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 |