

Exercise 1 – Card Game

Algorithm:

- 1) Initially two players for a two player game be defined and implemented in a class named **class players**
- 2) To distribute cards equally create a class named **class Deck** for the two players
- 3) To manage this card game with 2 players and cards create another class named **class game_manager**
- 4) To choose characteristics for each card for example chosen characteristics for the Game are Marvel characters with their characteristics being **[name,health,agility,intelligence,attack range]** for all the 15 marvel characters chosen with no two characters are repeated and share the same value with regards to their strength initialized in class named **class cards**.
- 5) To define a dice function for dice count whichever player gets more count of dice will initiate the game first.
- 6) Now two players are playing the card game, with player 1 and player 2 for example if player 1 wins the dice count and selects the characteristic→ attack range = 150 from card name Dr Strange, here player 2 should play with same characteristic and for example his card name is hulk and attack range = 1000 then player 2 with highest strength wins the round with one point should be managed in **class game_manager**
- 7) Players who win the previous round continues to play the game and points get added to previous round result until cards in either one of players are exhausted, player with maximum points wins the game. All the operations are managed in **class game_manager**
- 8) After each round played cards should be placed in another deck called outdated deck in a function named outdated deck and randomize the cards in the deck after every round
- 9) Two spells are created for each player defining them in two functions
 - Function for god spell :- Winning player from the previous round gets to play god spell. Ex:- player 1 wins and chooses to play god spell first player 1 has to select the characteristic from his card and cast a god spell to select one card from opponent, player 2 has to play with that card for the selected characteristic.
 - Function for resurrect spell:- Winning player from the previous round gets to play resurrect spell .Ex:- player 1 wins and choose to play resurrect spell then he has to take top card from the outdated deck and play that card with opponent.
- 10) Each player in the game gets to cast both god spell and resurrect spell only once .
 - Condition 1:Also if player 1 casts god spell then player 2 cannot play god spell as he forced to chose card by player 1.

- Condition 2: Also if player 1 casts god spell and player 2 casts resurrect spell , here player 1 can force opponent to play either card of his choice or a resurrected card.
- Above two conditions has to be managed in **class game_manager**.

11) To define a main function and call all the functions from classes to create flow of the game.