

Procedural Programming Project

Project Value: 20%

Submission Due Date: 30th December 2024 9pm

Your project is to write a program that implements the card game called “War” which is outlined below.

Game Overview:

The game is based on the card game War - where each player flips over a card, highest card wins.

Number of players: Between 2-4 players

Game lasts: 13 rounds

Setup: Each player gets 13 cards

Note: Player can see that cards in their hand but cannot see their opponent's cards.

Scoring:

- 2-10 = 2-10 points (face value)
- J (Jack) = 11 points
- Q (Queen) = 12 points
- K (King) = 13 points
- A (Ace) = 14 points

How is the game played?

Round: Each round, a player chooses 1 card to play from their hand. The goal is to have the highest UNIQUE card. You can only use each card once.

Round 1 example:

- Player 1 = 5
- Player 2 = 8
- Player 3 = K
- Player 4 = 2
- Player 5 = 8

In this round, Player 3 wins this "war" with the highest card of a K. So Player 3 gets 5+8+13+2+8 points (36 points). Let's continue on with a round 2 example:

Round 2 example:

- Player 1 = A
- Player 2 = Q
- Player 3 = A
- Player 4 = 4
- Player 5 = Q

In this round, Player 4 wins since he has the highest UNIQUE card. The two Aces take themselves out, and the 2 Queens take themselves out - leaving the winning card the 4. (So player 4 gets 56 points!) Continue for a total of 13 rounds. The goal is to have the highest played unique card each round. At the end of the game, the person with the most points win.

Special Rules & Notes:

ALL TIE RULE: If all cards tie another (example of 5 players: A,8,8,A,8) - then those points are rolled over to the next round - making the next round a VERY important round. If a tie like this happens on the last round, then those points are just "lost on the battlefield"

How the program should operate:

- Every time a new game is created the program should ask how many players are playing and the player's cards should then be randomly generated.
- If a saved game is loaded, then the program should display the current status of the game.
- Once the game is loaded the users should be presented with a number of options:
- Complete the next round
- Save the game
- Output the games status
- Exit the game without saving

Project Submission

Each student should submit the code developed to the application (Note: The code must be written in C).

In addition to the code each student should submit a screencast should be included in the submission demonstrating the complete functionality of the solution.

Submission Deadline

Project Submissions to be submitted via the online VLE by 11.59pm on the 30th December 2024.

Points to Note

- Comments expected.
- Good programming practice is expected
- Ensure that any files that are needed to run the program are included in your submission.
- Your code must run. A substantial deduction of marks will occur for code that is not running correctly.
- Plagiarism is not acceptable.
- You may be asked to present your code/application