National University of Computer and Emerging Sciences Chiniot-Faisalabad Campus



Lab 03

CL2006 – Operating System - Lab

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| Lab Instructor | Juhinah Batool |
| Semester | Fall 2024 |

**FAST School of Computing**

**Department of AI & DS**

**Instructions**

1. Make a PDF document with the convention “ROLLNO\_ LAB#\_ SECTION” and put all your source code and snapshots of its output in it.

2. Plagiarism is strictly prohibited, if you take a code snippet off the internet, mention its reference.

3. Do not discuss solutions with one another. Copying the solution from any source can lead to ZERO marks.

**Lab Tasks**

**Task 1**

Write a script that prompts the user for their first name, last name, and favorite color. Combine this information with your student ID to create a personalized greeting message. The message should be in the format:

*"Hello, [First Name] [Last Name]! Your favorite color is [Favorite Color], and your student ID is [Student ID]. Welcome!"*

After displaying the message, the script should ask the user if they would like to enter another set of information. If the user says "yes," repeat the process. If they say "no," end the script with a goodbye message.

**Task 2**

Create a calculator that allows the user to:

* Add
* Subtract
* Multiply
* Divide
* Find the remainder (Modulus)

Additionally, allow the user to input a custom operation by providing a mathematical expression (e.g., 2 + 3 \* 5). The calculator should then evaluate this expression and display the result.

The calculator should:

1. Ask the user to input two numbers.
2. Display the list of basic operations (Addition, Subtraction, Multiplication, Division, Modulus) and a special option to "Enter a custom expression."
3. If the user selects a basic operation, perform the operation and display the result.
4. If the user chooses to enter a custom expression, prompt them to input the expression directly (e.g., 2 + 3 \* 5). Evaluate and display the result.

After displaying the result, ask the user if they want to perform another calculation. If they say "yes," repeat the process. If they say "no," end the script with a goodbye message.

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| Task 3 |

Create a Bash script that takes 3 numbers as command-line arguments. The script should:

1. Reverse the order of the digits in each of the three numbers individually. For example, if the input number is 123, the output should be 321.
2. Display the reversed numbers on the screen, each on a new line.

If fewer than 3 numbers are provided as arguments, the script should display an error message indicating that exactly 3 numbers are required.

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| Task 4 |

Create a Bash script that takes 2 numbers from the user as input. The script should:

1. Calculate the Euler’s Totient function (φ) value for each of the two numbers. Euler's Totient function φ(n) is defined as the number of integers up to n that are relatively prime to n.
2. Print the φ(n) value for each number along with a message indicating whether the number is even or odd.

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| Task 5 |

Create a Bash script which will print a message based upon which day of the

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Week it is (“Happy day” for Wednesday, “blessed” for Friday etc.) using a switch statement.

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| Task 6 |

Take the two numbers from the user and apply logical operators (And, OR, NOT) both the number should be greater than the 500 and less than 1000