Department of Computer Science and Engineering
Premier University

CSE 454: Compiler Construction Laboratory

Lab Report 01: A program to read a C program from source file and copy it in a text file

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Remarks

Experiment No 01

Experiment Name

A program to read a C program from a source file and copy it into a text file.

Objective

The objective of this experiment is to understand and implement file handling operations in C programming. This includes opening files, reading data from a source file, writing data into a destination file, and properly closing files. The experiment also helps in understanding character-wise file copying using standard input/output functions.

Algorithm

1. Start the program.
2. Declare file pointers for source and destination files.
3. Open the source file in read mode.
4. Open the destination file in write mode.
5. Check whether both files are opened successfully.
6. Read characters from the source file one by one.
7. Write each character into the destination file.
8. Repeat the process until the end of the source file is reached.
9. Close both the files.
10. Display a success message.
11. End the program.

Source Code

```
#include <stdio.h>

int main() {
    FILE *source, *target;
    char ch;

    source = fopen("source.c", "r");
    target = fopen("output.txt", "w");

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

    while ((ch = fgetc(source)) != EOF) {
        fputc(ch, target);
    }

    printf("File copied successfully.\n");

    fclose(source);
    fclose(target);

    return 0;
}
```

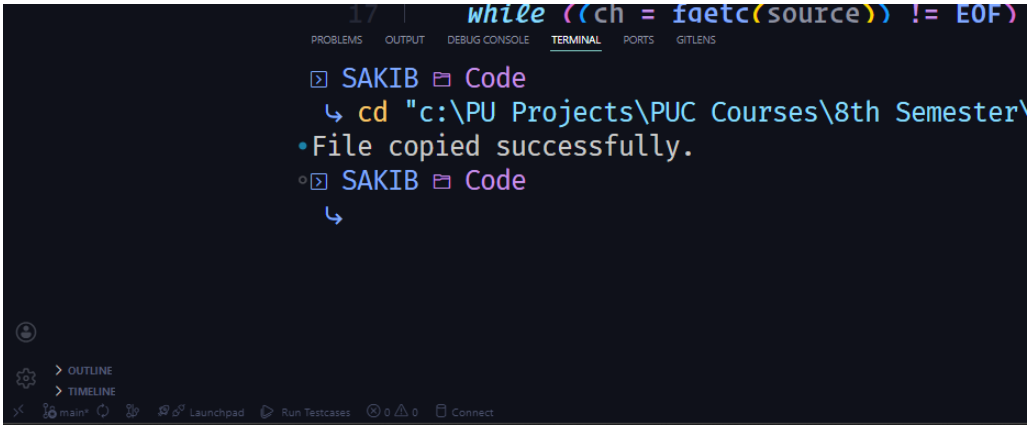
Input

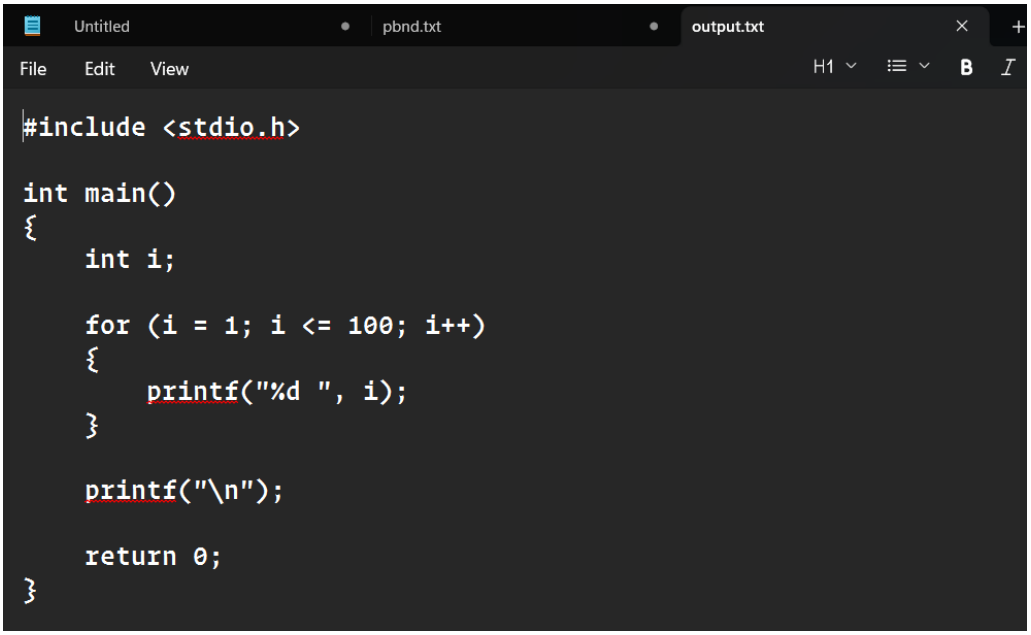
A C source file named `source.c` containing a valid C program is provided as input to the program.

Output

The contents of the input file `source.c` are copied successfully into the output file `output.txt`.

Output Screenshot:





Discussion

This experiment demonstrates the use of file handling concepts in C programming. Functions such as `fopen()`, `fgetc()`, `fputc()`, and `fclose()` were used to perform file operations. Character-by-character copying ensures accurate duplication of file contents. Proper error handling was implemented to check whether files are opened successfully. This experiment provides a strong foundation for understanding more advanced file operations in C.