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LAB 05

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Course : Operating System
Section: SE 5-2

Presented to :

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gcc Is not installed :-

```
hammad56765@Ubuntu: ~/lab05
hammad56765@Ubuntu:~$ gcc -version
Command 'gcc' not found, but can be installed with:
apt install gcc
Please ask your administrator.
hammad56765@Ubuntu:~$ su -
Password:
root@Ubuntu:~# sudo apt --fix-broken install
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
0 upgraded, 0 newly installed, 0 to remove and 314 not upgraded.
root@Ubuntu:~# sudo apt clean
root@Ubuntu:~# sudo apt autoremove
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
0 upgraded, 0 newly installed, 0 to remove and 314 not upgraded.
root@Ubuntu:~# sudo apt update
Hit:1 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:2 http://us.archive.ubuntu.com/ubuntu jammy InRelease
Hit:3 http://us.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://us.archive.ubuntu.com/ubuntu jammy-backports InRelease
Reading package lists... Done
```

- Errors occur due to I create file task1.c but I takes input in tas1.c so tas1.c default create file . and I run the file task1.c in which nothing text ;

```
root@Ubuntu:~#
logout
hammad56765@Ubuntu:~$ pwd
/home/hammad56765
hammad56765@Ubuntu:~$ ls
Desktop    Downloads      lab04  Music     pstudent.txt  RIPHAH   student      Templates
Documents  fstudents.txt  lab05  Pictures  Public        snap     student.txt  Videos
hammad56765@Ubuntu:~$ cd lab05
hammad56765@Ubuntu:~/lab05$ touch task1.c
hammad56765@Ubuntu:~/lab05$ cat>tas1.c
#include<studio.h>
int main(){
innt num;
printf("Enter a number :");
scanf("%d",&num);
if(num%2==0){
printf("Even number");
}
else{
printf("Odd number");
}
}
hammad56765@Ubuntu:~/lab05$ gcc task1.c -o task1
/usr/bin/ld: /usr/lib/gcc/x86_64-linux-gnu/11/../../../x86_64-linux-gnu/Scrt1.o: in functi
on `_start':
(.text+0x1b): undefined reference to `main'
```

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```
hammad56765@Ubuntu:~/lab05$ ./tas1
Enter a number :8
Even numberhammad56765@Ubuntu:~/lab05$ cd ..
```

Task # 01

```
hammad56765@Ubuntu:~/lab05$ cat>task1.c
#include <stdio.h>
int main() {
printf("Hello\n");
return 0;
}hammad56765@Ubuntu:~/lab05$ gcc task1.c -o task1
hammad56765@Ubuntu:~/lab05$ ./task1
Hello
```

Task # 02

- Create a file
- Write a code in file

```
hammad56765@Ubuntu:~/lab05$ touch task2.c
hammad56765@Ubuntu:~/lab05$ cat>task2.c
#include <stdio.h>

int main() {
int num;
printf("Enter a number :");
scanf("%d", num);

if(num % 2 ==0) {
printf("Even number\n");
} else {
printf("odd number\n");
}
return 0;
}
hammad56765@Ubuntu:~/lab05$ gcc task2.c -o task2
```

Output :-

```
hammad56765@Ubuntu:~/lab05$ ./task2
Enter a number :5
odd number
```

Task # 03

After installation of jdk

- Go to lab05 directory
- Create a java file
- Write a java file

```
Setting up default-jdk (2:1.11-72build2) ...
Setting up libxt-dev:amd64 (1:1.2.1-1) ...
root@Ubuntu:~#
logout
hammad56765@Ubuntu:~$ cd lab05
hammad56765@Ubuntu:~/lab05$ touch name.java
hammad56765@Ubuntu:~/lab05$ cat>name.java
public class Hello {
public static void main (String[] args) {
system .out.printin("My name is Hammad");
}
}
hammad56765@Ubuntu:~/lab05$ javac name.java
name.java:1: error: class Hello is public, should be declared in a file named Hello.java
public class Hello {
       ^
name.java:3: error: package system does not exist
system .out.printin("My name is Hammad");
       ^
2 errors
```

Errors :

- In printin line bcz I write a i instead of small L
- And also class Hello is public

After solve the errors :

```
hammad56765@Ubuntu:~/lab05$ javac name.java
hammad56765@Ubuntu:~/lab05$ java name
Error: Could not find or load main class name
Caused by: java.lang.ClassNotFoundException: name
hammad56765@Ubuntu:~/lab05$ java Hello
My name is Hammad
```

Task # 04

- I create a file of todate.txt in lab05 directory
- the current date/time into a file called todate.txt.

```
hammad56765@Ubuntu:~$ pwd
/home/hammad56765
hammad56765@Ubuntu:~$ cd lab05
hammad56765@Ubuntu:~/lab05$ touch todate.txt
hammad56765@Ubuntu:~/lab05$ date > todate.txt
hammad56765@Ubuntu:~/lab05$ cat<todate.txt
Tue 23 Sep 13:46:37 PKT 2025
hammad56765@Ubuntu:~/lab05$
```

Task # 05

Redirection & Pipe Operations

1. Redirect Output (>)

Command:

cat > file1.txt

Output :

```
hammad56765@Ubuntu:~/lab05$ ls
file1.txt  file3.txt    name.java  tas1.c  task1.c  task2.c
file2.txt  Hello.class  tas1       task1   task2    todate.txt
hammad56765@Ubuntu:~/lab05$ cat<file1.txt
hammad56765@Ubuntu:~/lab05$ cat>file1.txt
My name is Hammad and I m currently studying 5th semester of Bs software engineering at Ri
phah international university . in this semester , i studied the Operating system course f
or learning of how os works .
```

---

2. Append Output (>>)

Command:

cat >> file1.txt

Explanation:

- Adds the list of files in the current directory at the **end** of output.txt.
- Previous content is **not deleted**.

Append:

```
hammad56765@Ubuntu:~/lab05$ cat>>file1.txt
I have cgpa (3.4) in this semester.
```

---

3. Redirect Input (<)

Command:

cat < file1.txt

Explanation:

- Reads the content of output.txt and sends it to cat.
- Output will be displayed on the terminal.

Output :

```
hammad56765@Ubuntu:~/lab05$ cat<file1.txt
My name is Hammad and I m currently studying 5th semester of Bs software engineering at Ri
phah international university . in this semester , i studied the Operating system course o
r learning of how os works .
I have cgpa (3.4) in this semester.
hammad56765@Ubuntu:~/lab05$ cat< university file1.txt
bash: university: No such file or directory
```

---

4. Here Document (<<)

Command:

Explanation:

- The << operator is used to provide multiple lines of input directly to a command.
- Here, everything written until the word END is sent as input to cat.

Output:

```
hammad56765@Ubuntu:~/lab05$ cat << END
> My name is Hammad
> I studied in 5th sem
> End
> END
My name is Hammad
I studied in 5th sem
End
```

---

5. Pipe (|)

Command:

ls | sort

Explanation:

- Takes the output of ls (list of files) and sends it as input to sort.
- Files will be displayed in **alphabetical order**.

Output:

```
hammad56765@Ubuntu:~/lab05$ ls | sort
file1.txt
file2.txt
file3.txt
Hello.class
name.java
tas1
tas1.c
task1
task1.c
task2
task2.c
todate.txt
hammad56765@Ubuntu:~/lab05$
```

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