

Technology-enhanced Learning - Activity Plan

Name: *Iroshini Ratnapala*

Grade / Course: Introduction to C - SLOCS1-A

Length of Activity: *3 hours*

Lesson Summary:

Student will learn about the basics of C programming language and use the C codes to write simple program to solve a problem.

Lesson Objective:

To provide students hand-on practise to use basic codes in C language to solve simple problems.

Resources/Technology – Teacher

- Interactive Whiteboard
- Presentation
- SCORM based interactive learning materials

Online Resources

- Access to Moodle e-course
- Access to online coding environment - <https://www.tutorialspoint.com/codingground.htm>
- Online discussion forum
- Brainstorming activities for each session
- Youtube videos

Resources/Technology – Students

- Practice quizzes
- Assessments
- Lab classes with eclipse IDE environment

Intended Curriculum Learning Outcomes

- Describe the structure of a simple programme
- List the items in a C program and explain its functionality.
- Add comment line/lines to an existing programme
- List and explain the data types
- Use a correct identifier to declare a variable
- Initialise and assign a value to a variable
- Write a C code to read input
- Write a C code to display the output
- Write the codes to get an organised data input and output screen

Instructional Activities

Teacher will use presentation, whiteboard and learning materials to explain the subject matters. (1.5 hrs)

Students are required to complete the video tutorials, practice quizzes, games, assessments and assignments. (1.5 hrs)

Learner Assessment

Students will complete the following assignment.

Introduction to C - SLOCS1-A

Assignment

- 1) Write a C program to print the following in the screen.

C PROGRAMMING
This is my first C program. I like it.
Thank you.

- 2) Write a C program to read three integers from the user with the prompt and print the average of those three numbers.
- 3) Write a C Program to calculate the volume and area of a sphere using the following formulae.

$$V = 4 \pi r^3 / 3$$

$$A = 4 \pi r^2$$

V = volume

A = Area

r = radius, should be an input for the program.

The output should display as follows.

Volume of the Sphere = {value}

Area of the Sphere = {value}

- 4) The following formula is used to calculate the future accumulation in a bank account after n number of years.

$$F = P (1 + I)^N$$

Where F = future accumulation of money

P = money deposited initially (principal amount)

I = interest rate

N = No of years

Write a C program to calculate F value when the other values are given. That program should read the values for P, I (as a percentage), N and should display the future accumulation money will be given for that account.

- 5) Write a C program to calculate real roots (x1 and x2) of the quadratic equation

$$ax^2 + bx + c = 0$$

using the quadratic formula.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

6) Write a C program to generate the following “pyramid” of digits, using nested loops.

```
1
212
32123
4321234
543212345
```

{**Hint:** Your program prints five lines. Each line consists of three parts. The first part comprises the spaces before the numbers; the second part, the leading numbers, such as 3 2 1 on line 3; and the last part, the ending numbers, such as 2 3 on line 3. – Use *for* loops}

7) Write a C program to print the following menu, and perform the selected mathematical calculation.

<p style="text-align: center;">Mathematical Calculator – Integer Values</p> <p>1 – Addition 2 – Subtraction 3 – Multiplication</p> <p>Please Enter your Choice : -</p> <p>Enter operand 1 :-</p> <p>Enter operand 2 :-</p>
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The output should be printed as follows:
(If the user gives 1, 12, and 78 as input)

<p>Answer</p> <p>12 + 78 = 90</p>

{**Hint:** use switch statement}

8) Write a C Program to get the user’s Name, Birth place and age as the Input and the output should be printed as follows.

<p>Personal Details</p> <p>Name : {name}</p> <p>Birth Place : {birth place}</p> <p>Age : {age}</p> <p>Thank you for providing the details.</p>
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{**Hint:** use an array to input the name}