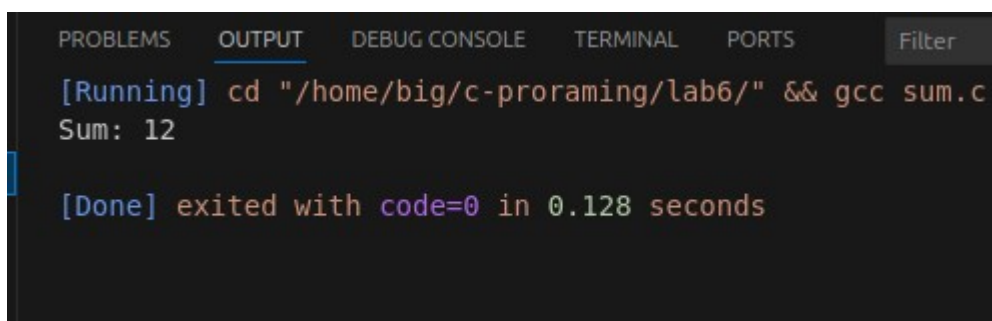


Lab VI (Functions)

-Kishor Neupane

1. Write a function `sum` that takes two integers as arguments and returns their sum. Call this function from the main function and print the result.

Output :

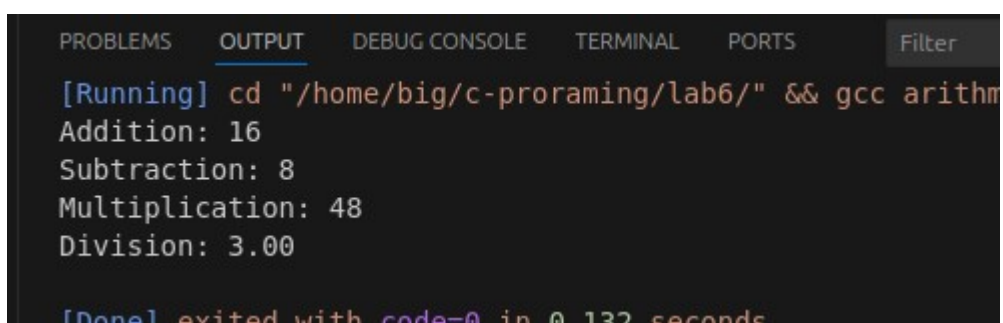


```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proraming/lab6/" && gcc sum.c
Sum: 12

[Done] exited with code=0 in 0.128 seconds
```

2. Write a program that demonstrates nesting of functions, where each function performs a specific arithmetic operation (addition, subtraction, multiplication, division) on two numbers.

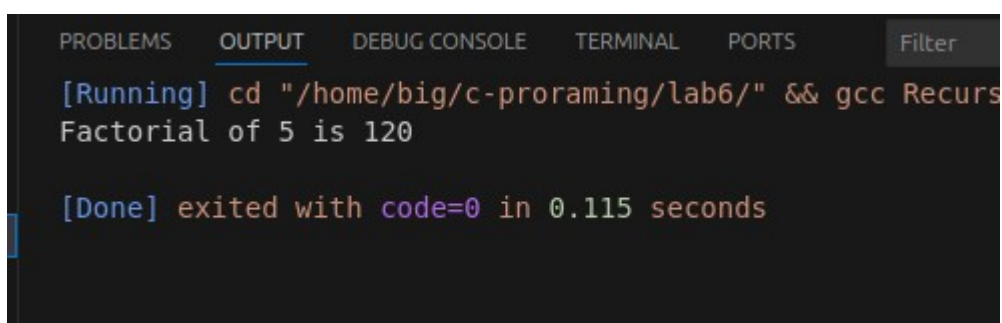
Output :



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proraming/lab6/" && gcc arithm
Addition: 16
Subtraction: 8
Multiplication: 48
Division: 3.00
[Done] exited with code=0 in 0.132 seconds
```

3. Write a recursive function factorial to calculate the factorial of a given integer. Use this function to find the factorial of 5.

Output :

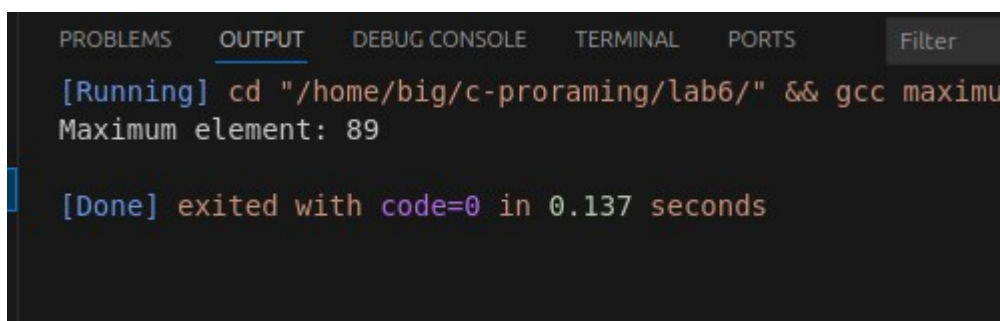


```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proramming/lab6/" && gcc Recurs
Factorial of 5 is 120

[Done] exited with code=0 in 0.115 seconds
```

4. Write a function `findMax` that takes an array of integers and its size as arguments and returns the maximum element in the array.

Output :

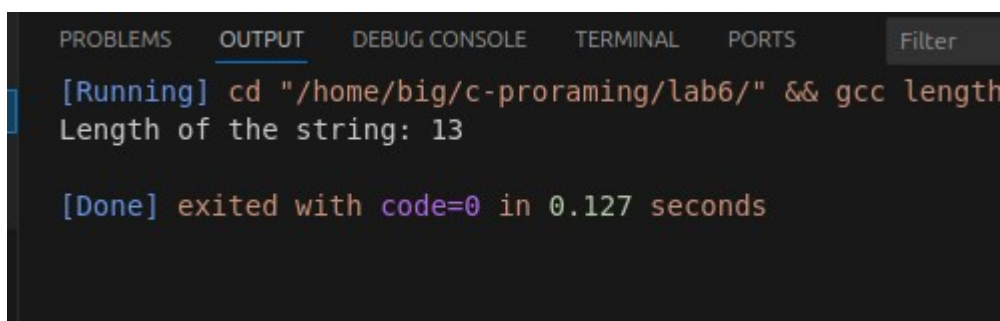


```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proraming/lab6/" && gcc maximu
Maximum element: 89

[Done] exited with code=0 in 0.137 seconds
```

5. Write a function `stringLength` that takes a string as an argument and returns its length.

Output :



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proramming/lab6/" && gcc length
Length of the string: 13

[Done] exited with code=0 in 0.127 seconds
```

6. Write a program that demonstrates passing arguments by address. Define a function swap that takes two integer pointers as arguments and swaps the values they point to. Print the swapped values from the main function.

Output :

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proramming/lab6/" && gcc swapa.
Before swap: x = 10, y = 20
After swap: x = 20, y = 10

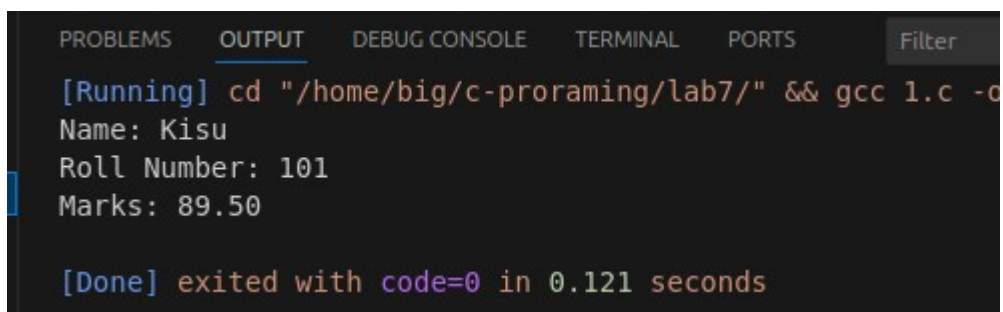
[Done] exited with code=0 in 0.128 seconds
```

Lab VII (Structure and Union)

-Kishor Neupane

1. Define a structure called Student with the following members: name, roll_number, and marks. Write a program to create a variable of type Student, initialize its members, and print them.

Output :



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proramming/lab7/" && gcc 1.c -o
Name: Kisu
Roll Number: 101
Marks: 89.50

[Done] exited with code=0 in 0.121 seconds
```

2. Define a structure called Employee with members emp_id, name, and salary. Write a program to create an array of 5 Employee structures, initialize them, and print the details of each employee.

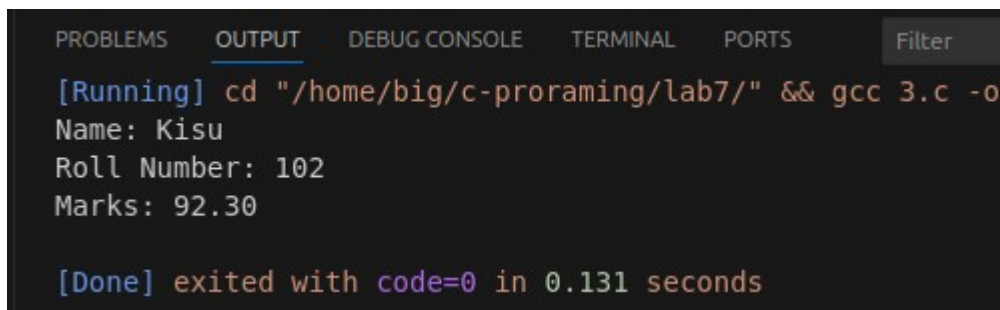
Output :



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proraming/lab7/" && gcc 2.c -o
Employee 1:
ID: 1
Name: Ram
Salary: 50000.00
```


3. Define a function `displayStudent` that takes a `Student` structure as a parameter and prints its details.

Output :

A screenshot of a code editor's output window. At the top, there are tabs labeled 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL', and 'PORTS'. The 'OUTPUT' tab is selected and underlined. To the right of the tabs is a 'Filter' button. The output text is as follows:

```
[Running] cd "/home/big/c-proraming/lab7/" && gcc 3.c -o  
Name: Kisu  
Roll Number: 102  
Marks: 92.30  
  
[Done] exited with code=0 in 0.131 seconds
```

4. Define a function `displayEmployees` that takes an array of Employee structures and its size as parameters, and prints the details of all employees.

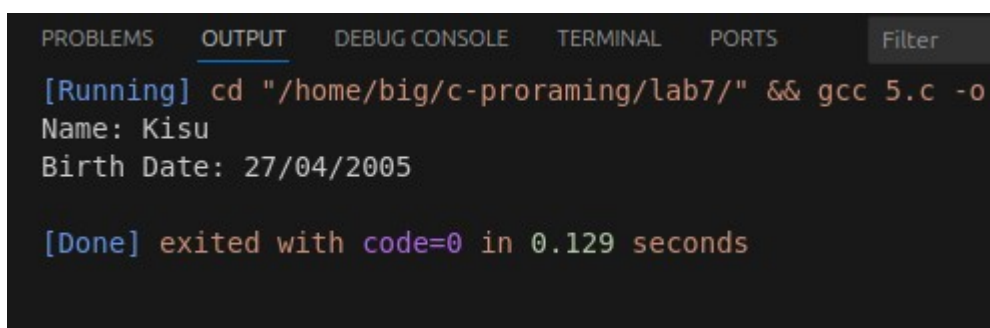
Output :

```
Employee 1:  
ID: 1  
Name: Ram  
Salary: 50000.00
```

```
Employee 2:  
ID: 2  
Name: Sita  
Salary: 55000.00
```

5. Define a structure called Date with members day, month, and year. Define another structure called Person with members name and birth_date of type Date. Write a program to create a Person structure and print its details.

Output :

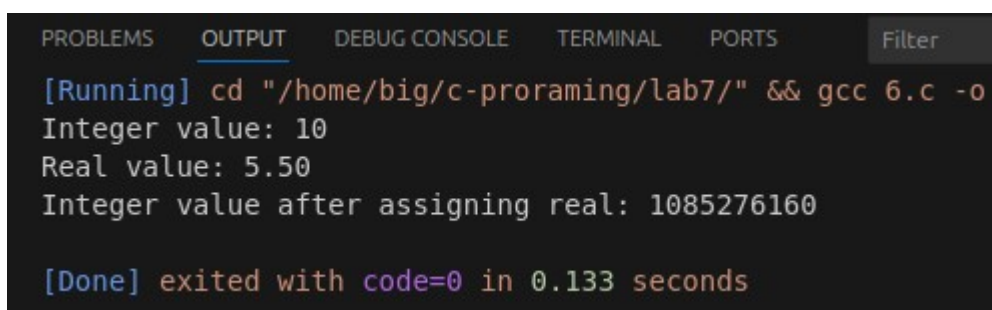


```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proramming/lab7/" && gcc 5.c -o
Name: Kisu
Birth Date: 27/04/2005

[Done] exited with code=0 in 0.129 seconds
```

6. Define a union called Number with members integer and real of types int and float respectively. Write a program to demonstrate the use of this union by storing an integer and a real number in it, and printing them.

Output :

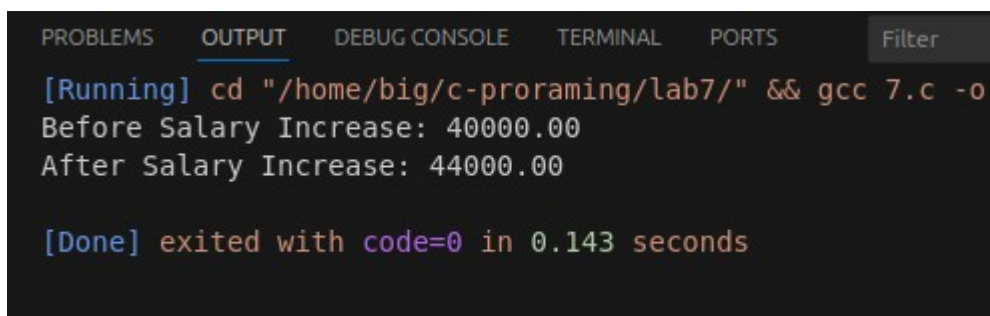


```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proramming/lab7/" && gcc 6.c -o
Integer value: 10
Real value: 5.50
Integer value after assigning real: 1085276160

[Done] exited with code=0 in 0.133 seconds
```

7. Define a function `changeSalary` that takes a pointer to an `Employee` structure and increases its salary by 10%. Use this function to update the salary of an employee.

Output :

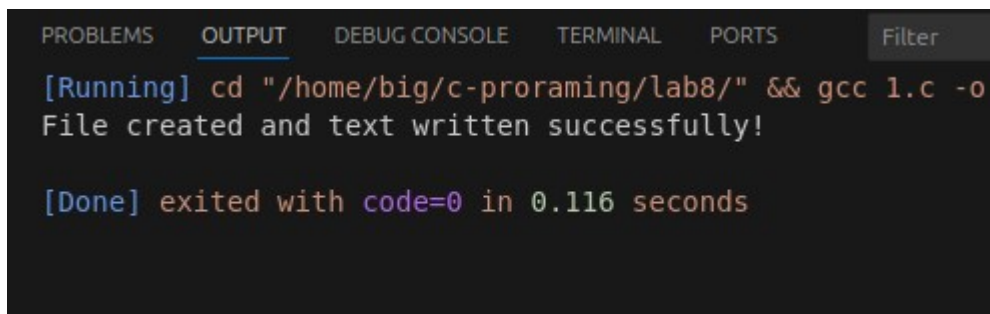


```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proraming/lab7/" && gcc 7.c -o
Before Salary Increase: 40000.00
After Salary Increase: 44000.00

[Done] exited with code=0 in 0.143 seconds
```

1. Write a program in C to create a file and write some text into it. Close the file and display a message indicating successful completion.

Output :

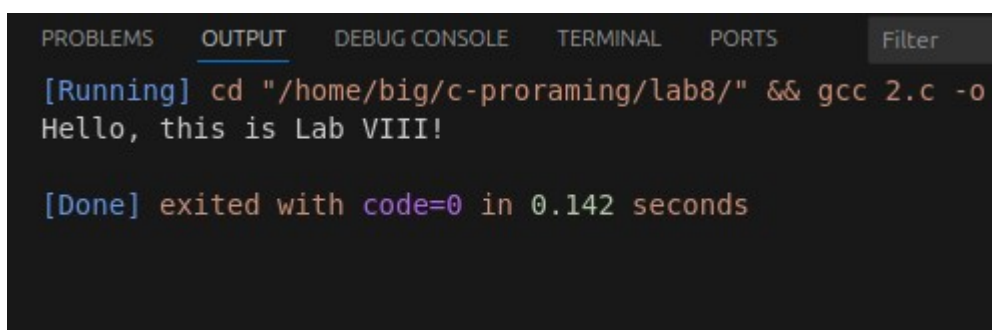


```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proramining/lab8/" && gcc 1.c -o
File created and text written successfully!

[Done] exited with code=0 in 0.116 seconds
```

2. Write a program in C to open an existing file and display its contents on the screen.

Output :



The screenshot shows a code editor with a dark background. At the top, there are tabs labeled 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL', 'PORTS', and 'Filter'. The 'OUTPUT' tab is selected. Below the tabs, the text '[Running] cd "/home/big/c-proramming/lab8/" && gcc 2.c -o' is displayed in a light blue font. Below this, the text 'Hello, this is Lab VIII!' is displayed in a light blue font. At the bottom, the text '[Done] exited with code=0 in 0.142 seconds' is displayed in a light blue font.

```
[Running] cd "/home/big/c-proramming/lab8/" && gcc 2.c -o
Hello, this is Lab VIII!

[Done] exited with code=0 in 0.142 seconds
```

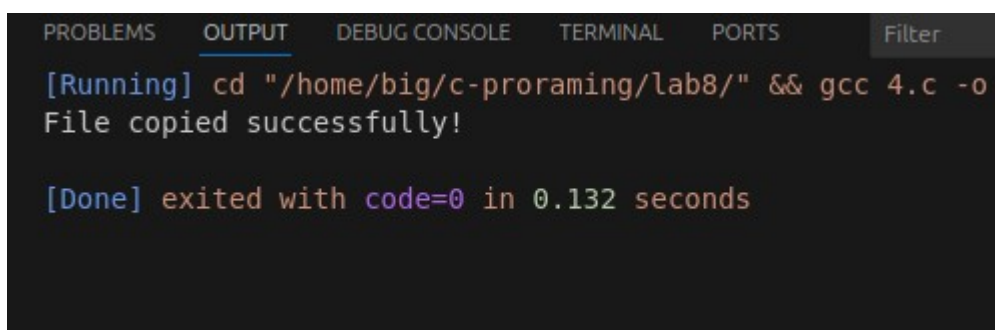
3. Write a program in C to append data to an existing file. Display the contents of the file before and after appending.

Output :

```
[Running] cd "/home/big/c-proramming/lab8/" && gcc 3.c -o  
Before appending:  
Hello, this is Lab VIII!  
  
After appending:  
Hello, this is Lab VIII!  
Appending new text!
```


4. Write a program in C to copy the contents of one file into another file.

Output :



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proramming/lab8/" && gcc 4.c -o
File copied successfully!

[Done] exited with code=0 in 0.132 seconds
```

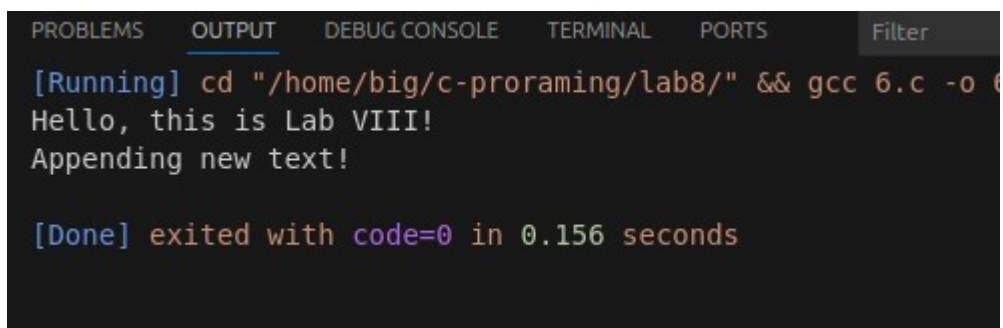
5. Write a program in C to read a file character by character and display the characters along with their ASCII values.

Output :

```
[Running] cd "/home/big/c-programing/lab8/" && gcc 5.c -o  
Character: H, ASCII: 72  
Character: e, ASCII: 101  
Character: l, ASCII: 108  
Character: l, ASCII: 108  
Character: o, ASCII: 111  
Character: ,, ASCII: 44  
Character: , ASCII: 32  
Character: t, ASCII: 116
```

6. Write a program in C to read a file line by line and display each line on the screen.

Output :



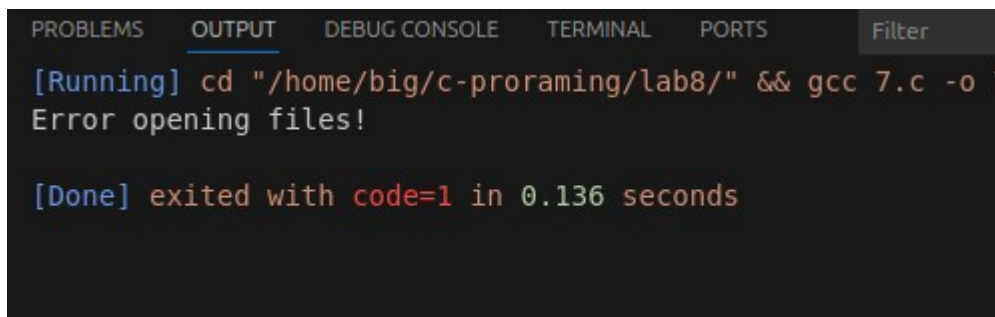
The screenshot shows a code editor with a dark background. At the top, there are tabs labeled 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL', 'PORTS', and a 'Filter' button. The 'OUTPUT' tab is selected. Below the tabs, the output of a program is displayed in a monospaced font. The output consists of three lines: a command prompt line, two lines of program output, and a completion message.

```
[Running] cd "/home/big/c-proraming/lab8/" && gcc 6.c -o 6
Hello, this is Lab VIII!
Appending new text!

[Done] exited with code=0 in 0.156 seconds
```

7. Write a program in C to read an integer from a file and calculate its square. Write the square to another file.

Output :

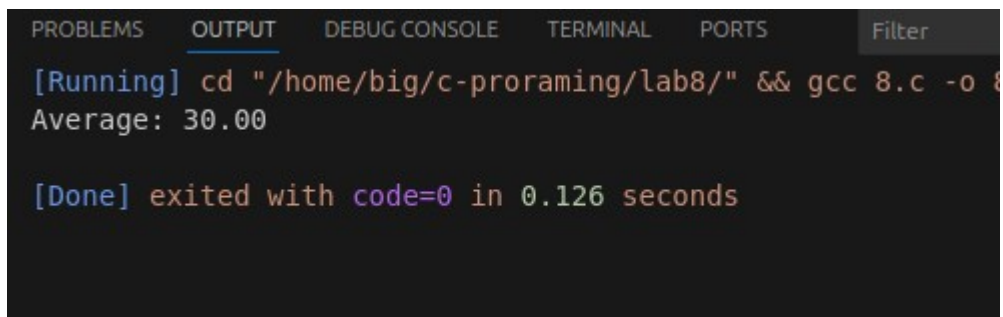
A screenshot of a code editor's output panel. The panel has tabs for 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL', 'PORTS', and a 'Filter' button. The 'OUTPUT' tab is selected. The text in the panel shows a command being executed: '[Running] cd "/home/big/c-proramming/lab8/" && gcc 7.c -o 7'. Below this, it says 'Error opening files!'. At the bottom, it says '[Done] exited with code=1 in 0.136 seconds'.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proramming/lab8/" && gcc 7.c -o 7
Error opening files!

[Done] exited with code=1 in 0.136 seconds
```

8. Write a program in C to create a file with random numbers and then read the numbers from the file and calculate their average.

Output :

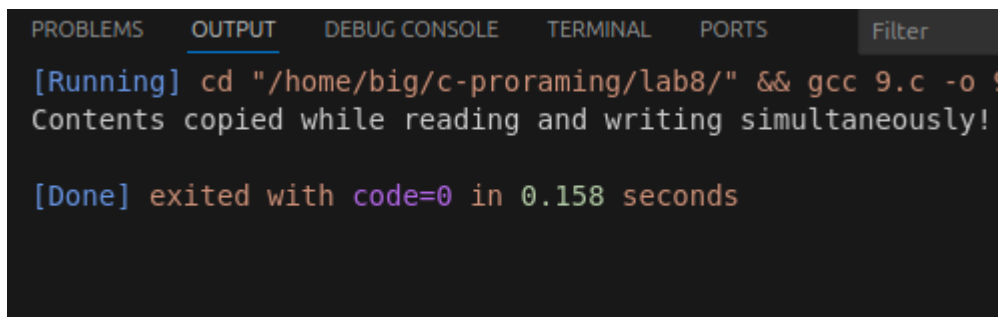
A screenshot of a code editor interface with a dark background. At the top, there are tabs labeled 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL', 'PORTS', and a 'Filter' button. The 'OUTPUT' tab is selected. Below the tabs, the text '[Running] cd "/home/big/c-proraming/lab8/" && gcc 8.c -o 8' is displayed in a light blue font. Below that, the text 'Average: 30.00' is displayed in a light blue font. At the bottom, the text '[Done] exited with code=0 in 0.126 seconds' is displayed in a light blue font.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  Filter
[Running] cd "/home/big/c-proraming/lab8/" && gcc 8.c -o 8
Average: 30.00

[Done] exited with code=0 in 0.126 seconds
```

9. Write a program in C to open a file in read mode and write mode simultaneously. Read from one file and write to the other file simultaneously.

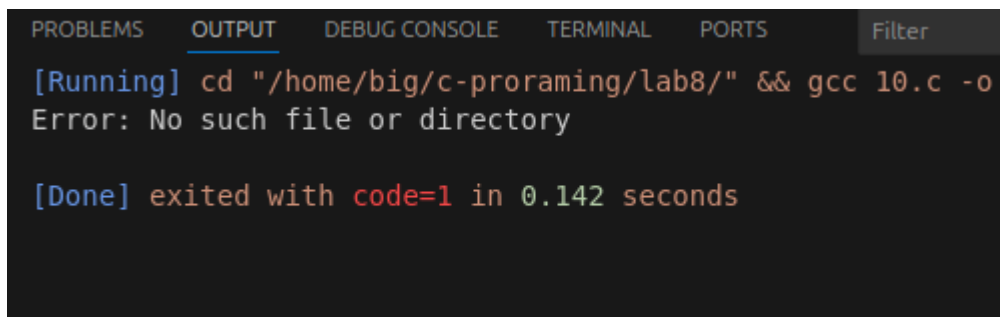
Output :

A screenshot of a code editor's output window. The window has a dark background with a light gray border. At the top, there are several tabs: 'PROBLEMS', 'OUTPUT' (which is selected and has a blue underline), 'DEBUG CONSOLE', 'TERMINAL', 'PORTS', and a 'Filter' button. The output text is as follows:

```
[Running] cd "/home/big/c-proraming/lab8/" && gcc 9.c -o $  
Contents copied while reading and writing simultaneously!  
  
[Done] exited with code=0 in 0.158 seconds
```

10. Write a program in C to demonstrate error handling in file operations. Handle errors such as file not found, permission denied, etc., and display appropriate messages.

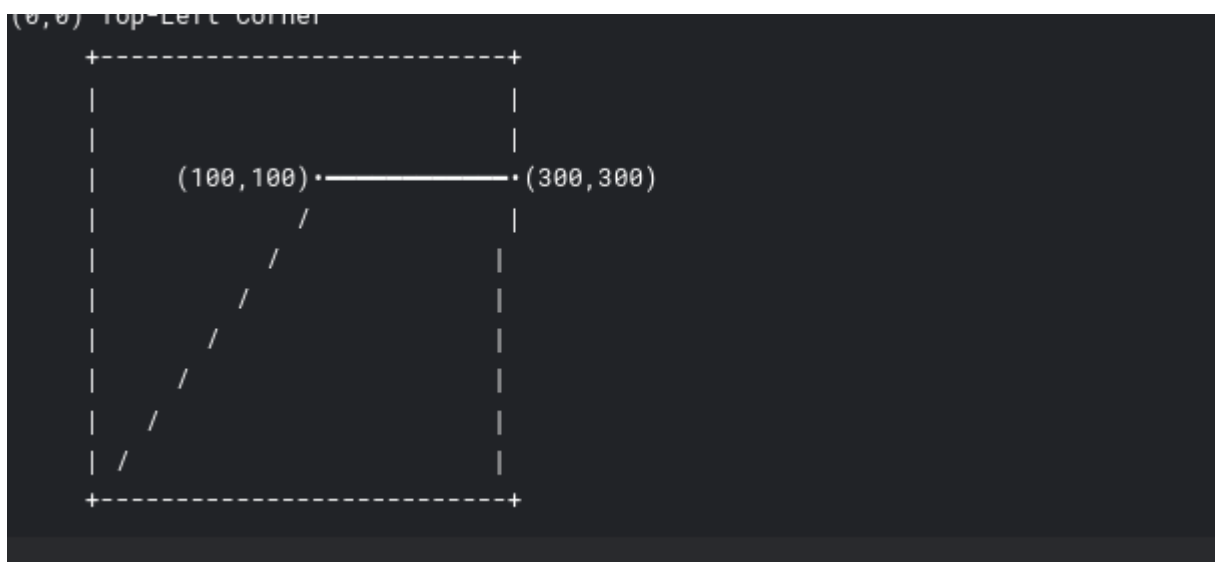
Output :

A screenshot of an IDE's output window. The window has a dark background with a light gray header bar containing tabs: PROBLEMS, OUTPUT (selected), DEBUG CONSOLE, TERMINAL, PORTS, and a Filter button. The output text is as follows:

```
[Running] cd "/home/big/c-proraming/lab8/" && gcc 10.c -o  
Error: No such file or directory  
  
[Done] exited with code=1 in 0.142 seconds
```

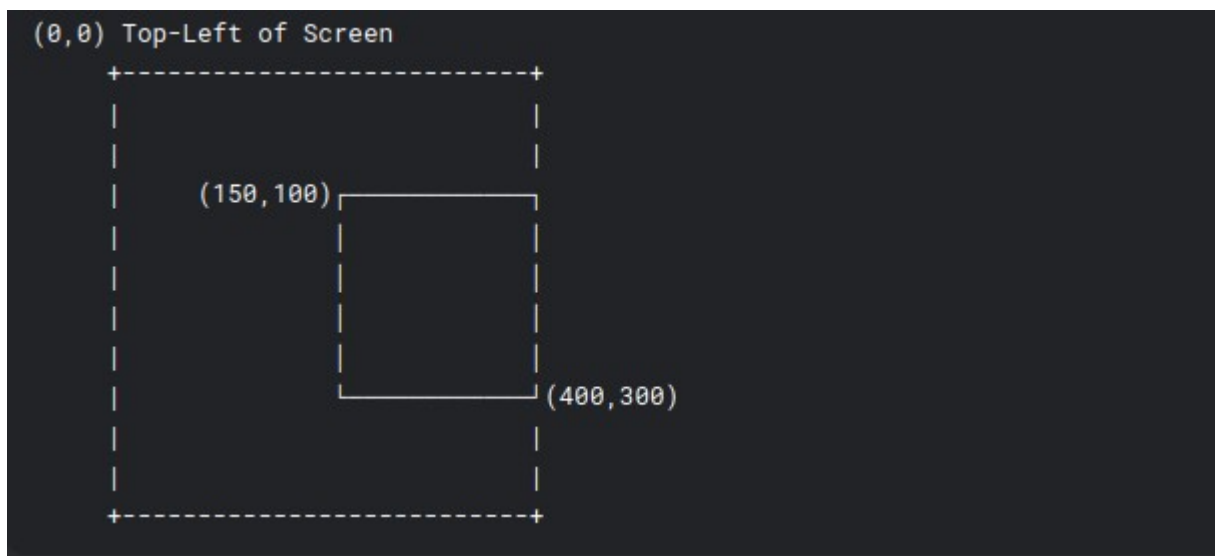
1. Write a program in C to draw a line.

Output :



2. Write a program to draw a rectangle.

Output :



3. Write a program to draw a circle in C.

Output :

