

Machine Project

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Link to Flowchart: <https://www.figma.com/file/IDduFwZf2qHmHJWoC0EQCV/MP-1-Flow?type=whiteboard&node-id=0-1&t=sPMaEXh4Zi0Dt8uq-0>

Disclaimer:

About 80% of the code was made under the initial assumption that arrays are not allowed. This resulted in many variable assigning to get categories grouped together, etc. which made the code very long and tedious in some places. I hope you can forgive that since it initially wasn't allowed. The code can be vastly improved with arrays and especially with objects.

I thought that that was the point of the MP which showed that you mastered the basics so it was limited like that which turned out to not have been the case. I hope I don't get punished for this misunderstanding. This was the harder route that I wish I didn't take. It was emphasized a lot in the beginning that using of arrays and non-discussed topics would lead to 0.

I hope there aren't deductions for the way I will attempt to explain the functions and tests such as setting certain functions as the topic functions which just means where the function where the flow being discussed is occurring. Although certain cases effects aren't necessarily "outputs" in the terminal, they will be talked about in Expected Outputs which will just mean Expected Effects.

The test cases mainly focuses on a 3-player game, smaller pieces from various other games will be shown to not restate the same outcomes with minor differences.

Topic function main()

Function: void PrintJeopardy()

Function Description: Prints Jeopardy logo

```
#####
#                                     *--+ #
#                                     *@+ #
# .##. +##### : *#####. #####- : *##### +#####+. :#####+ :##* .## *@+ #
# :@@:=@@@@@@* #@@@@@@@=@@@@@@@@@: *@@@@@. #@@@@@@@@@* -@@@@@@@@+@% :@ @ *@+ #
# :@@:=@@@@@@* #@@@@@@@@=@@@@@@@@@: %@@@@@- #@@@@@@@@@* -@@@@@@@@@* -@% :@ @ *@+ #
# :@@:=@@@@@@* #@@@@@@@@=@@@@@@@@@: @@@@@@+ #@@@@@@@@@* -@@@@@@@@@* -@% :@ @ *@+ #
# :@@:=@@@@@@* #@@@@@@@@=@@@@@@@@@: .@@@@@# #@@@@@@@@@* -@@@@@@@@@* -@% :@ @ *@+ #
# :@@:=@@+====: #@@@+@@=: @@@+* @@@ -@@=#@ @ @@@ @@@%=@@@* -@%#=@@* -@% :@ @ *@+ #
# :@@:=@ @ @ @ @ @ % @ @ = : @ @ : : @ @ + @ @ - @ @ @ # @ @ * - @ @ * = @ @ * - @ @ : @ @ * @ @ + #
# . : : : @ @ = @ @ - : : : : @ @ : @ @ - . @ @ : # @ * . - @ @ : @ @ % . : % @ * - @ @ * = @ @ * - @ @ : . = @ @ * @ @ + #
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# : % @ @ @ @ @ # . # @ @ @ @ @ * - % @ @ @ @ % : @ @ : * @ @ * : @ @ . # @ @ # . @ @ % - @ @ @ @ @ # . - @ @ @ @ @ % = * @ @ =
#
#####
```

Function: char StartMenu()

Function Description: Displays the starting menu and the possible menu option. Asks for a char input, returns the first digit of the input. Validates the input and asks for a reentry when the first digit of the input is not 1, 2, or 3.

Test Description	Inputs	Expected Outputs	Actual Output	P/F
An invalid input	4	Invalid Option. Please type 1, 2, or 3.	Invalid Option. Please type 1, 2, or 3.	Passed
An invalid input	z	Invalid Option. Please type 1, 2, or 3.	Invalid Option. Please type 1, 2, or 3.	Passed
A valid input, triggers the game	1	Moves to the next section that sets	Moves to the next section that sets	Passed

		details for upcoming game	details for upcoming game	
A valid input, triggers the instructions	2	Displays instructions list	Displays instructions list	Passed
A valid input, exits the program	3	Exits Program	Exits Program	Passed

```
#####
#
#                                     *-++ #
#                                     *@+ #
# .##. +##### :*#####~ :*##### +#####+. :##### :##* .## #*@+ #
# :@=:@=@=@=@=@=@* #@=@=@=@=@=@=:@=@=@=@=@=: @=@=@=@ @=@=@=@=@+@% :@ @ @+ #
# :@=:@=@=@=@=@=@* #@=@=@=@=@=@=:@=@=@=@=@=: %@=@=@=@ @=@=@=@=@* -@=@=@=@=@* -@% :@ @ @+ #
# :@=:@=@=@=@=@=@* #@=@=@=@=@=@=:@=@=@=@=@=: @=@=@=@=@+ @=@=@=@=@* -@=@=@=@=@* -@% :@ @ @+ #
# :@=:@=@=@=@=@=@* #@=@=@=@=@=@=:@=@=@=@=@=: .@=@=@=@@# @=@=@=@=@* -@=@=@=@=@* -@% :@ @ @+ #
# :@=:@=@+==== :@=@+@=@=:@=@+*@=@:-@=@=#@=@ @=@%=@=@* -@%=#@* -@% :@ @ @+ #
# :@=:@=@ @=@% @=@=:@=: :@=:+@# -@=@ #@# #@* -@* =@* -@% :@ @ @+ #
# .:: :@=:@=@-::: #@% @=@=:@=-@=:#@*.-@=@ :@%.:%@* -@* =@* -@=:.=@ @ @+ #
# =@ @. :@=:@=@=@=@=@* #@% @=@=:@=@=@=@=@. @=@=@=@=@= @=@=@=@% -@* =@*.%@=@=@=@ @ @+ #
# =@ @. :@=:@=@-::: #@% @=@=:@=: :. @=::%@* @%::*@# -@* =@* .::=@ @ @+ #
# =@ @. :@=:@=@ @=@% @=@=:@=: :@ @. *@% #@# :@% -@* =@* :@ @ :-- #
# =@ @+*@=:@=:@=@+*+*+ @=@+*@=:@=: =@ @ =@ @ @@# :@% -@%+*#@* .++++#@ @ . . . #
# :%@=@=@=@@# #@=@=@=@@* -%@=@=@@%::@=: *@* :@ @.#@# .@% -@=@=@=@@#.-@=@=@=@@% =@ @- #
#
#####
Welcome to Jeopardy!
[1] Start Game
[2] How to Play
[3] Exit Game
Select Option: _
```

```
Welcome to Jeopardy!
[1] Start Game
[2] How to Play
[3] Exit Game
Select Option: 4
Invalid Option. Please type 1, 2, or 3.
[1] Start Game
[2] How to Play
[3] Exit Game
Select Option: z
Invalid Option. Please type 1, 2, or 3.
[1] Start Game
[2] How to Play
[3] Exit Game
Select Option:
```

```
Welcome to Jeopardy! Here are the rules:
1. There may be up to 3 players and you will input your names.
   Then the play order will be randomly chosen.
2. The number of turns for the Jeopardy and Double rounds are
   set at the start of the game.
3. The game starts with the Jeopardy round where you may select
   from 4 Categories to answer. After that, a multiple choice question is given.
   Remember that you must answer with what are CAPITAL LETTERS.
4. Answering the question correctly gives the corresponding score.
   Meanwhile, answering the question wrong will deduct the value
5. When a question is answered incorrectly, the next player will
   be given a chance to answer the question, answer it right, then
   you may earn the corresponding points, but answer wrong and it
   will be deducted from you instead.
6. Answering correctly after a mistake sets you as the new current
   player. The mistake notation will occur until the last player.
   If nobody can answer the question, it is the initial player's
   turn once again.
7. Upon finishing the Jeopardy round, the Double Round begins.
   It can either be set to Normal or Zero mode.
8. Normal mode simply deducts the score meanwhile Zero mode
   sets the player's score to 0 when a mistake is made.
9. At the end of the Double Round is the Final Jeopardy.
   Here, each player can set a wager at the start of the game.
10. When the question is answered correctly, the player earns
   their wager otherwise, they lose it.
11. Game may be ended at any point and the final points will be displayed.

Press Any Key to Continue
```

Case 1 – Start Game Contents

Function: void ClearTerminal()

Function Description: uses system(“cls”); to clear the terminal

Test Description	Inputs	Expected Outputs	Actual Output	P/F
none	none	Cleared screen	Cleared screen	Passed

```
Command Prompt - jeopardy
Set Jeopardy Round Length (1 to 20):
```

Test Description	Inputs	Expected Outputs	Actual Output	P/F
A number below 0 or beyond 20	51	Number out of range, please enter a number between 1 and 20.	Number out of range, please enter a number between 1 and 20.	Passed
Not an integer	vvvv	Number out of range, please enter a number between 1 and 20.	Number out of range, please enter a number between 1 and 20.	Passed

```
Set Jeopardy Round Length (1 to 20): 51
Number out of range, please enter a number between 1 and 20.
Set Jeopardy Round Length (1 to 20):
```

```
Set Jeopardy Round Length (1 to 20): vvvv
Invalid input, only put numbers between 1 and 20.
Set Jeopardy Round Length (1 to 20):
```

Test Description	Inputs	Expected Outputs	Actual Output	P/F
A valid input	8	Moves on to double round length	Moves on to double round length	Passed
A valid input	8	Moves on to double round penalty setup	Moves on to double round length	Passed

```
Set Jeopardy Round Length (1 to 20): 8
Set Double Round Length (1 to 20): 8_
```

Test Description	Inputs	Expected Outputs	Actual Output	P/F
Choice for normal penalty mode in Double round	1	Chosen Penalty Mode: 1 Moves on to player count setup	Chosen Penalty Mode: 1 Moves on to player count setup	Passed

```
Normal has normal penalties while Zero Mode resets score to 0: 1
Chosen Penalty Mode: 1
```

Test Description	Inputs	Expected Outputs	Actual Output	P/F
Player count that isn't 1, 2, or 3	5	Invalid player count. Please type 1, 2, or 3.	Invalid player count. Please type 1, 2, or 3.	Passed

Player count that isn't 1, 2, or 3	assd	Invalid player count. Please type 1, 2, or 3.	Invalid player count. Please type 1, 2, or 3.	Passed
------------------------------------	------	--	--	--------

-End of main being the topic function-

Topic Function: PlayGame()

Function: void PlayGame(int nLength1, int* nLength2, int* nPlayersHold, int* nTurnTrackerHold,

char* strFirstHold, char* strSecondHold, char* strThirdHold, char* strActivePlayerHold,

int* nFirstScoreHold, int* nSecondScoreHold, int* nThirdScoreHold, int* nActiveScoreHold, int nDoubleMode)

Function Description: Contains the functions and flow to play the jeopardy round. Won't have outputs itself but contains the functions within that make progress

Function: int GetPlayers()

Function Description: Asks for the player count then validates it. Makes input from char to int

Test Description	Inputs	Expected Outputs	Actual Output	P/F
Invalid number of players	5	Invalid player count. Please type 1, 2, or 3.	Invalid player count. Please type 1, 2, or 3.	Passed
Invalid number of players	assd	Invalid player count. Please type 1, 2, or 3.	Invalid player count. Please type 1, 2, or 3.	Passed

```
How many players (1 - 3)?
Select Option: 5
Invalid player count. Please type 1, 2, or 3.
How many players (1 - 3)?
Select Option:
Select Option: assd
Invalid player count. Please type 1, 2, or 3.
How many players (1 - 3)?
Select Option:
```

Test Description	Inputs	Expected Outputs	Actual Output	P/F
A valid input	3	Moved onto inputting of 3 names	Moved onto inputting of 3 names	Passed

```
Invalid player count. Please type 1, 2, or 3.
How many players (1 - 3)?
Select Option: 3
```

Test Description	Inputs	Expected Outputs	Actual Output	P/F
Becomes 1 word because of input buffer	name1 extra	Becomes "name1"	Becomes "name1"	Passed
Becomes 15 digits because of input buffer	1234567890qwertyuiop	Becomes "1234567890qwerty"	Becomes "1234567890qwerty"	Passed
Stays the same, a very valid name	normal-name	Stays as "normal-name"	Stays as "normal-name"	Passed

```
What are the Player/s' names?
What is Player 1's name (Max of 15 characters long and no spaces): name1 extra
What is Player 2's name (Max of 15 characters long and no spaces): 1234567890qwertyuiop
What is Player 3's name (Max of 15 characters long and no spaces): normal-name
```

```
The Play Order Will Be:
normal-name
name1
1234567890qwert
Press Any Key to Continue
```

Function: void OrderPlayers(int* nPlayers, char* strPlayer1Name, char* strPlayer2Name, char* strPlayer3Name, char* strFirst, char* strSecond, char* strThird)

Function Description: Using the current time as the seed, roll 3 random numbers to assign the order to the players. Keeps rerolling if a duplicate number is gotten. Assigns the players' names and scores to specific variables.

Test Description	Inputs	Expected Outputs	Actual Output	P/F
Resulting in: 2 3 1	name1 1234567890qwert normal-name	"The Play Order Will Be:" A permutation of the 3 names when randomly selected	"The Play Order Will Be:" A permutation of the 3 names when randomly selected	Passed

```
The Play Order Will Be:
normal-name
name1
1234567890qwert
Press Any Key to Continue
```

Category Selection

In order to save time, only the first category's contents will be listed in the test cases. The same process applies to all other categories but the others include number rerolling when a duplicate number happens.

Function: int RandMinMax(int min, int max)

Function Description: Returns a random number between the min and max (inclusive)

Test Description	Inputs	Expected Outputs	Actual Output	P/F
Resulted in 7	In the background: nCateg1 is assigned	Assigned question contents	Assigned question contents	Passed

```
The chosen categories are:
I Speak for the Trees
Cute Cats
Structures of Society
Famous Scientists
Press Any Key to Continue
```

GetContent Functions

In order to save time, only the first of the 3 will be described in the test cases. The same process applies but with different datatypes and attributes.

Function: void GetContent1(int TitleNum, char* strTitle, char* CatQ1, char* CatQ2, char* CatQ3, char* CatQ4, char* CatQ5)

Function Description: Within the specified variables, assigns the selected random number's item. In this case, assigns the details of the 7th category through "=" and strcpy()

Test Description	Inputs	Expected Outputs	Actual Output	P/F
------------------	--------	------------------	---------------	-----

With the random number being 7, the properties of the 7 th category in questions1.c was assigned which is the category about trees.	none	strTitle = "I Speak for the Trees" Cat1Q1 = "Which tree is known for its vibrant red and orange leaves in the autumn?" Cat1Q2 = "What is the name of a tree that produces conkers, which are often used in games?" Cat1Q3 = "Which tree is famous for its white bark and can be found in North America?" Cat1Q4 = "What is the tallest type of tree in the world?" Cat1Q5 = "Which tree species is commonly associated with the production of paper?"	strTitle = "I Speak for the Trees" Cat1Q1 = "Which tree is known for its vibrant red and orange leaves in the autumn?" Cat1Q2 = "What is the name of a tree that produces conkers, which are often used in games?" Cat1Q3 = "Which tree is famous for its white bark and can be found in North America?" Cat1Q4 = "What is the tallest type of tree in the world?" Cat1Q5 = "Which tree species is commonly associated with the production of paper?"	Passed
--	------	--	--	--------

```

The chosen categories are:
I Speak for the Trees
Cute Cats
Structures of Society
Famous Scientists
Press Any Key to Continue

```

Function: void SetPlayer(int nTurnTracker, char* Player1Name, char* Player2Name, char* Player3Name, int Player1Score, int Player2Score, int Player3Score, char* strActivePlayer, int* nActiveScore)

Function Description: Based on the nTurnTracker, uses switch cases to assign strActivePlayer for the name and nActiveScore for the current player's score

Note: Player1 is given a score at the start of 1, 2 is given 2, and 3 is given 3. This allows for easier identification while debugging and for test case demonstration. This will not be the case for the final output.

Test Description	Inputs	Expected Outputs	Actual Output	P/F
The player with the assigned number 1 is the first player	nTurnTracker = 1	strActivePlayer = "normal-name" nActiveScore = 1	strActivePlayer = "normal-name" nActiveScore = 1	Passed

```
It's time for the first round of JEOPARDY!
-----
| A      | B      | C      | D      |
-----
| $200   | $200   | $200   | $200   |
-----
| $400   | $400   | $400   | $400   |
-----
| $600   | $600   | $600   | $600   |
-----
| $800   | $800   | $800   | $800   |
-----
| $1000  | $1000  | $1000  | $1000  |
-----

It is currently normal-name's turn
Your score is: 1
Select which category you want to answer:
[A] I Speak for the Trees
[B] Cute Cats
[C] Structures of Society
[D] Famous Scientists
[E] Exit Game
Please choose a category [A, B, C, D, E]: _

The Play Order Will Be:
normal-name
name1
1234567890qwert
Press Any Key to Continue
```

Function:

-End of PlayGame being the topic function-

```
Function: void PrintTable(int row1a, int row1b, int row1c, int row1d,
                          int row2a, int row2b, int row2c, int row2d,
                          int row3a, int row3b, int row3c, int row3d,
                          int row4a, int row4b, int row4c, int row4d,
                          int row5a, int row5b, int row5c, int row5d)
```

Function Description: Is given the value of all prizes and puts them in a table. Uses the functions PrintLine() and PrintRow() which just makes the layout. All of which can be inferred from the image they produce.

A	B	C	D
\$200	\$200	\$200	\$200
\$400	\$400	\$400	\$400
\$600	\$600	\$600	\$600
\$800	\$800	\$800	\$800
\$1000	\$1000	\$1000	\$1000

Topic Function: PickChoice

```
Function: void PickChoice(
    char* Title1, char* Title2, char* Title3, char* Title4,
```

char* Cat1Q1, char* Cat2Q1, char* Cat3Q1, char* Cat4Q1,
char* Cat1Q2, char* Cat2Q2, char* Cat3Q2, char* Cat4Q2,
char* Cat1Q3, char* Cat2Q3, char* Cat3Q3, char* Cat4Q3,
char* Cat1Q4, char* Cat2Q4, char* Cat3Q4, char* Cat4Q4,
char* Cat1Q5, char* Cat2Q5, char* Cat3Q5, char* Cat4Q5,

char* Cat1Ch1, char* Cat2Ch1, char* Cat3Ch1, char* Cat4Ch1,
char* Cat1Ch2, char* Cat2Ch2, char* Cat3Ch2, char* Cat4Ch2,
char* Cat1Ch3, char* Cat2Ch3, char* Cat3Ch3, char* Cat4Ch3,
char* Cat1Ch4, char* Cat2Ch4, char* Cat3Ch4, char* Cat4Ch4,
char* Cat1Ch5, char* Cat2Ch5, char* Cat3Ch5, char* Cat4Ch5,

char Cat1Ans1, char Cat2Ans1, char Cat3Ans1, char Cat4Ans1,
char Cat1Ans2, char Cat2Ans2, char Cat3Ans2, char Cat4Ans2,
char Cat1Ans3, char Cat2Ans3, char Cat3Ans3, char Cat4Ans3,
char Cat1Ans4, char Cat2Ans4, char Cat3Ans4, char Cat4Ans4,
char Cat1Ans5, char Cat2Ans5, char Cat3Ans5, char Cat4Ans5,

int* Cat1P1, int* Cat2P1, int* Cat3P1, int* Cat4P1,
int* Cat1P2, int* Cat2P2, int* Cat3P2, int* Cat4P2,
int* Cat1P3, int* Cat2P3, int* Cat3P3, int* Cat4P3,
int* Cat1P4, int* Cat2P4, int* Cat3P4, int* Cat4P4,
int* Cat1P5, int* Cat2P5, int* Cat3P5, int* Cat4P5,

int* nTurnTracker, int nPlayers,

char* strFirst, char* strSecond, char* strThird,
int* nFirstScore, int* nSecondScore, int* nThirdScore,
char* strActivePlayer, int* nActiveScore,

int* CatAProgress, int* CatBProgress, int* CatCProgress, int* CatDProgress, int* CatEProgress, int*
nJeopardyProgress, int* nLength2,


```
int nDoubleMode
```

```
)
```

Function Description: Is looped based on Jeopardy Round length which becomes nJeopardyProgress. Contains all of the functions to answer items in the board and select questions. The bulk of the actions occur within.

You can consider this the container that contains all of the other functions without necessarily outputting anything itself. As such, I won't put a table for this one as a whole but instead for it's contents.

Choose Category

Description: Asks the player to input a category to answer. Will validate if a choice is valid. But if the category has been completed, it will stop it from being chosen. Just reads the first digit given, input buffers the rest.

Test Description	Inputs	Expected Outputs	Actual Output	P/F
An invalid input	F	"Invalid choice. Please pick from: [A, B, C, D, E]: "	"Invalid choice. Please pick from: [A, B, C, D, E]: "	Passed
An invalid input	123	"Invalid choice. Please pick from: [A, B, C, D, E]: "	"Invalid choice. Please pick from: [A, B, C, D, E]: "	Passed
The question hasn't been completed	A	Proceeds to choose question	Proceeds to choose question	Passed
The question has been completed	A	The category has been completed. Pick another.	The category has been completed. Pick another.	Passed

```
Please choose a category [A, B, C, D, E]: F
Invalid choice. Please pick from: [A, B, C, D, E]
Please choose a category [A, B, C, D, E]: _
```

```
Please choose a category [A, B, C, D, E]: 123
Invalid choice. Please pick from: [A, B, C, D, E]
Please choose a category [A, B, C, D, E]:
```

```
Please choose a category [A, B, C, D, E]: AAA
You chose category [A] I Speak for the Trees
Which question would you like to answer?
[A]$200
[B]$400
[C]$600
[D]$800
[E]$1000
Please choose a question [A, B, C, D, E]:
```

```
-----
| A       | B       | C       | D       |
|-----|-----|-----|-----|
| $0      | $200    | $200    | $200    |
|-----|-----|-----|-----|
| $0      | $400    | $400    | $400    |
|-----|-----|-----|-----|
| $0      | $600    | $600    | $600    |
|-----|-----|-----|-----|
| $0      | $800    | $800    | $800    |
|-----|-----|-----|-----|
| $0      | $0       | $1000   | $1000   |
|-----|-----|-----|-----|

It is currently 1234567890qwert's turn
Your score is: 1403
Select which category you want to answer:
[A] I Speak for the Trees
[B] Cute Cats
[C] Structures of Society
[D] Famous Scientists
[E] Exit Game
Please choose a category [A, B, C, D, E]: A
The category has been completed. Pick another.
Please choose a category [A, B, C, D, E]:
```

E to exit

Choosing the option E will set the nJeopardyProgress to 0. The nJeopardyProgress is set to the length of the round and gets deducted as progress happens. When it is 0, it exits the loop resulting in the exit and return to the main menu.

```
#####
#                                     *--+ #
#                                     *@+ #
# .###. +##### = :*#####. #####*~ :*#####+ +#####+ :#####+ :##* .### *@+ #
# :@@:=@@@@@@@@* #@@@@@@@@@=:@@@@@@@@@: *@@@@@. #@@@@@@@@@-@@@@@@@@@+@@% :@@@ *@+ #
# :@@:=@@@@@@@@* #@@@@@@@@@=:@@@@@@@@@: %@@@@@- #@@@@@@@@@* -@@@@@@@@@* -@@% :@@@ *@+ #
# :@@:=@@@@@@@@* #@@@@@@@@@=:@@@@@@@@@: @@@@@@+ #@@@@@@@@@* -@@@@@@@@@* -@@% :@@@ *@+ #
# :@@:=@@@@@@@@* #@@@@@@@@@=:@@@@@@@@@: .@@@@@@@@# #@@@@@@@@@* -@@@@@@@@@* -@@% :@@@ *@+ #
# :@@:=@@@+===: #@@@+@@@=:@@@+*@@@-(@@=#@@@ #@@@=#@@@* -@@%=#@@*-@@% :@@@ *@+ #
# :@@:=@@@ #@@% @@@=:@@@ :@@@+@@# -@@@ #@@# #@@* =@@*-@@% :@@@ *@+ #
# : : : :@@:=@@@-: : : : #@@% @@@=:@@@-.:@@@:#@@* -@@@ :@@% :%@@* -@@* =@@*-@@% :@@@ *@+ #
# =@@@. :@@:=@@@@@@@@* #@@% @@@=:@@@@@@@@@. @@@@@@@@@@= #@@@@@@@@@% -@@* =@@*.%@@@@@@@@@ *@+ #
# =@@@. :@@:=@@@-: : : : #@@% @@@=:@@@-: : : :. @@@=: :%@@* #@@% :%@@# -@@* =@@* : : : =@@@ *@+ #
# =@@@. :@@:=@@@ #@@% @@@=:@@@ : : : :. @@@. *@@% #@@# :@@% -@@* =@@* :@@@ : - . #
# =@@@*+*@@@=:@@@*+*+*+ #@@@+*@@@=:@@@ =@@@ =@@@ #@@# :@@% -@@%+*+*+*+ .+*+*+*+*+*+ *@+ #
# :%@@@@@@@@# #@@@@@@@@* -%@@@@@@@@: @@@: *@@* :@@@. #@@# .@@% -@@@@@@@@@. -@@@@@@@@@% =@@= #
#####

You chose to exit the game.
End of Jeopardy Round
CURRENT STANDINGS:
name1: 1
Press Any Key to Continue

Welcome to Jeopardy!
[1] Start Game
[2] How to Play
[3] Exit Game
Select Option: 1
```

Function: int ValidateQuestion(int* P1, int* P2, int* P3, int* P4, int* P5)

Function Description: Asks the player for the question that they want to answer and checks for validity, approves it when the question's price value is greater than 0. Otherwise, asks for a different input.

Test Description	Inputs	Expected Outputs	Actual Output	P/F
Invalid input	F	Invalid choice. Please pick from [A, B, C, D, E]:	Invalid choice. Please pick from [A, B, C, D, E]:	Passed
Invalid input	123	Invalid choice. Please pick from [A, B, C, D, E]:	Invalid choice. Please pick from [A, B, C, D, E]:	Passed

The question has not been completed	B B B	Proceeds to choose answer	Proceeds to choose answer	Passed
The question has been completed	B	That question has already been answered.	That question has already been answered.	Passed

```

Please choose a question [A, B, C, D, E]: F
Invalid choice. Please pick from: [A, B, C, D, E]
Please choose a question [A, B, C, D, E]: _

Please choose a question [A, B, C, D, E]: 123
Invalid choice. Please pick from: [A, B, C, D, E]
Please choose a question [A, B, C, D, E]: _

Please choose a question [A, B, C, D, E]: B B B _

```

```

Your question is: What is the name of a tree that produces conkers, which are often used in games?
Your choices are (B):
A) Cedar
B) Chestnut
C) Birch
D) Redwood

What is your choice:

That question has already been answered.
Please choose a question [A, B, C, D, E]: _

```

Function: void PickAnswer (char* CatQ, char* CatCh, char CatAns, int* CatP,

int* nTurnTracker, int nPlayers, int nFailCounter,

char* strFirst, char* strSecond, char* strThird,

int* nFirstScore, int* nSecondScore, int* nThirdScore,

char* strActivePlayer, int* nActiveScore, int nDoubleMode)

Function Description: Is the main container of the functions that will check whether a player’s answer is right or wrong.

Starts with:

Function: int CheckAnswer(char* CatQ, char* CatCh, char CatAns, int* nActiveScore, int* CatP, char* strActivePlayer, int nDoubleMode)

Function Description: Will see if the input matches the question’s answer. If it does, it adds the points to the nActiveScore. If not, it will deduct points or in the case of Double round, either deduct as normal or set it to 0. Sets the value of the prize to 0 to make it unanswerable. Wrong answers lead to ChangePlayers.

Correct Answer

Test Description	Inputs	Expected Outputs	Actual Output	P/F
A correct answer is given	B	Congrats, <name>! You won \$<Points>	Congrats, <name>! You won \$<Points>	Passed

```
Your question is: What is the name of a tree that produces conkers, which are often used in games?
Your choices are (B):
A) Cedar
B) Chestnut
C) Birch
D) Redwood

What is your choice:
```

```
What is your choice: B
Congrats, normal-name! You won $400
Press Any Key to Continue
```

```
-----
| A      | B      | C      | D      |
-----
| $200   | $200   | $200   | $200   |
-----
| $0     | $400   | $400   | $400   |
-----
| $600   | $600   | $600   | $600   |
-----
| $800   | $800   | $800   | $800   |
-----
| $1000  | $1000  | $1000  | $1000  |
-----

It is currently normal-name's turn
Your score is: 401
Select which category you want to answer:
[A] I Speak for the Trees
[B] Cute Cats
[C] Structures of Society
[D] Famous Scientists
[E] Exit Game
Please choose a category [A, B, C, D, E]:
```

Wrong Answer

Test Description	Inputs	Expected Outputs	Actual Output	P/F
A wrong answer is given to pass the turn to the next players	123	Sorry, <name>, that is the wrong answer. You lost <\$Points> It is now <next player>'s turn	Sorry, <name>, that is the wrong answer. You lost <\$Points> It is now <next player>'s turn	Passed

```
Your choices are (C):
A) Pine
B) Oak
C) Maple
D) Willow

What is your choice: 123
Sorry, normal-name, that is the wrong answer.
You lost $200
It is now name1's turn
Your current score is: 2
What is your answer to the question?
```

Function: void ChangePlayers(int *nTurnTracker, int nPlayers,
char* strFirst, char* strSecond, char* strThird,
int* nFirstScore, int* nSecondScore, int* nThirdScore,
char* strActivePlayer, int* nActiveScore)

Function Description: Based on the nTurnTracker it applies the changes to the active player. The nTurnTracker changes and sets the strActivePlayer and nActiveScore to the next player’s details. nTurnTracker only goes as high as the nPlayers then resets it back to 0 to never overflow.

Test Description	Inputs	Expected Outputs	Actual Output	P/F
A wrong answer is given to pass the turn to the next players. Goes to player 3.	zzz	Sorry, <name>, that is the wrong answer. You lost <\$Points> It is now <next player>’s turn	Sorry, <name>, that is the wrong answer. You lost <\$Points> It is now <next player>’s turn	Passed

```

Your choices are (C):
A) Pine
B) Oak
C) Maple
D) Willow

What is your choice: 123
Sorry, normal-name, that is the wrong answer.
You lost $200
It is now name1's turn
Your current score is: 2
What is your answer to the question? zzz
Sorry, name1, that is the wrong answer.
You lost $200
It is now 1234567890qwert's turn
Your current score is: 3
What is your answer to the question? C

```

```

-----
| A      | B      | C      | D      |
-----
| $0     | $200   | $200   | $200   |
-----
| $0     | $400   | $400   | $400   |
-----
| $600   | $600   | $600   | $600   |
-----
| $800   | $800   | $800   | $800   |
-----
| $1000  | $0     | $1000  | $1000  |
-----

It is currently 1234567890qwert's turn
Your score is: 203
Select which category you want to answer:
[A] I Speak for the Trees
[B] Cute Cats
[C] Structures of Society
[D] Famous Scientists
[E] Exit Game
Please choose a category [A, B, C, D, E]:

```

Test Description	Inputs	Expected Outputs	Actual Output	P/F
A wrong answer is given 3 times in a	b b b	Nobody got the correct answer.	Nobody got the correct answer.	Passed

row. Returns to the initial player.		It is now <initial player>'s turn	It is now <initial player>'s turn	
-------------------------------------	--	-----------------------------------	-----------------------------------	--

```

It is now name1's turn
Your current score is: -198
What is your answer to the question? b
Sorry, name1, that is the wrong answer.
You lost $600
Nobody got the correct answer.
It is now 1234567890qwert's turn
Your current score is: -397
Press Any Key to Continue

```

As written in the length in the beginning, the Jeopardy round will only go for 8 turns.

```

-----
| A      | B      | C      | D      |
-----
| $0     | $200   | $200   | $200   |
-----
| $0     | $400   | $400   | $400   |
-----
| $0     | $600   | $600   | $0      |
-----
| $0     | $800   | $800   | $800   |
-----
| $0     | $0      | $1000  | $1000  |
-----
It is currently normal-name's turn
Your score is: 1201
Select which category you want to answer:
[A] I Speak for the Trees
[B] Cute Cats
[C] Structures of Society
[D] Famous Scientists
[E] Exit Game
Please choose a category [A, B, C, D, E]:

```

7 rounds finished

```

It is now 1234567890qwert's turn
Your current score is: 803
What is your answer to the question? C
Correct! You won $800
Press Any Key to Continue

```

-End of PickChoice being the topic function-

Topic Function is PlayGame again

After the nJeopardyProgress becomes 0, Jeopardy round ends. Current standings are shown and the Double Round starts. For the sake of time, the same questions from question1 are reused but have z at the start

```

End of Jeopardy Round
CURRENT STANDINGS:
normal-name: 401
name1: -1598
1234567890qwert: 1603
Press Any Key to Continue

```

Double Round print screenshot is from a different session which causes mismatch.

```

#####  #####  ##  ##  #####  #####  #####
##  ##  ###  ###  ##  ##  ##  ##  ##  #
##  ##  ##  ##  ##  ##  ##  ##  ##
##  ##  ##  ##  ##  ##  #####  ##  #####
##  ##  ##  ##  ##  ##  ##  ##  ##
##  ##  ###  ###  ##  ##  ##  ##  ##  #
#####  #####  #####  #####  #####  #####

#####  #####  ##  ##  ##  ##  #####
##  ##  ###  ###  ##  ##  ###  ##  ##  ##
##  ##  ##  ##  ##  ##  #####  ##  ##
#####  ##  ##  ##  ##  #####  ##  ##
##  ##  ##  ##  ##  ##  ##  #####  ##  ##
##  ##  ###  ###  ##  ##  ##  ###  ##  ##
#####  ##  #####  #####  ##  ##  #####

```

The chosen categories are:

zCountry Capitals

zCute Cats

zComputers and Tech

zFamous Scientists

Press Any Key to Continue

It's time for the second round of JEOPARDY! The Double Round

A	B	C	D	
\$400	\$400	\$400	\$400	
\$800	\$800	\$800	\$800	
\$1200	\$1200	\$1200	\$1200	
\$1600	\$1600	\$1600	\$1600	
\$2000	\$2000	\$2000	\$2000	

It is currently 1234567890qwert's turn

Your score is: 1603

Select which category you want to answer:

- [A] zFamous Scientists
- [B] zI Speak for the Trees
- [C] zOur Solar System
- [D] zStructures of Society
- [E] Exit Game

Please choose a category [A, B, C, D, E]:

Function: void PlayGame2(int* nLength2, int nPlayersHold, int nTurnTrackerHold,

char* strFirstHold, char* strSecondHold, char* strThirdHold, char* strActivePlayerHold,

int nFirstScoreHold, int nSecondScoreHold, int nThirdScoreHold, int nActiveScoreHold, int nDoubleMode,

int* nFinal, int* nFinaleScore1, int* nFinaleScore2, int* nFinaleScore3)

Function Description: Similar to PlayGame() but accesses nFinal and nFinaleScore# variables which will be updated at the end of the round. It does not contain the initializing parts such as getting the number of players and player names.

GetContent commands are the same but instead takes content from questions2.c.

In the Double Round, the point values are doubled and there are 2 penalty modes based on nDoubleMode. Normal and Zero.

In normal mode, mistakes just deduct from your points

Test Description	Inputs	Expected Outputs	Actual Output	P/F
Normal mode mistake	A	Sorry, <player name>, that is the wrong answer. You lost \$<Points>. It is now <next player>'s turn	Sorry, <player name>, that is the wrong answer. You lost \$<Points>. It is now <next player>'s turn	Passed

```
It is now 1234567890qwert's turn
Your current score is: 1603
What is your answer to the question? A
Sorry, 1234567890qwert, that is the wrong answer.
You lost $400
```

In Zero mode, a mistake makes your score 0 regardless of whether it was positive or negative.

Test Description	Inputs	Expected Outputs	Actual Output	P/F
Zero mode mistake	b	Sorry, <player name>, that is incorrect. Your points have been reset to 0. It is now <next player>'s turn	Sorry, <player name>, that is incorrect. Your points have been reset to 0. It is now <next player>'s turn	Passed

```
What is your choice: b
Sorry but that answer is incorrect.
Your points have been reset to 0

It is now one's turn
Your current score is: -798
What is your answer to the question? _
```

```
-----
| A      | B      | C      | D      |
|-----|-----|-----|-----|
| $400   | $400   | $400   | $400   |
|-----|-----|-----|-----|
| $800   | $800   | $800   | $800   |
|-----|-----|-----|-----|
| $1200  | $1200  | $1200  | $1200  |
|-----|-----|-----|-----|
| $1600  | $1600  | $1600  | $1600  |
|-----|-----|-----|-----|
| $0     | $2000  | $2000  | $2000  |
|-----|-----|-----|-----|

It is currently two's turn
Your score is: 0
Select which category you want to answer:
[A] zOur Solar System
[B] zStructures of Society
[C] zComputers and Tech
[D] zI Speak for the Trees
[E] Exit Game
Please choose a category [A, B, C, D, E]: _
```


At the end of the Double round, it will reveal the score standings and lead to the Final Jeopardy.

Topic Function is main() again

```

      ### ###   ####   ### ##   ##   #####
      ##  ##   ##     ## ##   ##   ##
      ##      ##     # ## #   ## ##   ##
      ## ##    ##     ## ##   ## ##   ##
      ##      ##     ## ##   ## ####   ##
      ##      ##     ## ##   ## ##   ## ##
      #####    #####   ### ##   ### ##   ### ##

#####   ### ###   ## ##   ### ##   ##   ### ##   ### ##   ## ##
##   ##  ##   ##  ##   ##  ##   ##   ##   ##   ##   ##
##   ##   ##   ##   ##   ##  ##   ##   ##   ##   ##   ##
##   ##   ##   ##   ##   ##  ##   ##   ##   ##   ##   ##
## ##   ##   ##   ##   ##   ##  ##   ##   ##   ##   ##
## ##   ##   ##   ##   ##   ##  ##   ##   ##   ##   ##
## #   ### ###   ## ##   #####   ### ##   ##### ##   ### ##   ##

Now starts Final Jeopardy! Bet up to your maximum points.
Win or Lose how much you gamble.
Answers are singular, one-word, and CAPITALIZED.
Press Any Key to Continue
```

You may wager if your points are greater than 0 to answer a random questiion. If you have 0 or less, you wont't be able to wager.

Test Description	Inputs	Expected Outputs	Actual Output	P/F
An invalid input.	-11	Invalid input. Please enter a number between 0 and %end if double round score	Invalid input. Please enter a number between 0 and %end if double round score	Passed
An invalid input.	sdfdsf	Invalid input. Please enter a number between 0 and %end if double round score	Invalid input. Please enter a number between 0 and %end if double round score	Passed
A valid input	1500	An valid input is added	An valid input is added	Passed

```
normal-name can wager from 0 up to 3201: 4000
Invalid input. Please enter a number between 0 and 3201:-11
Invalid input. Please enter a number between 0 and 3201:sdfdsf
Invalid input. Please enter a number between 0 and 3201:1500
Your question is:
What is the name of an extinct flightless bird?
Type your answer (DODO): Wrong
That is incorrect, you lost $1500
Press Any Key to Continue
```

If not enough points:

```

Sorry name1, you don't have enough points to wager.
Press Any Key to Continue
```

At the end show ending game standings

```
END OF GAME STANDINGS
normal-name: 1701
name1: -4798
1234567890qwerty: 5606
Press Any Key to Continue
```

Side details

The usage of one or two players only works just fine everywhere else. The game functions by modifying nActiveplayer and nActiveScore which only get set depending on the state of nTurnTracker which won't reach values past the nPlayers.

```
END OF GAME STANDINGS
single: 11602
Press Any Key to Continue
```

```
END OF GAME STANDINGS
two: 0
one: 4000
Press Any Key to Continue
```

Upon finishing a game, you are returned to the main menu to play again since the functions are within a while(1) where the only way to exit is selecting 3.

```
#####
#                                                                 * - + #
#                                                                 * @ @ + #
# .###. +##### = : *#####* .#####* - : *##### +#####* .#####* :##* .### * @ @ + #
# : @ @ : = @ @ @ @ @ @ * # @ @ @ @ @ @ = : @ @ @ @ @ @ : * @ @ @ @ @ @ # @ @ @ @ @ @ * - @ @ @ @ @ @ + - @ @ % : @ @ @ * @ @ + #
# : @ @ : = @ @ @ @ @ @ * # @ @ @ @ @ @ = : @ @ @ @ @ @ : % @ @ @ @ @ @ - # @ @ @ @ @ @ * - @ @ % : @ @ @ * @ @ + #
# : @ @ : = @ @ @ @ @ @ * # @ @ @ @ @ @ = : @ @ @ @ @ @ : @ @ @ @ @ @ + # @ @ @ @ @ @ * - @ @ @ @ @ @ * - @ @ % : @ @ @ * @ @ + #
# : @ @ : = @ @ @ @ @ @ * # @ @ @ @ @ @ = : @ @ @ @ @ @ : @ @ @ @ @ @ # # @ @ @ @ @ @ * - @ @ @ @ @ @ * - @ @ % : @ @ @ * @ @ + #
# : @ @ : = @ @ @ + = = = : # @ @ + = @ @ = : @ @ + = * @ @ : - @ @ = # @ @ # @ @ % = = @ @ * - @ @ % = # @ @ * - @ @ % : @ @ @ * @ @ + #
# : @ @ : = @ @ @ # @ @ % @ @ = : @ @ : : @ @ + @ @ # - @ @ @ # @ @ # # @ @ * - @ @ * = @ @ * - @ @ % : @ @ @ * @ @ + #
# . : : : @ @ : = @ @ - : : : . # @ @ % @ @ = : @ @ - . = @ @ : # @ @ * . - @ @ @ : # @ @ % . : % @ @ * - @ @ * = @ @ * - @ @ @ : . = @ @ @ * @ @ + #
# = @ @ . : @ @ : = @ @ @ @ @ @ * # @ @ % @ @ = : @ @ @ @ @ @ @ @ @ @ @ @ @ @ = # @ @ @ @ @ @ % . - @ @ * = @ @ * . % @ @ @ @ @ @ @ * @ @ + #
# = @ @ . : @ @ : = @ @ - : : : . # @ @ % @ @ = : @ @ - : : : . @ @ - : : % @ @ * # @ @ % : : * @ @ # - @ @ * = @ @ * . : : : = @ @ @ * @ @ + #
# = @ @ . : @ @ : = @ @ @ # @ @ % @ @ = : @ @ : : @ @ . * @ @ % # @ @ # : @ @ % - @ @ * = @ @ * : @ @ @ : - - . #
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# : % @ @ @ @ @ @ # . # @ @ @ @ @ @ * - % @ @ @ @ @ @ % : @ @ : * @ @ * : @ @ @ # @ @ # . @ @ % - @ @ @ @ @ @ # . - @ @ @ @ @ @ % = * @ @ = #
#
#####
Welcome to Jeopardy!
[1] Start Game
[2] How to Play
[3] Exit Game
Select Option: _
```