



National University of Sciences and Technology (NUST)
School of Electrical Engineering and Computer Science

Department of Computing

CS110: Fundamentals of Computer Programming

Class: BESE – 7B

Assignment 2

Submission Due: Dec 9th, 2016, 11:55 pm

Instructor: M. Muddassir Malik



Assignment 2

Introduction

In this assignment you have to understand and implement the following concepts

- Loops
- Lists

Objectives

- To develop skills for using loops.
- To understand how to program conditional calculations.

Tools/Software Requirement

- Python Editor

Task 1 [5]

Write a program that allows a human user to play a simplified version of Blackjack against a computer opponent (you need to learn and use random function).

The simplified blackjack rules are as follows:

- Don't worry about suits or face cards; "cards" will have values from 2-11, and all values are equally likely (that is, unlike a real blackjack game, there's no greater chance of drawing a card with value 10).
- Draw two cards for the player and display them.
- Draw two cards for the "dealer" and display one of them, keeping the other one hidden.
- Allow the player to "hit" as many times as he would like.
- If the player "busts" (gets a total over 21), the dealer automatically wins.
- Allow the dealer to hit as many times as he would like. Dealer should probably hit on sixteen or lower.
- If the dealer busts, the player automatically wins.

Assuming no one has busted, the player with the highest total wins. Dealer wins all ties.



Sample output:

```
Welcome to Mitchell's blackjack program!
You get a 6 and a 5.
Your total is 11.

The dealer has a 7 showing, and a hidden card.
His total is hidden, too.

Would you like to "hit" or "stay"? hit
You drew a 8.
Your total is 19.

Would you like to "hit" or "stay"? stay

Okay, dealer's turn.
His hidden card was a 3.
His total was 10.

Dealer chooses to hit.
He draws a 7.
His total is 17.

Dealer stays.

Dealer total is 17.
Your total is 19.

YOU WIN!
```

Courtesy: G. Mitchell

Task 2 [2.5]

Write a software that provides the functionality of an ATM machine. Information (like Pin code, account number, name and balance) of five users is hard coded into the software, store in lists. Any of the users can use the system and withdraw the amount or enter more funds into his/her account. When one user is finished using the ATM, it should not terminate the program but it displays a welcome screen for the next user as it happens in the real ATM.

Task 3 [2.5]

Write a medical prescription system. The software displays a list of symptoms that the system can handle and then takes in a variable number of symptoms from the user. Based on the symptoms entered by the patient, the system shortlists the illnesses that he/she might have. After shortlisting, if there are more than one illness that is possible, system asks some additional questions to pinpoint an illness. Software suggests a medicine for the patient based on the data provided.



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You need to research some common illnesses for this task.

General Instructions

Any assumptions that you take must be properly stated.

You must do this work individually but you can ask for help from the Lab Engineer. You cannot share your code with anyone or copy code. Plagiarism will result in zero marks.

Deliverables

Submit only 1 zip file (please do not submit a .rar as it does not decrypt through script) on the given LMS link, which contains all the programs. You must include the source code files.

Anyone who submits a word document or anything other than source files will be awarded a zero. Your file should be named as asg2[YOUR FIRST AND LAST NAME].zip

Always submit 1 day before the deadline to avoid any last minute delays.

Marks break down:

1. Working of the program: 60%
2. Code readability: 20%
3. Output structure and aesthetics: 20%