**EECS 1015: LAB #4 – Functions**
**Assigned: Oct 5, 2020**
**Due date: Oct 23, 2020**

**#Important reminder for your fourth lab**
1) You must submit your lab via web-submit.

2) Please make sure you correctly submit your file (only a single file please – `lab4.py`).

3) Please follow the instructions carefully – read the lab carefully to understand everything you need to do. This lab only has one task, but it has requirements on various functions you need to define.

## 1. GOALS/OUTCOMES FOR LAB

-   To practice functions definition and calling in Python
-   To continue practicing with string input and string processing
-   To continue practicing using loops and if statements
-   To write your own Python code

## 2. LAB 4 – TASK/INSTRUCTIONS

**Task 0: [This will be the same for all labs]:** Start you code with comments that include this lab ID, your full name, email address, and student id as follows:

```
# Lab 4
# Author: Michael S. Brown
# Email: msb99898@aol.com
# Student ID: 10233030
```

**This lab has only 1 task.  Please read carefully.  A video of this lab running is available here.**

https://www.eecs.yorku.ca/~mbrown/EECS1015_Lab4.mp4

# See explanation of the task on next page.

# Main Task – Two Card Poker Game

In this lab you are to write a simple two card poker game as follows:

Each play of the game, the **user** will get two cards and the **computer** will get two cards.

Cards are an integer value between 2-14, but are printed out as 2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q, K, A
The winner of the game is based on the following rankings:

> *Pair (2 cards of the same value)*
>   *- if both players have a pair, then the pair with the highest numerical value wins*
>   *- if only one player has a pair, then the pair wins*
> *Highest Cards*
>    *- if neither player has a pair, then the player with the highest card wins.*
>    *- if both players highest card is the same, then the winner goes to the player with the second highest card*
> *Tie: If both players have the exact same cards then no winner, it is a tie*

**Example**:
[A] [A] beats [K] [K]  -- when both players have a pair, the highest pair wins
[2] [2] beats [A] [K]  -- if only one player has a pair, the pair wins
[A] [K] beats [A] [Q] – if neither has a pair, the highest card wins.  If both players have the same highest card, then the
                2nd highest card wins (in this case, [K] (13) beats [Q] (12) )
[A] [2] beats [K] [Q] – Otherwise, the highest card wins.
If both plays have the same card, then it is a tie (e.g., [J] [8] and [J] [8] is a tie)

**Your requirements – read carefully, there are functions you must define to get full marks:**

(1) Write a function named `drawcards()` [no parameters] that generates **two** random cards represented as integers with values [2 to 14] inclusive.  Your function should return the two cards such that the first card is greater than or equal to the second card.

For example, if random numbers are 2 and 13, then your function should return in the order 13 and 2.

*Please see notes on how to return two values with a function.*

(2) Write a function named `card2str()` [one parameter] that will convert a card integer value to a string and return the string result.  Use the following conversion:

> Cards with values between 2-10 should be converted their string representation "2" – "10".

> Card value 11 is "J", value 12 is "Q", value 13 is "K" and value 14 is "A".

For example, card2str(2) will return "2".  card2str(12) will return "Q"

(3) Write a function named `printhand()` [three parameters] that will print out the two cards as follows (depending on the player and their cards).
[A] [2] Your Cards
[3] [3] Computer's Cards

(4) Write a function named `printoutcome()` [four parameters] that will print out if you win, lose, or tie.  This function should take four arguments (your 2 cards and the computer's 2 cards).  In my opinion, this is the most difficult function for lab 4.  Take care to get it work properly.  This functoin needs to compute the correct answer based on the ranking criteria above.

(5) You program should play one round of the game an then ask the user if you'd like to play again (Y/N).  If the user doesn't type in "N" or "n", keep playing the game.

Note that you can have more functions that mentioned above, but we will be expecting to see:
`drawCards, card2str, printhand, printoutput`

*See next page for example game play.*

Example of game play:

```
** EECS1015 -- AMAZING TWO CARD POKER GAME **
[K] [K] YOUR CARDS
[K] [9] COMPUTER'S CARDS
 YOU WIN
Want to play again? (Y/N) y
[10] [9] YOUR CARDS
[9] [7] COMPUTER'S CARDS
 YOU WIN
Want to play again? (Y/N) y
[K] [9] YOUR CARDS
[Q] [5] COMPUTER'S CARDS
 YOU WIN
Want to play again? (Y/N) y
[7] [7] YOUR CARDS
[A] [A] COMPUTER'S CARDS
 YOU LOSE!
Want to play again? (Y/N) y
[7] [4] YOUR CARDS
[10] [4] COMPUTER'S CARDS
 YOU LOSE
Want to play again? (Y/N) y
[J] [9] YOUR CARDS
[6] [5] COMPUTER'S CARDS
 YOU WIN
Want to play again? (Y/N) y
[A] [2] YOUR CARDS
[Q] [8] COMPUTER'S CARDS
 YOU WIN
Want to play again? (Y/N) y
[J] [10] YOUR CARDS
[Q] [2] COMPUTER'S CARDS
 YOU LOSE
Want to play again? (Y/N) y
[7] [6] YOUR CARDS
[9] [7] COMPUTER'S CARDS
 YOU LOSE
Want to play again? (Y/N) y
[A] [9] YOUR CARDS
[A] [2] COMPUTER'S CARDS
 YOU WIN
Want to play again? (Y/N) y
[J] [8] YOUR CARDS
[Q] [2] COMPUTER'S CARDS
 YOU LOSE
Want to play again? (Y/N) N
** Thank you for playing! **
```

| Labels |
|---|
| Pair wins |
| High card wins |
| High card wins |
| Highest pair wins |
| High card wins |
| High card wins |
| High card wins |
| High card wins |
| High card wins |
| 2nd highest card wins |
| High card wins |
| STOP PLAYING |

WATCH VIDEO OF LAB PROGRAM: **https://www.eecs.yorku.ca/~mbrown/EECS1015_Lab4.mp4**

**3. GRADING SCHEME (Maximum number of points possible 10)**

This lab is more challenging than lab 3 and 4.   However, the notes and trinkets examples are all sufficient to help you do this lab.  To get full marks you need to make sure you follow the instructions correctly.   The following will be our grading scheme for the Lab components specified in Section 2 of this document.

**Task 0: (0 points, but deduction if you skip this part)**

- File name **must** be "lab4.py"  (all lowercase, no spaces)
- The Python comments at the beginning of your program **must** include your name, email, and York student id  (this is important for grading)
- *If your file name is incorrect, your or do not put in the required information we will deduct -5 points (Why are we so harsh?  Because if you don't put in your name and student id it can be very difficult for the TAs to determine whose submission this is.)*

**Task 1: (10 points each)**

- You need to ensure that you implement all the functions required.
- Please watch the accompanying video to see the program running.

-No submission – 0 points
-Any submission 1 week after the due date 50% off the total marks
-Any submission 2 weeks after the due date will not be marked and treated as no submission.

# See pages below on how to submit your lab code.
## MAKE SURE TO SELECT **Lab4** with websubmit

**4. SUBMISSIONS (**EECS web-submit)

You will submit your lab using the EECS web submit.

Click on the follow URL: https://webapp.eecs.yorku.ca/submit



**Web Submit Login**

To access Web Submit:

- Use your **Passport York** account by clicking here, or,
- Use your EECS account by logging in below:

EECS Username:

EECS Password:

Login

York University
Department of Electrical Engineering and Computer Science
Lassonde School of Engineering

**STEP 1** -- If you don't have an EECS account, click here to use Passport York (everyone has a passport York account).

If you do have an EECS account, enter here and go to **STEP 3.**

**STEP 2 –** Enter your passport York username/password.

**Passport YORK**

**Passport York** authenticates y... the York community and gives you access to a wide range of computing resources and services.

Username: abdulm99

Password: ●●●●●●●●●

Login

☐ Click this box before logging in to change your Passport York password.

Academic Year: [2020-21 ▽]

Term: [F ▽]

STEP 3 – Select the correct menu option as follows. Term "F", Course "1015", Assignment "Lab4".

Course: [1015 ▽]

Assignment: [Lab 4 ▽]

Submit Status: Submission

Enabled

Feedback: None

Please specify files to submit:
(You can submit multiple files at once!)

| Choose Files | lab4.py |
| Choose Files | No file chosen |
| Choose Files | No file chosen |
| Choose Files | No file chosen |
| Choose Files | No file chosen |
| Choose Files | No file chosen |
| Choose Files | No file chosen |
| Choose Files | No file chosen |
| Choose Files | No file chosen |
| Choose Files | No file chosen |

STEP 3 cont' – Select your file. The location in PyCharm may be complicated. I recommend you save your PyCharm Python file to your desktop and select from there. Remember, name your file **lab4.py**.

STEP 3 cont' – once you have entered everything above, click "Submit Files".

[Submit Files] [Logout]

webapp.eecs.yorku.ca says

****** ATTENTION ******

You are submitting files to:

Course: 1015
Assignment: Lab1
Academic Year: 2020-21
Term: F

Failure to submit your assignment to the proper course

STEP 4 – Confirm that you have entered everything in correctly. If you make a mistake here and submit to the wrong course, or wrong lab, we won't be able to tell and will mark your lab as not submitted. Please double check before clicking OK.

[OK] [Cancel]

Feedback: None

Please specify files to submit:
(You can submit multiple files at once!)

| | |
|---|---|
| Choose Files | No file chosen |
| Choose Files | No file chosen |
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| Choose Files | No file chosen |
| Choose Files | No file chosen |
| Choose Files | No file chosen |

Submit Files | Logout

**STEP 5 –** After you submit, your webpage will refresh and show that you have submitted the files and the time.

I recommend you logout.

You can resubmit the file if you make changes. However, if the TA has already graded your lab, they will not grade it again, so I recommend you only upload once you have it work.

**Messages:**

- **lab4.py** submitted

**You have submitted these files:**

- lab4.py (6 B) 09/13/2020 21:58:41  Delete

For more details on websubmit, see EECS department instructions:

**https://wiki.eecs.yorku.ca/dept/tdb/services:submit:websubmit**