

COM1001 TUTORIAL-II

05.03.2021

- Basic Ubuntu Commands
- Writing an example C code, and execution.

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What is Terminal?

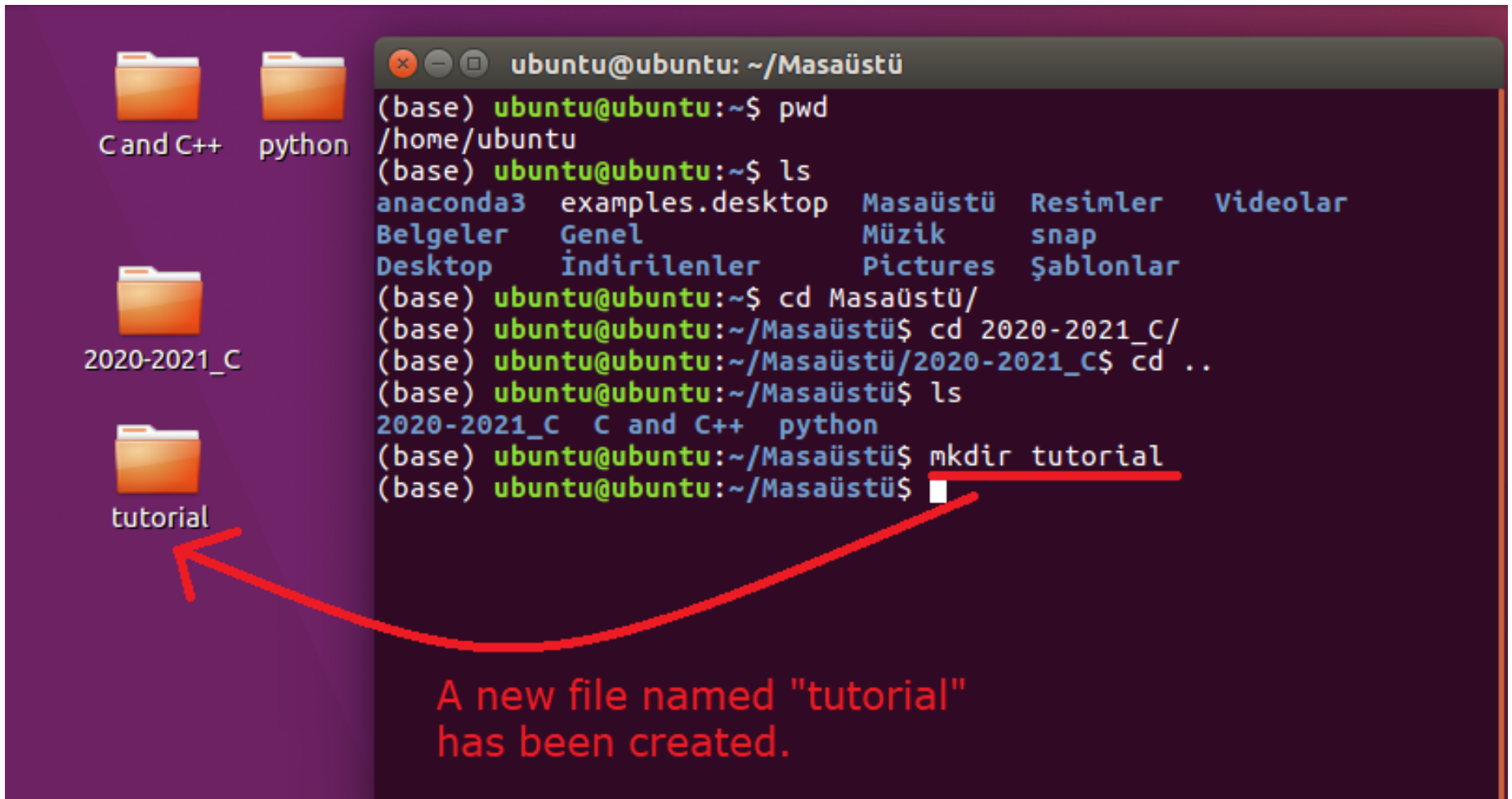
- ❑ The Linux command line is a text interface to your computer. Often referred to as the shell, terminal, console or various other names.
- ❑ You can open terminal by typing the first letters of the “terminal”, “shell”.
- ❑ Keyboard shortcut is:
Ctrl + Alt + T



Some Basic Linux Commands

- ❑ **pwd:** This command print the present working directory.
- ❑ **ls:** print what is in the current directory.
- ❑ **cd:** change the working directory (an abbreviation for 'change directory').
- ❑ **cd .. :** goes up to the parent directory (note the space between cd and ..).
- ❑ **mkdir:** create a new directory (abbreviation for 'make directory').

Some Basic Linux Commands



The screenshot shows a Linux desktop environment with a purple background. On the left, there are four folder icons: 'C and C++', 'python', '2020-2021_C', and 'tutorial'. A terminal window is open on the right, displaying the following commands and outputs:

```
ubuntu@ubuntu: ~/Masaüstü
(base) ubuntu@ubuntu:~$ pwd
/home/ubuntu
(base) ubuntu@ubuntu:~$ ls
anaconda3  examples.desktop  Masaüstü  Resimler  Videolar
Belgeler  Genel             Müzik     snap
Desktop    İndirilenler      Pictures  Şablonlar
(base) ubuntu@ubuntu:~$ cd Masaüstü/
(base) ubuntu@ubuntu:~/Masaüstü$ cd 2020-2021_C/
(base) ubuntu@ubuntu:~/Masaüstü/2020-2021_C$ cd ..
(base) ubuntu@ubuntu:~/Masaüstü$ ls
2020-2021_C  C and C++  python
(base) ubuntu@ubuntu:~/Masaüstü$ mkdir tutorial
(base) ubuntu@ubuntu:~/Masaüstü$
```

A red arrow points from the `mkdir tutorial` command in the terminal to the 'tutorial' folder icon on the desktop.

A new file named "tutorial" has been created.

Some Basic Linux Commands

- **>** : output of a command can be redirected into a file by using the greater-than symbol (>).
 - ▣ `command > file`
- **<** : You can use the less-than symbol (<) to use a file as input for a command.
 - ▣ `command < file`
- **clear**: clean the shell.

Some Basic Linux Commands

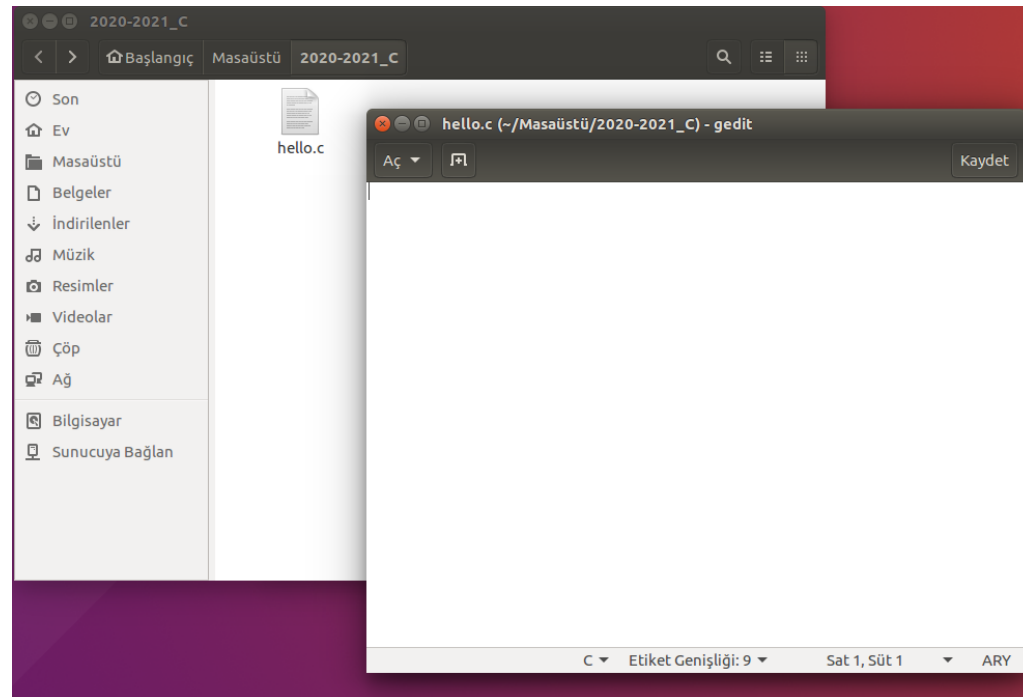
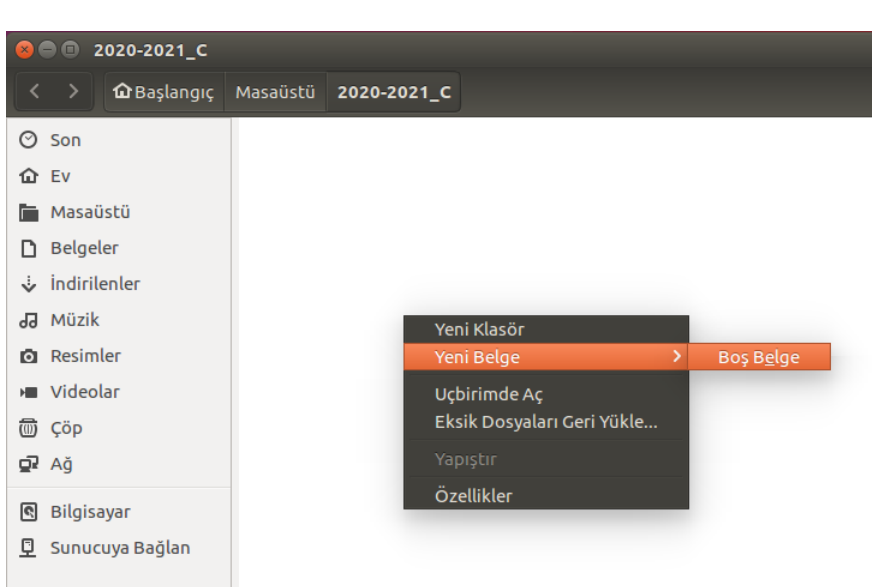
- ❑ In Unix terminology, root called as **superuser**.
- ❑ Root can do just about anything!..
- ❑ However, a person logged in as root is just as capable of making mistakes as anyone else.
- ❑ To reduce problems, it is encouraged to use 'su'.

Some Basic Linux Commands

- ❑ **su:** command for 'super user' or 'switch user'. The aim was spending most of time as using a normal account, switch to the superuser account when they needed to.
- ❑ However, it is still dangerous! Because, when using su your entire terminal session is switched to super user.
- ❑ **sudo:** 'switch user and do this command'.
- ❑ **apt** or **apt-get:** install or upgrade software onto your system.

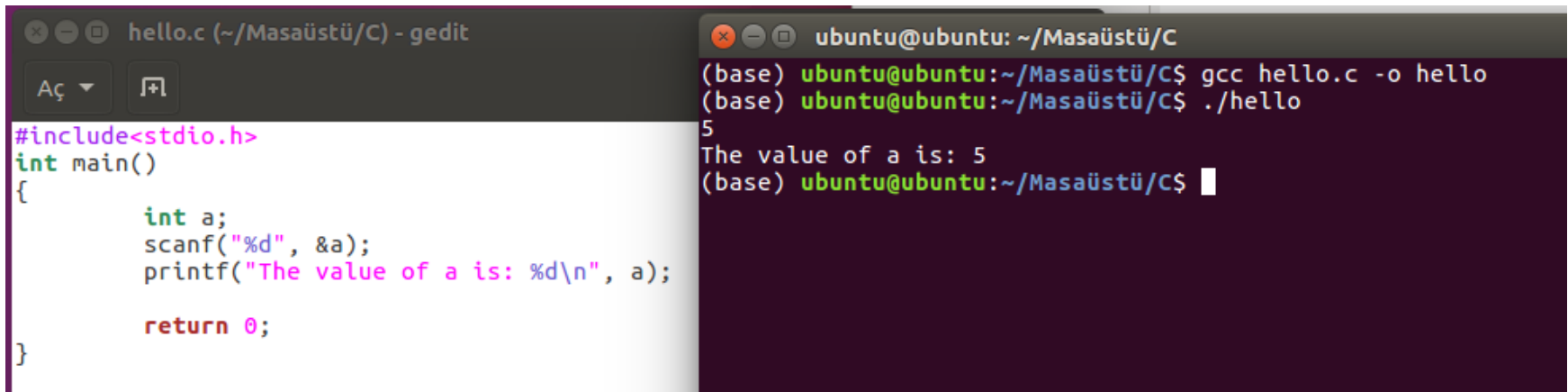
Creating a C file

- File extension must be .c
- We will use a graphical Text Editor such as gedit, Notepad++.



Compiling a C file

- Type the command: `gcc cFileName.c -o executableFileName`
- For ex; `gcc hello.c -o hello`
- This command will invoke the C compiler to compile the file `hello.c` and output (-o) the result to an executable called `hello`.
- If you don't type output filename, your executable filename will be `a.out`.



The image shows two side-by-side windows. The left window is a code editor titled 'hello.c (~/ Masaüstü/C) - gedit'. It contains the following C code:

```
#include<stdio.h>
int main()
{
    int a;
    scanf("%d", &a);
    printf("The value of a is: %d\n", a);

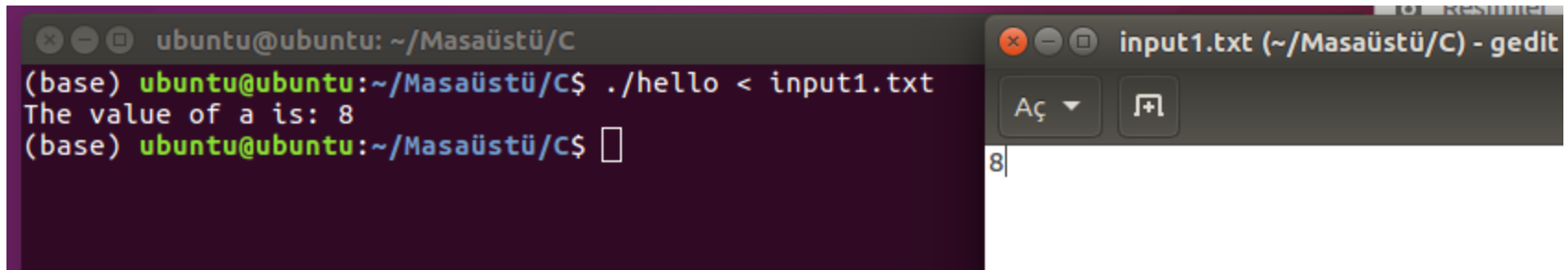
    return 0;
}
```

The right window is a terminal titled 'ubuntu@ubuntu: ~/Masaüstü/C'. It shows the following commands and output:

```
(base) ubuntu@ubuntu:~/Masaüstü/C$ gcc hello.c -o hello
(base) ubuntu@ubuntu:~/Masaüstü/C$ ./hello
5
The value of a is: 5
(base) ubuntu@ubuntu:~/Masaüstü/C$
```

Reading input from a txt file

- Type the command: `gcc ./executableFileName < txtFileName.txt`
- For ex; `gcc ./hello < input1.txt`
- This command will use `input1.txt` file as input for the command.



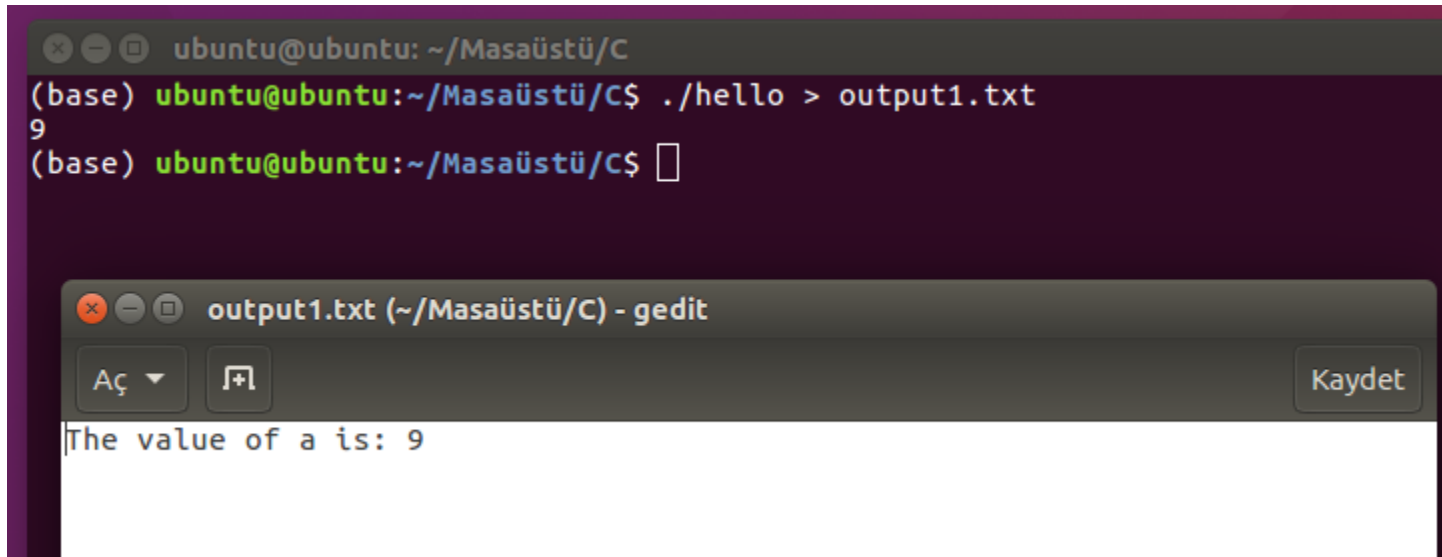
The image shows two overlapping windows from a Linux desktop environment. The background window is a terminal with the title bar 'ubuntu@ubuntu: ~/Masaüstü/C'. It displays the following text:
(base) ubuntu@ubuntu:~/Masaüstü/C\$./hello < input1.txt
The value of a is: 8
(base) ubuntu@ubuntu:~/Masaüstü/C\$
The foreground window is a gedit text editor with the title bar 'input1.txt (~/Masaüstü/C) - gedit'. It shows a single line containing the number '8'.

```
ubuntu@ubuntu: ~/Masaüstü/C
(base) ubuntu@ubuntu:~/Masaüstü/C$ ./hello < input1.txt
The value of a is: 8
(base) ubuntu@ubuntu:~/Masaüstü/C$

input1.txt (~/Masaüstü/C) - gedit
8
```

Writing an output of a command to a txt file

- Type the command: `gcc ./executableFileName > txtFileName.txt`
- For ex; `gcc ./hello > output1.txt`
- This command will redirect output of a command into output1.txt.



The screenshot shows two windows. The top window is a terminal with the title 'ubuntu@ubuntu: ~/Masaüstü/C'. It displays the command `./hello > output1.txt` being executed, followed by the output '9'. The bottom window is a text editor titled 'output1.txt (~/Masaüstü/C) - gedit'. It shows the text 'The value of a is: 9'.

```
ubuntu@ubuntu: ~/Masaüstü/C
(base) ubuntu@ubuntu:~/Masaüstü/C$ ./hello > output1.txt
9
(base) ubuntu@ubuntu:~/Masaüstü/C$
```

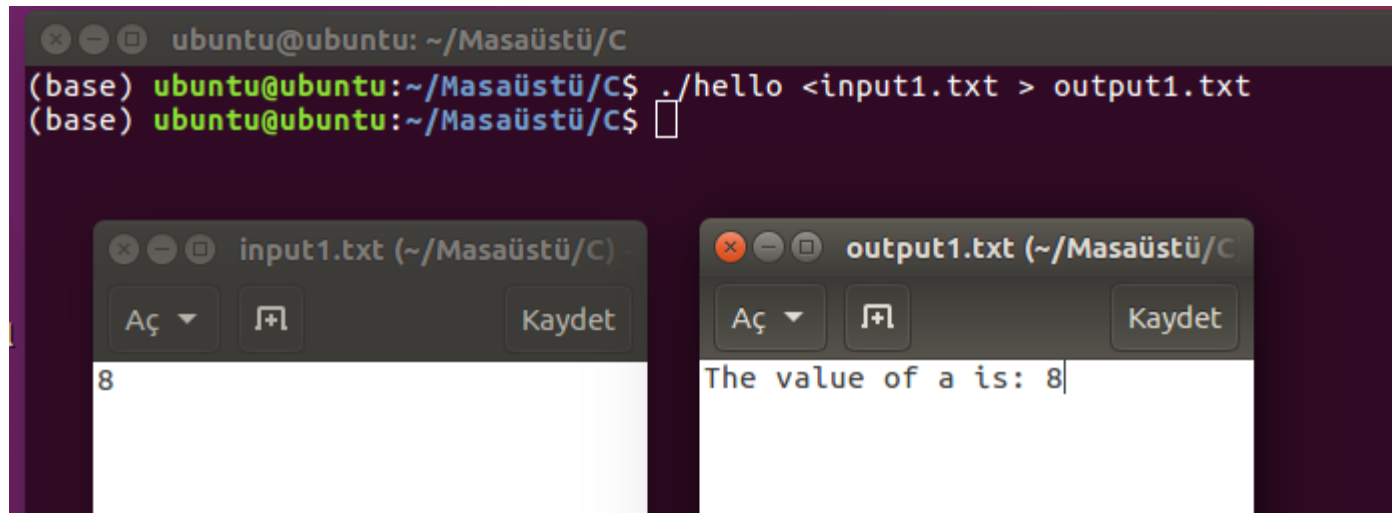
output1.txt (~/Masaüstü/C) - gedit

Aç ▾ [icon] Kaydet

The value of a is: 9

Using < and > characters together

- You can use both < and > together.
- Type the command: `gcc ./executableFileName < inputtxtFileName.txt > outtxtFileName.txt`



The screenshot shows a terminal window and two text editors. The terminal window has a title bar 'ubuntu@ubuntu: ~/Masaüstü/C'. It contains the following text:

```
(base) ubuntu@ubuntu:~/Masaüstü/C$ ./hello <input1.txt > output1.txt
(base) ubuntu@ubuntu:~/Masaüstü/C$
```

Below the terminal, there are two text editor windows. The left window is titled 'input1.txt (~/Masaüstü/C)' and contains the text '8'. The right window is titled 'output1.txt (~/Masaüstü/C)' and contains the text 'The value of a is: 8'.



Thank you..