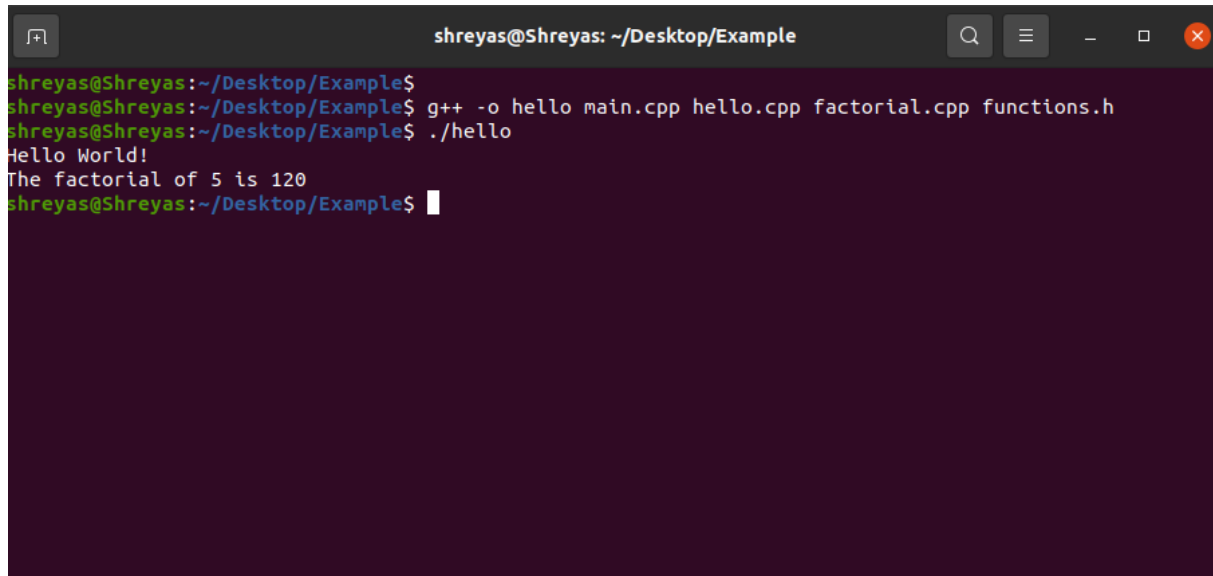


CS308- Large Applications Practicum

Activity 1

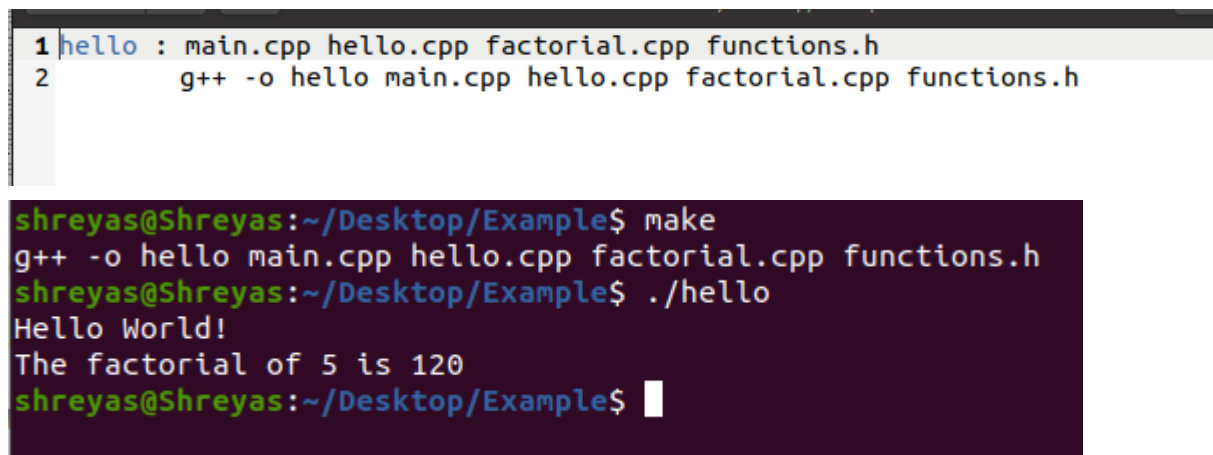
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Answer 1:



```
shreyas@Shreyas: ~/Desktop/Example
shreyas@Shreyas:~/Desktop/Example$ g++ -o hello main.cpp hello.cpp factorial.cpp functions.h
shreyas@Shreyas:~/Desktop/Example$ ./hello
Hello World!
The factorial of 5 is 120
shreyas@Shreyas:~/Desktop/Example$
```

Answer 2:



```
1 hello : main.cpp hello.cpp factorial.cpp functions.h
2      g++ -o hello main.cpp hello.cpp factorial.cpp functions.h

shreyas@Shreyas:~/Desktop/Example$ make
g++ -o hello main.cpp hello.cpp factorial.cpp functions.h
shreyas@Shreyas:~/Desktop/Example$ ./hello
Hello World!
The factorial of 5 is 120
shreyas@Shreyas:~/Desktop/Example$
```

Answer 3:

```
1 hello : main.o hello.o factorial.o
2      g++ -o hello main.o hello.o factorial.o
3
4 main.o : main.cpp functions.h
5      g++ -c main.cpp
6
7 factorial.o : factorial.cpp functions.h
8      g++ -c factorial.cpp
9
10 hello.o : hello.cpp functions.h
11     g++ -c hello.cpp
```

```
shreyas@Shreyas:~/Desktop/Example$ make
g++ -c main.cpp
g++ -c hello.cpp
g++ -c factorial.cpp
g++ -o hello main.o hello.o factorial.o
shreyas@Shreyas:~/Desktop/Example$ ./hello
Hello World!
The factorial of 5 is 120
shreyas@Shreyas:~/Desktop/Example$
```

Answer 4:

```
1 objects = main.o hello.o factorial.o
2
3 hello : $(objects)
4      g++ -o hello $(objects)
5
6 main.o : main.cpp functions.h
7
8 factorial.o : factorial.cpp functions.h
9
10 hello.o : hello.cpp functions.h
11
```

```
shreyas@Shreyas:~/Desktop/Example$ make
g++ -o hello main.o hello.o factorial.o
shreyas@Shreyas:~/Desktop/Example$ ./hello
Hello World!
The factorial of 5 is 120
shreyas@Shreyas:~/Desktop/Example$
```

Answer 5:

```
1 X = g++ Y = hello.cpp
2
3 hello : main.o hello.o factorial.o
4     $(X) -o hello main.o hello.o factorial.o
5
6 main.o : main.cpp functions.h
7     $(X) -c main.cpp
8
9 factorial.o : factorial.cpp functions.h
10    $(X) -c factorial.cpp
11
12 hello.o : $(Y) functions.h
13    $(X) -c $(Y)
14
15 clean :
16    rm hello
```

```
shreyas@Shreyas:~/Desktop/Example$ make clean
rm hello
shreyas@Shreyas:~/Desktop/Example$ ./hello
bash: ./hello: No such file or directory
shreyas@Shreyas:~/Desktop/Example$
```

Bonus:

```
X = g++
Y = hello.cpp

hello : main.o hello.o factorial.o
    $(X) -o hello main.o hello.o factorial.o

main.o : main.cpp functions.h
    $(X) -c main.cpp

factorial.o : factorial.cpp functions.h
    $(X) -c factorial.cpp

hello.o : $(Y) functions.h
    $(X) -c $(Y)

clean :
    rm hello

refresh :
    rm hello hello.o main.o factorial.o
```

```
shreyas@Shreyas:~/Desktop/Example$ make refresh
rm hello hello.o main.o factorial.o
shreyas@Shreyas:~/Desktop/Example$ ls
1.png  3.png  5.png  7.png  9.png  functions.h  main.cpp
2.png  4.png  6.png  8.png  factorial.cpp  hello.cpp  makefile
shreyas@Shreyas:~/Desktop/Example$
```