A PYTHON IMPLEMENTATION OF THE POPULAR CARD GAME 'WAR'

War is a card game, typically played by two players using a standard playing card deck — and often played by children.

Rules of the game:

The deck is divided evenly among the players, giving each a down stack. In unison, each player reveals the top card of their deck—this is a battle —and the player with the higher card takes both cards played and moves them to their stack. If the two cards played are of equal value, then there is a "war". Both players place the next card of their pile face down and then another card face-up. The owner of the higher face-up card wins the war and adds all the cards on the table to the bottom of their deck. If the face-up cards are again equal, then the battle repeats with another set of face-down/up cards. This repeats until one player's face-up card is higher than their opponent's.

Assumptions:

1. Both players are virtual (i.e. the computer plays against itself). For this use-case, the names of the players are Clinton and Trump.
2. Ace is the lowest card (assigned a worth of 1) but if it is shown against a King then it is played like a 14, the winner gets both cards into his/her final deck.
3. Although the program was written to be backwardly compatible with early versions of Python, it is assumed that it will be run using **Python 2.7 or a higher version.**

Pseudocode

- Create a deck of cards, shuffle and spilt into 2 equal decks for each player
- Ask the user if he/she wants to continue the program. Start or Exit the game based on user's input
- To play each player shows the first card of their deck. Decrement a player's deck after each round.
- Decide the winner in each round. The player with the highest card wins that round.
- If a tie both players lose their cards. Decrement each player's deck accordingly.
- End the game when one player runs out of card. the game ends.
- Declare the winner of the game. The player with the highest number of cards wins the game.

Codes Structure

For the sake of optimization, code reusability and readability, the code is sectioned as follows:

Import statements

```
import random  # for shuffling the deck of cards

from time import localtime,strftime

import sys

# import only system from os

from os import system, name
```

Global variable declaration and assignment

- `continue_game = 'Y' # This is the default status. It is assumed the user wants to play the game`
- `clinton_card_value = 0  # Worth of cards while fighting`
- `trump_card_value = 0`
- `clinton_final_deck = [] #Final list of the cards each player has at the end`
- `trump_final_deck = []`
- `ties = []  #List cards lost by both contestant`

Functions

Cosmetic function: These are functions that do not affect the core functionality of the program but are included to enhance the user experience. For this program, the following cosmetic functions were defined.

- `clear_screen()   # To clear the screen before a new game`
- `print_intro()  # To display the welcome messages and instructions.`

Core functions: These functions perform the core processes of the program.

- `play_game()      # Main loop of the program that iterates till the game ends`
- `print_game_summary()`
- `declare_winner()`

What would do differently if I had more time:

- Give the program a Graphic User Interface, showing the actual cards and with some animations
- Make the program a stand-alone application that could be installed on a mobile device and possibly distributed as a free-ware on popular stores.

References:

https://en.wikipedia.org/wiki/War_(card_game)

https://docs.python.org/3/