Task 8: File Operations in C

1. Objective

The objective of this task is to demonstrate basic file handling operations in C programming. The program performs file opening, writing, reading, and closing using standard C file handling functions.

2. Problem Statement

Write a C program to:
 • Open an existing file named "data.txt". If it does not exist, create it.
 • Write the string "Hello, File Handling in C!" to the file.
 • Move the file pointer to the beginning of the file.
 • Read the contents of the file.
 • Display the contents on the console.
 • Close the file.

3. C Program Code

```c
#include <stdio.h>

int main() {
    FILE *file;
    char buffer[100];

    // Open file in write+read mode. Creates file if it does not exist
    file = fopen("data.txt", "w+");

    if (file == NULL) {
    printf("Error opening file.\n");
    return 1;
    }

    // Write data to file
    fprintf(file, "Hello, File Handling in C!");

    // Move file pointer to beginning
    fseek(file, 0, SEEK_SET);

    // Read data from file
    fgets(buffer, sizeof(buffer), file);
```

```
    // Print data to console
    printf("Data read from file: %s\n", buffer);

    // Close file
    fclose(file);

    return 0;
}
```

4. Explanation of the Code

• FILE *file: Declares a file pointer.
• fopen(): Opens the file in "w+" mode (write and read). If the file does not exist, it is created.
• fprintf(): Writes text to the file.
• fseek(): Moves the file pointer back to the beginning of the file.
• fgets(): Reads data from the file.
• printf(): Displays the file content on the console.
• fclose(): Closes the file and releases resources.

5. Output

```
  GNU nano 6.2
Hello, File Handling in C!




















File Name to Write: data.txt
```

6. Conclusion

This task demonstrates basic file handling in C. Such operations are widely used for data storage, logging, and configuration handling in real-world applications.