



Problem Solving With C - UE24CS151B

File IO – Using Redirection Operator

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PROBLEM SOLVING WITH C

File IO – Using Redirection Operator



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Introduction

- A program in C allows **reading from or writing to files** instead of standard input/output (keyboard/screen).
- The **< operator is used in the command line** (not in C code) to **redirect input** from a file to the program's stdin.
- To feed input data from a file to a source code without changing the source code.
- Very useful in **Testing and Automation**.

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Execution Steps

- `./a.out < input.txt` OR `a.exe < input.txt`
- Run the program and take input from input.txt instead of the keyboard.
- If the file doesn't exist, the shell throws an error and the program does not run.
- Input redirection operator (<) is handled before the program starts.

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Sample C code Execution: Input given by the user once the code is run

```
#include <stdio.h>

int main() {
    int num;
    printf("Reading numbers from input...\n");
    while (scanf("%d", &num) != EOF) {
        printf("Read number: %d\n", num);
    }
    return 0;
}
```

```
C:\Users\Dell>a
Reading numbers from input...
56
Read number: 56
-6
Read number: -6
34
Read number: 34
Out of application
```

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Sample C code Execution: Input given through the file numbers.txt once the code is run. Use < and the file must be existing.

```
#include <stdio.h>

int main() {
    int num;
    printf("Reading numbers from input...\n");
    while (scanf("%d", &num) != EOF) {
        printf("Read number: %d\n", num);
    }
    return 0;
}
```

```
C:\Users\Dell>a < numbers.txt
Reading numbers from input...
Read number: 3
Read number: 23
Read number: 44
Read number: 77
Read number: -15
Read number: 40
Read number: -266
Read number: 78
Read number: 22
Read number: 66
Read number: 90
Read number: 189
Out of application
```

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Disadvantages

- **No Error Handling in Code:** If the file doesn't exist, your program won't even start. You can't check or handle the error inside your code.
- **Limited to Standard Input (stdin):** Only redirects stdin. Can't easily control multiple files or write to output files with this method.
- **Not Portable Across All Systems:** Works in Unix/Linux-based terminals, but may not behave the same in some IDEs or Windows environments.
- **Not Flexible for Dynamic File Names:** File name must be known and provided at command line.



THANK YOU

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