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BSCS-5th Semester

OS Lab Tasks

LAB # 10

Submitted to:

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Task 1

Write a script that checks if a file named **data.txt** exists or not.

```
student@student-virtual-machine:~$ nano check_file.sh
student@student-virtual-machine:~$ chmod +x check_file.sh
student@student-virtual-machine:~$ ./check_file.sh
File data.txt does not exist.
```

```
#!/bin/bash

# Check if the file 'data.txt' exists
if [ -e data.txt ]; then
  echo "File data.txt exists."
else
  echo "File data.txt does not exist."
fi
```

Task 2

Ask the user to enter a number and determine if it's even or odd

```
student@student-virtual-machine:~$ nano even_or_odd.sh
student@student-virtual-machine:~$ chmod +x even_or_odd.sh
student@student-virtual-machine:~$ ./even_or_odd.sh
Enter a number: 3
3 is odd.
```

```
#!/bin/bash

# Ask the user to enter a number
read -p "Enter a number: " num

# Check if the input is a valid number (optional, but good practice)
if ! [[ "$num" =~ ^-?[0-9]+$ ]]; then
  echo "That's not a valid integer."
  exit 1
fi

# Use modulo to determine even or odd
if [ $((num % 2)) -eq 0 ]; then
  echo "$num is even."
else
  echo "$num is odd."
fi
```

Task 3

Ask the user for a score (0-100) and print the corresponding grade:

- 90+: A
- 80-89: B
- 70-79: C
- 60-69: D
- Below 60: F

```
student@student-virtual-machine:~$ ./grade_checker
Enter your score (0-100): 79
Grade: C
student@student-virtual-machine:~$ nano grade_checker.c
student@student-virtual-machine:~$ gcc grade_checker.c -o grade_checker
```

```c
#include <stdio.h>

int main() {
    int score;

    printf("Enter your score (0-100): ");
    scanf("%d", &score);

    if (score >= 90) {
        printf("Grade: A\n");
    } else if (score >= 80) {
        printf("Grade: B\n");
    } else if (score >= 70) {
        printf("Grade: C\n");
    } else if (score >= 60) {
        printf("Grade: D\n");
    } else {
        printf("Grade: F\n");
    }

    return 0;
}
```

Task 4

Take two numbers and an operator (+, -, *, /) from the user and perform the operation.

```
student@student-virtual-machine:~$ nano calculator.c
student@student-virtual-machine:~$ gcc calculator.c -o calculator
student@student-virtual-machine:~$ ./calculator
Enter first number: 7
Enter an operator (+, -, *, /): +
Enter second number: 4
Result: 11.00
```

```c
#include <stdio.h>

int main() {
    float num1, num2;
    char operator;

    // Get input from user
    printf("Enter first number: ");
    scanf("%f", &num1);

    printf("Enter an operator (+, -, *, /): ");
    scanf(" %c", &operator);  // space before %c clears any leftover newline

    printf("Enter second number: ");
    scanf("%f", &num2);

    // Perform operation
    switch(operator) {
        case '+':
            printf("Result: %.2f\n", num1 + num2);
            break;
        case '-':
            printf("Result: %.2f\n", num1 - num2);
            break;
        case '*':
            printf("Result: %.2f\n", num1 * num2);
            break;
        case '/':
            if(num2 != 0)
                printf("Result: %.2f\n", num1 / num2);
            else
                printf("Error: Division by zero!\n");
            break;
        default:
            printf("Invalid operator!\n");
    }

    return 0;
}
```