# Exercise 1 - Card Game Stage 1

### Card Game Stage

## Objective

The objective in this exercise is to gain some understanding and experience in the use of Python Lists. The exercise will also recap functions and control flow methods. You will need to write code creating and manipulating lists and make use of the random library functions.

## Overview

In this exercise, you will write code for the first part of a Blackjack game.   
A simplified set of rules are listed at the end of the exercise.

## Part 1

1. Create a new Python project called Game.
2. Add a new file called Pontoon.py.
3. Copy and paste the following code snippet into the empty python page.

**cardDeck** = (['Ace Spades','2 Spades','3 Spades','4 Spades','5 Spades',  
'6 Spades','7 Spades','8 Spades','9 Spades','10 Spades','Jack Spades',  
'Queen Spades','King Spades'] +  
['Ace Hearts','2 Hearts','3 Hearts','4 Hearts','5 Hearts','6 Hearts',  
'7 Hearts','8 Hearts','9 Hearts','10 Hearts','Jack Hearts',  
'Queen Hearts','King Hearts'] +

['Ace Clubs','2 Clubs','3 Clubs','4 Clubs','5 Clubs','6 Clubs','7 Clubs',

'8 Clubs','9 Clubs','10 Clubs','Jack Clubs','Queen Clubs','King Clubs'] +

['Ace Diamonds','2 Diamonds','3 Diamonds','4 Diamonds','5 Diamonds',

'6 Diamonds','7 Diamonds','8 Diamonds','9 Diamonds','10 Diamonds',  
'Jack Diamonds','Queen Diamonds','King Diamonds'])

1. Write code to create an empty list for a player and one for the dealer.
2. Create a function to deal a card.
3. Generate a random number between 0..len(cardDeck)-1
4. Investigate how to get a random number using Python.
5. Pop the card out of the cardDeck and return it to the caller.
6. Deal two cards to the player and one to the dealer.
7. Create a function to evaluate the scores.
8. Announce the winner after the two cards are dealt.

## Part 2

1. At the beginning of your program ask the user to enter the number of players.
2. Create a multiplayer game.
3. Record/Log the cards played and scores in a CSV file. Include the date and time the log was appended.

## Simplified Rules

The game involves a variable number of players and a dealer. The object of the game is to arrive at a score based on the value of the cards in your hand which is higher than anyone else’s. If a player’s cards include both a “royal” card and an ace this is an automatic win unless the dealer has the same, in which case the dealer wins. The same is true if a player and the dealer have the same points value, i.e. the dealer wins.

The first stage is to deal two cards to each player. In the real game, the players are dealt their cards face down and the dealer’s face up.

At this point, the player can decide to “twist” or “stick”. “Twist” means to be dealt another card (face up); “stick” means to stay with the cards you have. Twisting means you have the potential of increasing your score but if it goes above twenty-one you have “bust” and are out.

## A bit of history …

"Vingt Et Un" can be translated from French as "twenty one"; this card game was highly popular in France in the 17th century and is believed to be the predecessor of modern Blackjack (also known as “Pontoon” in the UK though the American term is more in use today). The objective of the game was the same as that of blackjack - to beat a dealer by getting more points without exceeding 21 or by getting a ‘Natural’ or ‘Blackjack’.