cChoice2 = “Superman”  cRecords[0].cChoice3 = “Thanos”  cRecords[0].cAnswer = “Wonderwoman”  Input Player Name: Edric  Enter Course of Action: 1(Start)  Choose a topic to answer a random question from: 1  Answer: Wonderwoman | Points:0  Topic: Entertainment  Answer the Question: Which character owns an invisible robot plane?  Answer: Wonder woman  Correct!  Press any key to continue . . . | Points:0  Topic: Entertainment  Answer the Question: Which character owns an invisible robot plane?  Answer: Wonder woman  Correct!  Press any key to continue . . . | P |
|  | 46 | If you change your mind after pressing play | Given the records: cRecords[0].cTopic1 = “Entertainment”  cRecords[0].cNumber = 1  cRecords[0].cQuestion1 = “Which character owns an invisible robot plane?”  cRecords[0].cChoice1 = “Wonderwoman”  cRecords[0].cChoice2 = “Superman”  cRecords[0].cChoice3 = “Thanos”  cRecords[0].cAnswer = “Wonderwoman”  Input Player Name: Edric  Enter Course of Action: 2 (End Game) | YOUR FINAL SCORE: 0  Press any key to continue . . . | YOUR FINAL SCORE: 0  Press any key to continue . . . | P |
| viewScores | 47 | To view the scores from the file | Contents of cPlayers:  cPlayers[0].pName = “Ian”  cPlayers{0}.pScore = 10  cPlayers[1].pName = “Maverick”  cPlayers{1}.pScore = 5  cPlayers[2].pName = “Donald”  cPlayers{2}.pScore = 3  cPlayers[3].pName = “Shaira”  cPlayers{3}.pScore = 2 | RANK: 1  Player Name: Ian  Score: 10  RANK: 2  Player Name: Maverick  Score: 5  RANK: 3  Player Name: Donald  Score: 3  RANK: 4  Player Name: Shaira  Score: 2  Press any key to continue . . . | RANK: 1  Player Name: Ian  Score: 10  RANK: 2  Player Name: Maverick  Score: 5  RANK: 3  Player Name: Donald  Score: 3  RANK: 4  Player Name: Shaira  Score: 2  Press any key to continue . . . | P |
|  | 48 | If there are no players | cPlayers are empty | There are no players to display.  Press any key to continue . . . | There are no players to display.  Press any key to continue . . . | P |
|  | 49 | If it is not in descending order | Contents of cPlayers:  cPlayers[1].pName = “Maverick”  cPlayers{1}.pScore = 5  cPlayers[0].pName = “Ian”  cPlayers{0}.pScore = 10  cPlayers[2].pName = “Donald”  cPlayers{2}.pScore = 3  cPlayers[3].pName = “Shaira”  cPlayers{3}.pScore = 2 | RANK: 1  Player Name: Ian  Score: 10  RANK: 2  Player Name: Maverick  Score: 5  RANK: 3  Player Name: Donald  Score: 3  RANK: 4  Player Name: Shaira  Score: 2  Press any key to continue . . . | RANK: 1  Player Name: Ian  Score: 10  RANK: 2  Player Name: Maverick  Score: 5  RANK: 3  Player Name: Donald  Score: 3  RANK: 4  Player Name: Shaira  Score: 2  Press any key to continue . . . | P |
| exitGame | 50 | Exporting all scores to score.txt | Contents of cPlayers:  cPlayers[0].pName = “Ian”  cPlayers{0}.pScore = 10  cPlayers[1].pName = “Maverick”  cPlayers{1}.pScore = 5  cPlayers[2].pName = “Donald”  cPlayers{2}.pScore = 3  cPlayers[3].pName = “Shaira”  cPlayers{3}.pScore = 2 | New contents of score.txt  Ian  10  Maverick  5  Donald  3  Shaira  2 | New contents of score.txt  Ian  10  Maverick  5  Donald  3  Shaira  2 | P |
|  | 51 | If it is not in descending order | Contents of cPlayers:  cPlayers[1].pName = “Maverick”  cPlayers{1}.pScore = 5  cPlayers[0].pName = “Ian”  cPlayers{0}.pScore = 10  cPlayers[2].pName = “Donald”  cPlayers{2}.pScore = 3  cPlayers[3].pName = “Shaira”  cPlayers{3}.pScore = 2 | New contents of score.txt  Ian  10  Maverick  5  Donald  3  Shaira  2 | New contents of score.txt  Ian  10  Maverick  5  Donald  3  Shaira  2 | P |
|  | 52 | If score.txt is empty and no new player was added | score.txt is empty  cPlayers is empty | score.txt will also be empty | score.txt is empty | P |