



Course Title: Computer Programming II (JAVA)

Course Code: CSC 305

Course Unit: 3

Course Status: Core

Time: 2½ hours

Instruction: Answer **Question 1** & any other **two (2)** questions

Date: 01/07/2015

- 1a. Five (5) staff of the department decided on monthly contributions that will last for ten (10) months partitioned into two (i.e. Jan-May, then June to Oct). To know the order of collection each month for the two stanzas, they decided on throwing dice. Help out with a Java program to achieve this. During the throws, your system is to detect where a contributor throws a number that has already been thrown/chosen and consequently, jettison that and allow the contributor to re-throw. Output the list of contributors for the two stanzas and the order in which they are to collect.

(6mks)

- b. In the olden, the choice of marriage is dependent on family consent. Assuming a **Single Marital Choice (SMC) App** is to be designed using Java Language, such that the seeker is given two dice to throw before the elders, who decide based on the value thrown. The criteria for judging are:

- If the value thrown is 1, the judgement is: 'Illogical to throw 1: It seems you prefer been single! Are U been forced into marriage proposal?'
- If the value thrown is 2, the judgement is: 'Too young for marriage proposal, make your study your priority at this time!'
- If the value thrown is greater than 2 but less than 6, the judgement is: 'Incompatible, sorry, take time to re-pray and re-dream!'
- If the value thrown is 6, the judgement is: 'Spouse-to-be is not the best match, but manageable, U may wish to proceed where there is no alternative!'
- If the value thrown is 7, the judgement is: 'Congrats, perfect match!'
- If the value thrown is 8, the judgement is: 'Too good a partner, exceedingly perfect!'
- If the value thrown is 9 or 10, the judgement is: 'You are a striker, not sure you are ready for marriage. Be serious and stop burning!'
- If the value thrown is 11 or 12, the judgement is: 'Too old, why did you stay long till now? Hope someone will come for you soonest!'

Implement the App using **Java Random facility** and **Switch-Case Statement**. (8mks)

- c. Write a program that will compute statistics for coin tossed for twelve times. If the user throws 1, capture that as a head **h**; if 0 capture it as tail **t** for the twelve tosses. The program will then display the total number and percentages of heads **h** and tails **t** that is thrown. Behold an output prototype:

```
First toss: h
Second toss: t
Third toss: t
Fourth toss: h
.....
Number of heads: 5
Number of tails: 7
% heads: 37.5
% tails: 62.5
```

(6mks)

- d.

>Deposit	Withdrawal<
>Load Credit	Balance<
>Pay Bill	Exit<

Taking the above diagram as **MY ATM**, accessing funds from it requires some set conditions. Assuming you have a deposit of N35,000= in your account, to access your funds, the followings are the withdrawal guidelines:

- The minimum balance is N2,000=
- If withdrawal is greater than N10,000=, 5% deduction is made on your balance
- Maximum successive withdrawal that can be made in a day (i.e. within a loop) is N30,000=

Now, assuming you want to perform the underlisted withdrawal activities within a day (within a loop):

- i. Withdrawal1: N3,000=
- ii. Withdrawal2: N4,000=
- iii. Withdrawal3: N18,000=
- iv. Withdrawal4: N16,000=
- v. Withdrawal5: N7,000=

Don't you think you may run into error adopting manual calculation of the withdrawal process? Common, bring in Java and implement the withdrawal process subject to the given conditions.

(10mks)

2a. As a socialite, you will agree with me, that, there are several developed APPs or Platforms for exchanging info and greetings. However, have you noticed there is few or virtually no developed APP for exchanging pleasantries during child-birth? OK, if I am right, put on your thinking cap now and let's do something. Using Java GUI, code to develop an APP that allows user (mother, father, parent etc) to input the number of baby(ies) delivered. Design your app such that it is so sharp and fast to respond depending on the number of baby(ies) specified. For instance:

- If 0 or nil, prompt: 'You have not inputted anything to suggest you have given birth'
- If 1, prompt: 'Congrats, u have a baby'
- If 2, prompt: 'Wow, it is twins'
- If 3, prompt: 'Wonderful, 3 – how will you carry?'
- If 4 or 5: prompt: 'I was told you delivered 4' or 'I was told.....5' as the case may be.
- If 6, prompt: 'This is a miracle'
- If 7, prompt: 'I can't believe this'
- Else, prompt: 'This is beyond me – can someone explain this to me, n babies?'

(14mks)

b. Few weeks ago, we witnessed an unbelieving but appreciable power supply. Recently, the testimony has changed even in the face of CHANGE. Develop a Java GUI **Opinion Poll App (OPA)** to capture the view/stand of the Akungba Community as to whether or not the Private Power Holding Company should go and the Government-owned Power Holding Company restored. (6mks)

3a. A pot contains 14 figures, our intention was to access the largest and the smallest data in this floating set of data; unfortunately, the pot owner got it closed/locked. He however permitted we create 14 memory location spaces where he can help to store these unknown data, then we go ahead to compute for the largest and the smallest. Use Java to unlock this mystery.

(10mks)

b. 'I need an MTN recharge card, please help generate with your JAVA code'. Take ur pay → (4mks)

c. The game of ludo is a game possibly played by four (4). Allow the players to play by throwing only single dice, throwing it 20 times each, after which you bring the game to an end. Give the outcome of the game by reporting only the LOSER (the one with the least throw). (6mks)

4a. A Philosopher idealized a **SUCCESS READING GAUGE (SRG) Model**. He formulated that for a student to be successful in any semester exam, the following average data should be met:

- Sleeping hours: 4hrs/day
- Reading hours: 16hrs/day
- Extra Curricular: 4hrs/day

Assuming the followings exist for all students:

*Sleeping Varieties: Morning siesta, Afternoon rest, and Evening sleep

*Reading Varieties: Dew study, Morning study, Afternoon digest, Night class, and Midnight oil

*Extra-Curricular Varieties: Playtime, Fun-time, Fellowship hour, Cool-off time

Taking a class size of 55, capture the above varieties time (in hours) for each student and compare the accumulation with the given threshold values of the philosopher. Output the result of your comparison by specifying the students that meet up with the standard and those that fall short. (10mks)

b. In a typical boxing contest, several judges handled fights between two boxers. Develop a JAVA SCANNER **Boxing Bout App (BBA)** that handles a 12-round bout between two boxers, with three (3) judges in attendance. Declare (i) the points gained by each fighter for each round, (ii) the average points gathered by each fighter at the end of the 12-rounds, and (iii) declare the winner assuming the fight did not end in knock out.

(10mks)