

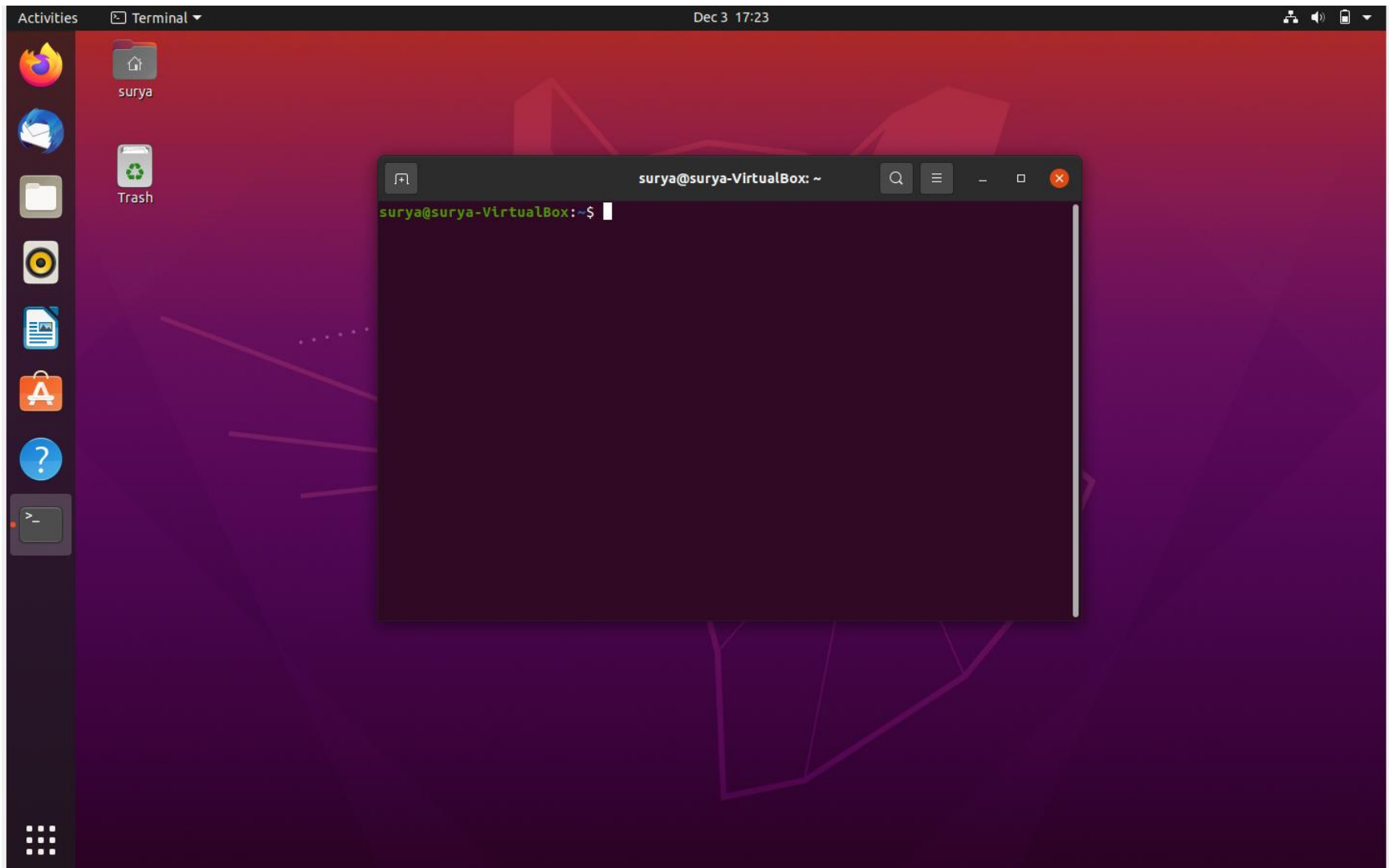
**MA144: Problem Solving and
Computer Programming**

Lecture-4

Pseudocode Examples

Lab Environment

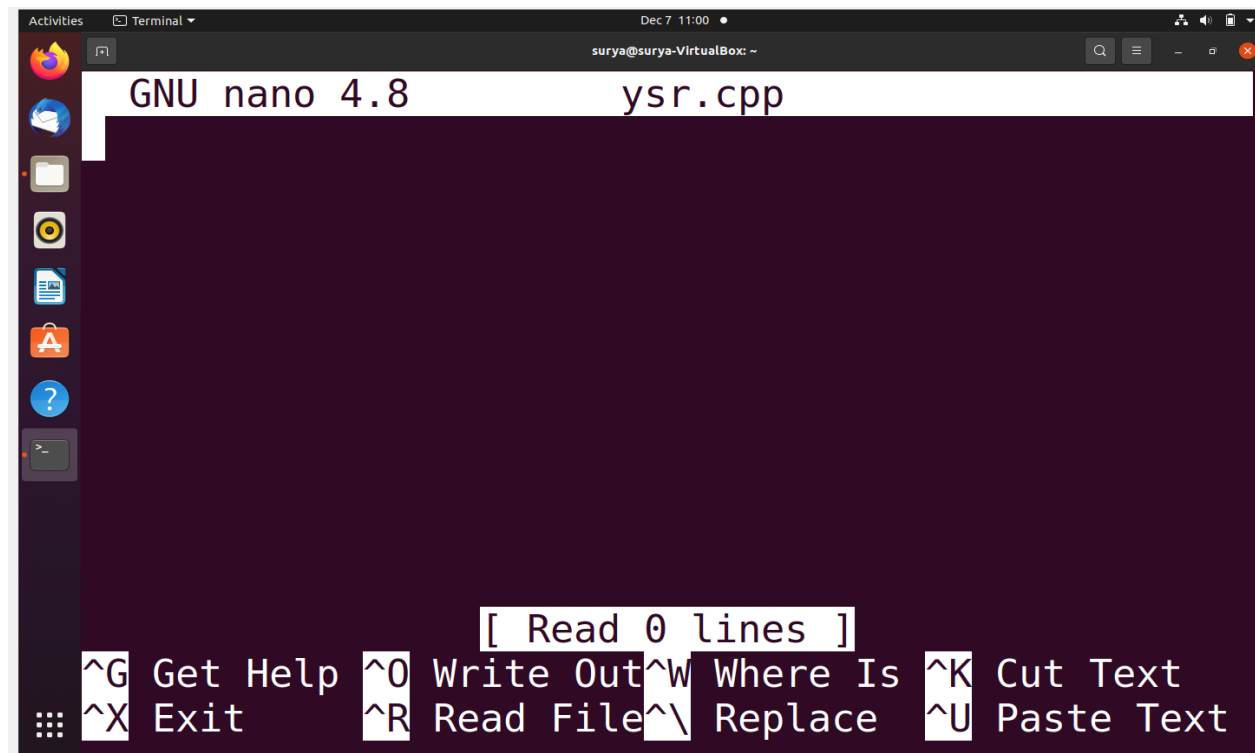
Step 1. Open up a terminal



Step 1. Open up a terminal contd...

- Type the command `nano <filename>.cpp`

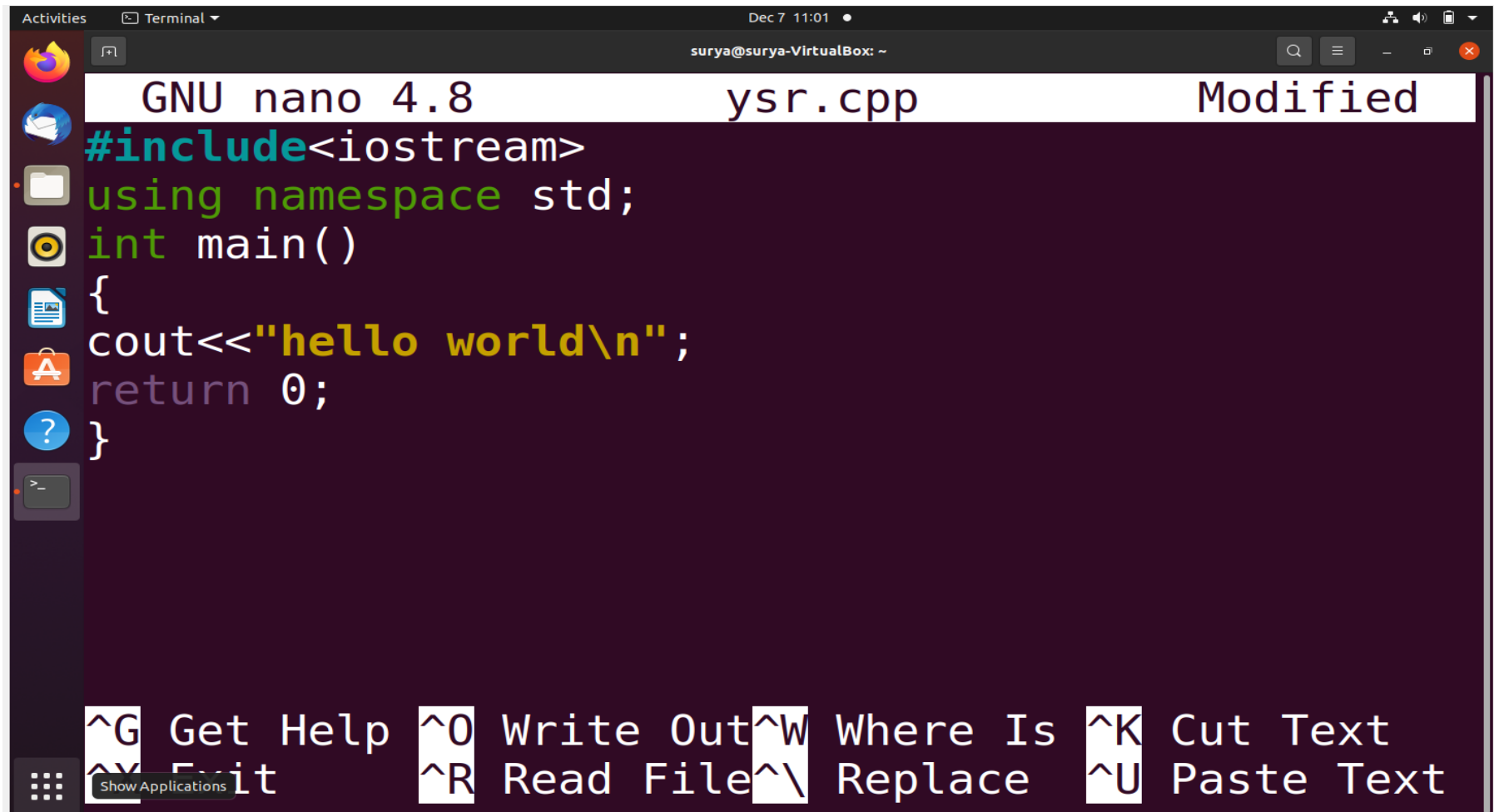
e.g., `nano ysr.cpp`
- Then press **enter**
- After pressing enter, Automatically **text editor** will appear.



```
Activities  Terminal  Dec 7 11:00  surya@surya-VirtualBox: ~
GNU nano 4.8  ysr.cpp
[ Read 0 lines ]
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text
^X Exit      ^R Read File  ^\ Replace  ^U Paste Text
```

Step 1. Open up a terminal contd...

- Write your program here and press **ctrl+o** to save the program and press **enter**. To return out from editor **ctrl+x**



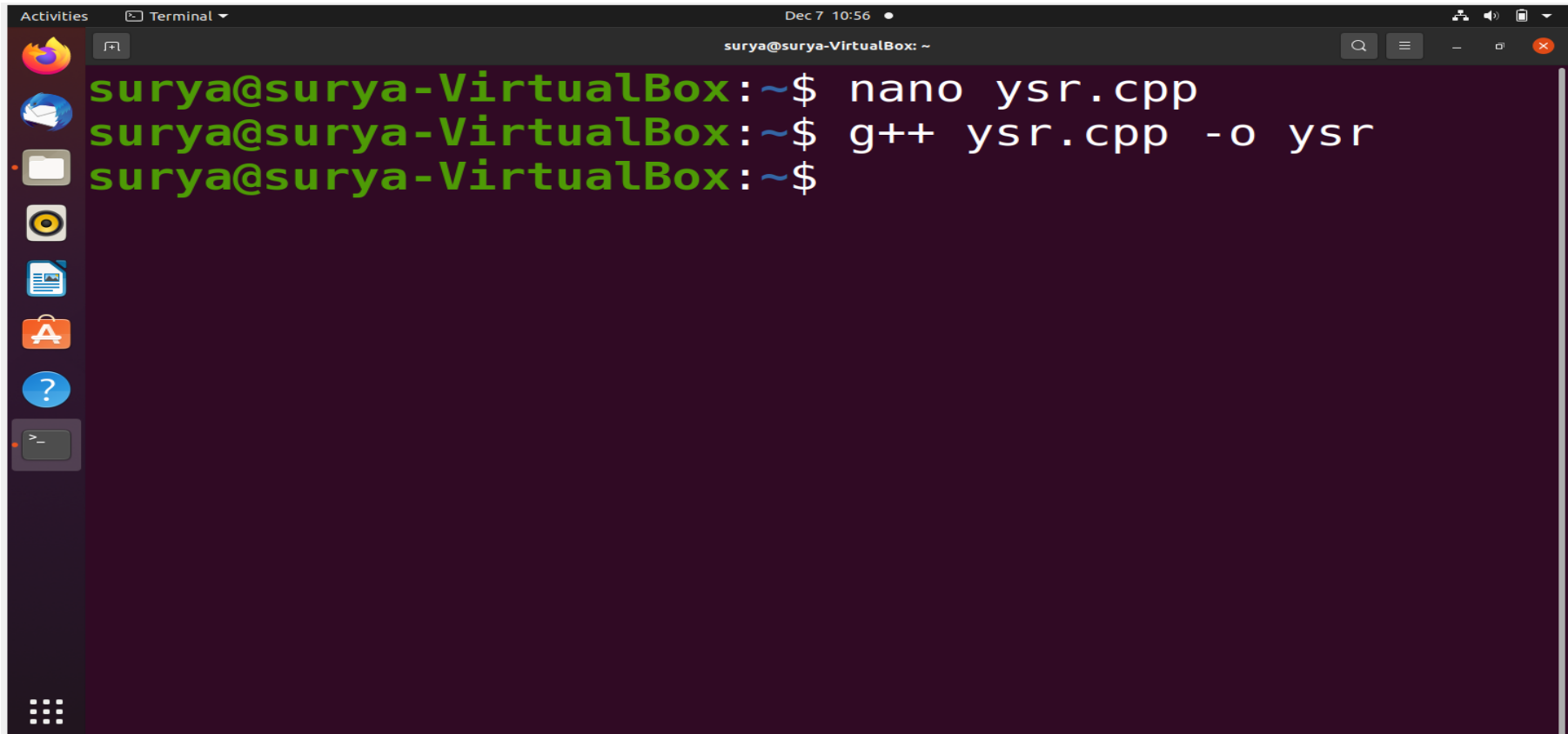
```
Activities Terminal Dec 7 11:01 surya@surya-VirtualBox: ~
GNU nano 4.8 ysr.cpp Modified
#include<iostream>
using namespace std;
int main()
{
cout<<"hello world\n";
return 0;
}
^G Get Help ^O Write Out ^W Where Is ^K Cut Text
^Y Exit ^R Read File ^\ Replace ^U Paste Text
```

Step 2. Compile the program

- Type the command

g++ <filename>.cpp -o <filename>

e.g., **g++** ysr.cpp -o ysr

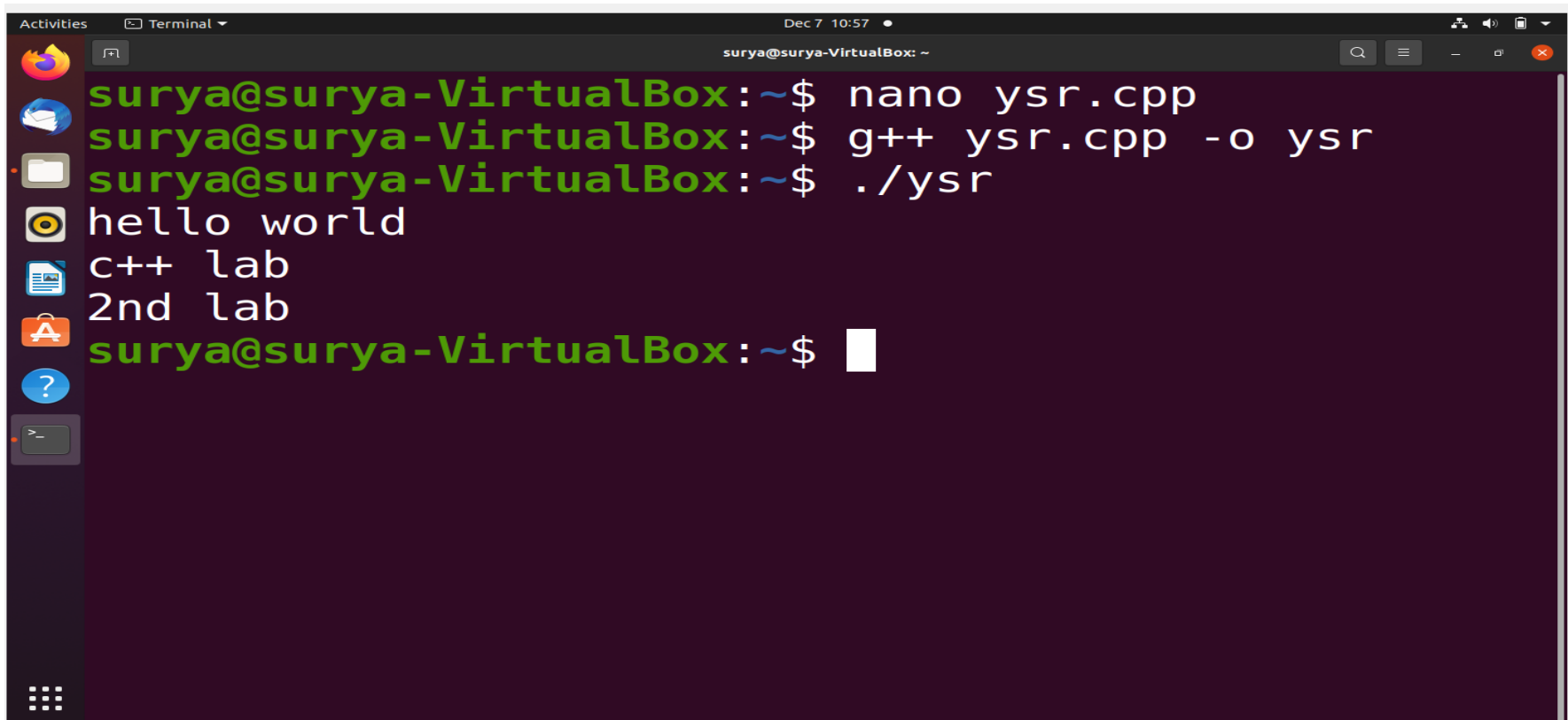


The screenshot shows a terminal window titled 'Terminal' with a dark background. The prompt is 'surya@surya-VirtualBox: ~'. The user has entered three commands: 'nano ysr.cpp', 'g++ ysr.cpp -o ysr', and a blank line. The terminal output shows the prompt 'surya@surya-VirtualBox: ~\$' for each command. The left sidebar of the terminal window shows various application icons, including Firefox, LibreOffice, and the Dash icon. The top status bar shows the date and time 'Dec 7 10:56'.

```
Activities Terminal
surya@surya-VirtualBox: ~$ nano ysr.cpp
surya@surya-VirtualBox: ~$ g++ ysr.cpp -o ysr
surya@surya-VirtualBox: ~$
```

Step 3. Execute the program

- Type the command **`./<filename>`**
e.g., **`./ysr`**
- Observe the output



The screenshot shows a terminal window titled "Terminal" with a dark background. The prompt is `surya@surya-VirtualBox: ~`. The user has entered the following commands and received the following output:

```
surya@surya-VirtualBox:~$ nano ysr.cpp
surya@surya-VirtualBox:~$ g++ ysr.cpp -o ysr
surya@surya-VirtualBox:~$ ./ysr
hello world
c++ lab
2nd lab
surya@surya-VirtualBox:~$
```

The output consists of three lines: "hello world", "c++ lab", and "2nd lab". The terminal window also shows a sidebar with various application icons on the left and system status icons on the right.

Summary

1. In terminal, type `nano ysr.cpp` then enter
 - Write a program in text editor
 - Press `ctrl+o` to save the program and press `enter`
 - Press `ctrl+x` to exit the text editor
2. Type `g++ ysr.cpp -o ysr` to compile the program
3. Type `./ysr` to run the program

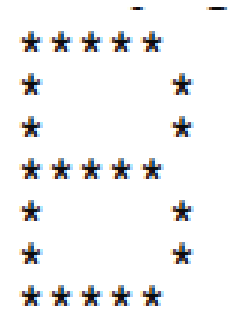
2. Type `g++ ysr.cpp` to compile
 3. Type `./a.out` to run

Sample Program

```
#include <iostream>
using namespace std;
int main()
{
    cout<< " *      *\n";
    cout<<" *      *\n";
    return 0;
}
```

Lab 1: Assignment (6-12-2022)

1. Write a program to print your details like Name, Roll No, Branch, Address, etc.

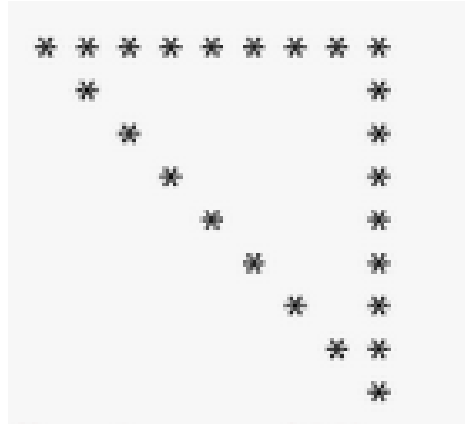


3. Write a program that prints the block letter “W” as

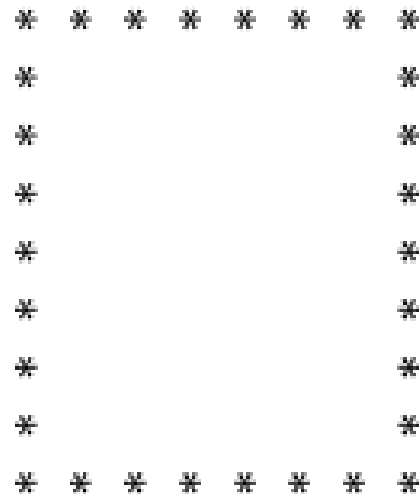


- #### 4. Print a multiplication table of 10 consisting of 10 rows

5. Write a program to print the following pattern



6. Write a program to print the following pattern



Pseudocode Examples

1. Find the average of given four numbers
2. Find a profit or loss
3. Print a multiplication table of a given number
4. Calculate factorial of a given number
5. Find the maximum of more than three numbers
6. Exchange the values of two variables
7. Find gcd of two numbers
8. Compute $a^k \bmod n$
9. Check whether the given number is prime or not
10. Locate all the prime numbers between 1 and the given number n
11. Find lcm of two numbers

Next Lecture

Flowcharts