

**Operators, Conditional Statements, Loops, Functions,
Arrays, Pointers and Structures**

OBJECT ORIENTED PROGRAMMING LAB



ASSIGNMENT # 01

Submitted By

HASNAT AHMAD

(20P-0079)

Submitted to

MR. MUHAMMAD ABDULLAH ORAKZAI

(COMPUTER INSTRUCTOR)

DEPARTMENT OF COMPUTER SCIENCE

**FAST NATIONAL UNIVERSITY OF COMPUTER AND
EMERGING SCIENCES, PESHAWAR**

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OPERATOR.

QUESTION 1.

```
#include <iostream>
using namespace std;
int main(){
    int rupee,dollar;
    cout<<"Enter Dollars To Conver It Into Rupees : "<<endl;
    cin>>dollar;
    rupee=dollar*160;
    cout<<"Dollar In Rupee = "<<rupee<<endl;
}
```

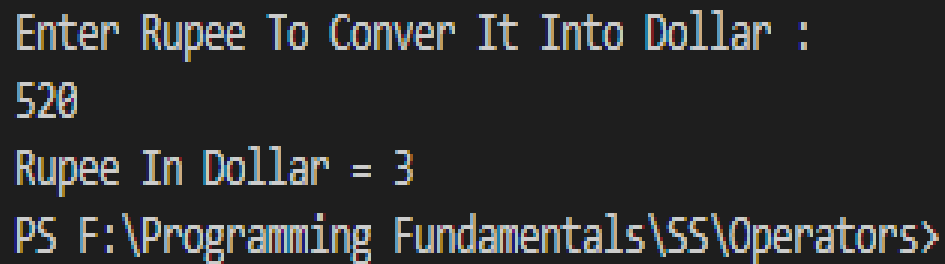
OUTPUT.

```
Enter Dollars To Conver It Into Rupees :
5
Dollar In Rupee = 800
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Operators$
```

QUESTION 2.

```
#include <iostream>
using namespace std;
int main(){
    int rupee,dollar;
    cout<<"Enter Rupee To Conver It Into Dollar : "<<endl;
    cin>>rupee;
    dollar=rupee/160;
    cout<<"Rupee In Dollar= "<<dollar<<endl;
}
```

OUTPUT.



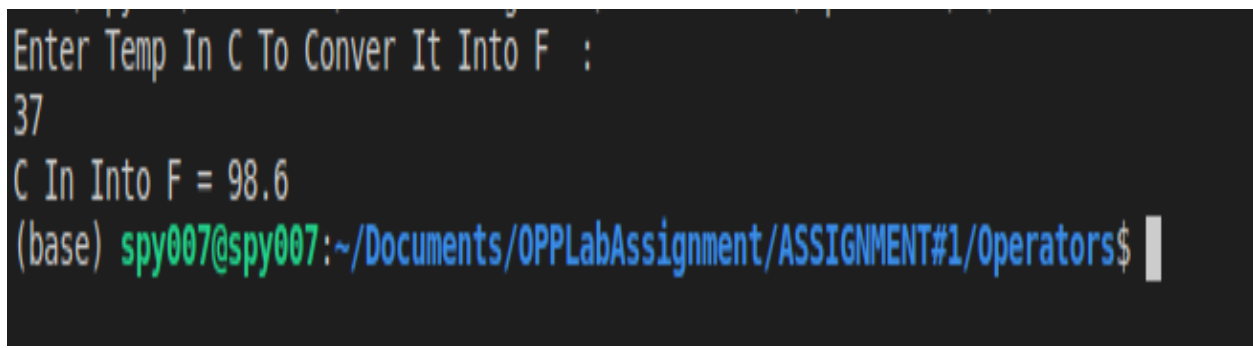
```
Enter Rupee To Conver It Into Dollar :
520
Rupee In Dollar = 3
PS F:\Programming Fundamentals\SS\Operators>
```

QUESTION 3.

```
#include <iostream>
using namespace std;
int main(){
```

```
float C,F;  
cout<<"Enter Temp In C To Conver It Into F : "<<endl;  
cin>>C;  
F=(9*C)/5+32;  
cout<<"C In Into F = "<<F<<endl;  
}
```

OUTPUT.



```
Enter Temp In C To Conver It Into F :  
37  
C In Into F = 98.6  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Operators$
```

QUESTION 4.

```
#include <iostream>  
#include <string>  
using namespace std;  
int main(){  
    int O_marks,T_marks;  
    float percent;
```

```
string name;
cout<<"Enter Your Name : "<<endl;
cin>>name;
cout<<"Enter Obtained Marks : "<<endl;
cin>>O_marks;
cout<<"Enter Total Marks : "<<endl;
cin>>T_marks;
percent=(O_marks)*100/T_marks;
cout<<"Student Name : "<<name<<endl;
cout<<"Total Marks : "<<T_marks<<endl;
cout<<"Obtained Marks : "<<O_marks<<endl;
cout<<"Percentage : "<<percent<<endl;

}
```

OUTPUT.

```
Enter Your Name :
Hasnat Ahmad
Enter Obtained Marks :
980
Enter Total Marks :
1100
Student Name : Hasnat Ahmad
Total Marks : 1100
Obtained Marks : 980
Percentage : 89
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Operators$
```

QUESTION 5.

```
#include <iostream>

#include <cmath>

using namespace std;

int main(){

    cout<<"Max = "<<max(5,9)<<endl;
    cout<<"Min = "<<min(5,9)<<endl;
    cout<<"Round off = "<<round(6.8)<<endl;
    cout<<"Squire Root = "<<sqrt(36)<<endl;
    cout<<"log = "<<log(2)<<endl;
    cout<<"Absolute = "<<abs(-8)<<endl;
    cout<<"arcCos tetha = "<<acos(60)<<endl;
    cout<<"arcsin theta = "<<asin(6.8)<<endl;
    cout<<"arctan theta = "<<atan(36)<<endl;
    cout<<"cube root = "<<cbt(8)<<endl;
    cout<<"Rounded To nearest Integer = "<<ceil(9.6)<<endl;
    cout<<"cos theta = "<<cos(60)<<endl;
    cout<<"Hyperbolic Cos theta = "<<cosh(60)<<endl;
    cout<<"Exponential Value = "<<exp(8)<<endl;
    cout<<"expm1 = "<<expm1(6)<<endl;
    cout<<"Float Absolute Value = "<<fabs(-3.6)<<endl;
    cout<<"Positive Difference = "<<fdim(8,5)<<endl;
    cout<<"Value Rounded To neareast integer = "<<floor(6.2)<<endl;
```

```

cout<<"Sqrt(x^2+y^2) = "<<hypot(5,8)<<endl;
cout<<"x*y+z = "<<fma(8,5,7)<<endl;
cout<<"Max Float value = "<<fmax(6.2,8.4)<<endl;
cout<<"Min Float Value = "<<fmin(5.2,8.7)<<endl;
cout<<"Reminder Float value = "<<fmod(6.2,8.4)<<endl;
cout<<"Power = "<<pow(2,3)<<endl;
}

```

OUTPUT.

```

Max = 9
Min = 5
Round off = 7
Squire Root = 6
log = 0.693147
Absolute = 8
arcCos tetha = nan
arcsin theta = nan
arctan theta = 1.54303
cube root = 2
Rounded To nearest Integer = 10
cos theta = -0.952413
Hyperbolic Cos theta = 5.71004e+25
Exponential Value = 2980.96
expm1 = 402.429
Float Absolute Value = 3.6
Positive Difference = 3
Value Rounded To neareast integer = 6
Sqrt(x^2+y^2) = 9.43398
x*y+z = 47
Max Float value = 8.4
Min Float Value = 5.2
Reminder Float value = 6.2
Power = 8
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Operators$ █

```

CONDITIONAL **STATEMENTS.**

IF-ELSE.

QUESTION 1.

```
#include<iostream>
using namespace std;
int main(){
    int num;
    cout<<"Enter Real Number : "<<endl;
    cin>>num;
    if(num<0){
        cout<<"Number "<<num<<" is Negative"<<endl;
    }
    else{
        cout<<"Number "<<num<<" is Positive"<<endl;
    }
}
```


OUTPUT.

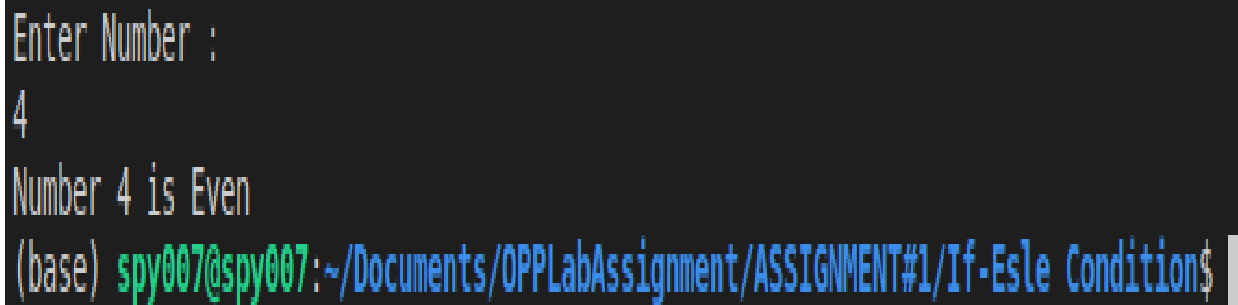
```
Enter Real Number :  
-1  
Number -1 is Negative  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle Condition$ cd "/h  
ent/ASSIGNMENT#1/If-Esle Condition/" && g++ no1.cpp -o no1 && "/home/spy007/Documents/OP  
e Condition/"no1  
Enter Real Number :  
2  
Number 2 is Positive  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle Condition$
```

QUESTION 2.

```
#include<iostream>  
using namespace std;  
int main(){  
    int num;  
    cout<<"Enter Number : "<<endl;  
    cin>>num;  
    if(num%2==0){  
        cout<<"Number "<<num<<" is Even"<<endl;  
    }
```

```
}  
if(num<0){  
    cout<<"Enter Positive Number : "<<endl;  
}  
else{  
    cout<<"Number "<<num<<" is Odd"<<endl;  
}  
}
```

OUTPUT.

A terminal window with a dark background. The first line shows the prompt "Enter Number :". The second line shows the user input "4". The third line shows the program output "Number 4 is Even". The fourth line shows the terminal prompt "(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle Condition\$" with a white cursor at the end.

```
Enter Number :  
4  
Number 4 is Even  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle Condition$
```

QUESTION 3.

```
#include <iostream>  
using namespace std;  
int main() {
```

```
int year;
cout<<"Enter Year To Check Weather It Is Leap Year Or Not : "<<endl;
cin>>year;
if (year % 4== 0) {
    if (year % 100 == 0) {
        if (year % 400 == 0)
            cout<<year<<" is leap year"<<endl;
        else
            cout<<year<<" is not leap year"<<endl;
    }
    else{
        cout<<year<<" is leap year"<<endl;
    }
}
else{
    cout<<year<<" is not leap year"<<endl;
}
}
```

OUTPUT.

```

Enter Year To Check Weather It Is Leap Year Or Not :
2002
2002 is not leap year
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle Condition$ cd "
ent/ASSIGNMENT#1/If-Esle Condition/" && g++ Qno3.cpp -o Qno3 && "/home/spy007/Document
sle Condition/"Qno3
Enter Year To Check Weather It Is Leap Year Or Not :
2004
2004 is leap year
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle Condition$ █

```

QUESTION 4.

```

#include<iostream>

using namespace std;

int main(){

    int num1,num2;

    cout<<"Enter 1st Number : "<<endl;

    cin>>num1;

    cout<<"Enter 2nd Number : "<<endl;

    cin>>num2;

    if(num1<num2){

        cout<<" 2nd Number "<<num2<<" Is Greater Than "<<"1st Number
"<<num1<<endl;

    }

    else{

        cout<<" 1st Number "<<num1<<" Is Greater Than "<<"2nd Number
"<<num2<<endl;

    }

}

```

OUTPUT.

```
Enter 1st Number :  
4  
Enter 2nd Number :  
8  
2nd Number 8 Is Greater Than 1st Number 4  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Else Condition$
```

If-Else If-Else.

QUESTION 1.

```
#include<iostream>  
using namespace std;  
int main(){  
    int num;  
    cout<<"Enter Real Number : "<<endl;  
    cin>>num;  
    if(num<0){  
        cout<<"Number "<<num<<" is Negative"<<endl;  
    }  
    else if(num==0){  
        cout<<"Number "<<num<<" is Neutral"<<endl;  
    }  
}
```

```

    }
    else{
        cout<<"Number "<<num<<" is Positive"<<endl;
    }
}

```

OUTPUT.

```

Enter Real Number :
9
Number 9 is Positive
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle if Condition$

```

QUESTION 2.

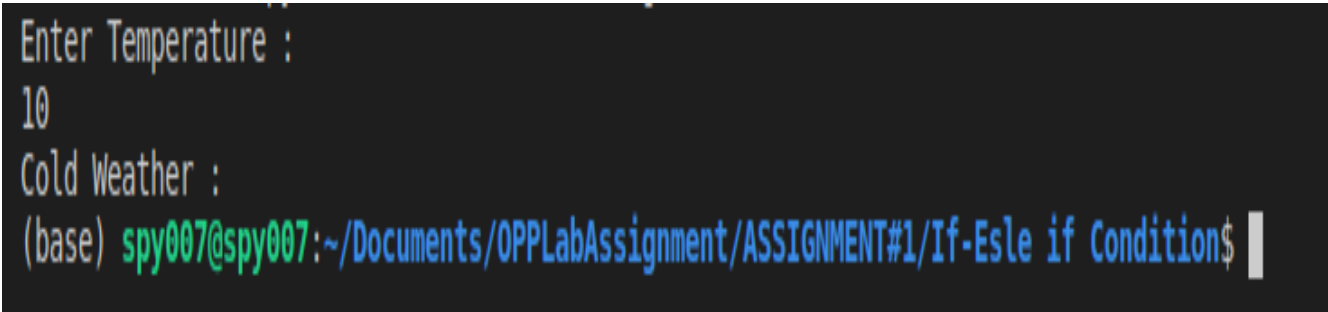
```

#include<iostream>
using namespace std;
int main(){
    int T;
    cout<<"Enter Temperature : "<<endl;
    cin>>T;
    if(T<0){
        cout<<"Freezing Weather : "<<endl;
    }
    else if(T<10){

```

```
        cout<<"Very Cold Weather : "<<endl;
    }
    else if(T<20){
        cout<<"Cold Weather : "<<endl;
    }
    else if(T<30){
        cout<<"Normal Weather : "<<endl;
    }
    else if(T<40){
        cout<<"Hot Weather: "<<endl;
    }
    else{
        cout<<"Very Hot weather : "<<endl;
    }
}
```

OUTPUT.



```
Enter Temperature :
10
Cold Weather :
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle if Condition$
```

QUESTION 3.

```
#include<iostream>

using namespace std;

int main(){
    int percent;
    cout<<"Enter Percentage : "<<endl;
    cin>>percent;
    if (percent>= 90) {
        cout<<"Grade A"<<endl;
    }
    else if (percent >= 80) {
        cout<<"Grade B"<<endl;
    }
    else if (percent >= 70){
        cout<<"Grade C"<<endl;
    }
    else if (percent >= 60){
        cout<<"Grade D"<<endl;
    }
    else if (percent >= 40){
        cout<<"Grade E"<<endl;
    }
    else{
        cout<<"Grade F"<<endl;
    }
}
```



```
}
```

OUTPUT.

```
Enter Percentage :  
80  
Grade B  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle if Condition$
```

QUESTION 4.

```
#include<iostream>  
using namespace std;  
int main(){  
    int a,b,re;  
    char opp;  
    cout<<"Enter 1st Number "<<endl;  
    cin>>a;  
    cout<<"Enter 2nd Number"<<endl;  
    cin>>b;  
    cout<<"Enter Operation To Perform (+ , - , * , / ,%) "<<endl;  
    cin>>opp;  
    if (opp=='+') {  
        re=a+b;  
        cout<<"Sum Of "<<a<<" + "<<b<<" is = "<<re<<endl;  
    }  
    else if (opp=='-'){
```

```
re=a-b;
cout<<"Sub Of "<<a<<" - "<<b<<" is = "<<re<<endl;
}
else if (opp=='*'){
re=a*b;
cout<<"Multi Of "<<a<<" * "<<b<<" is = "<<re<<endl;
}
else if (opp=='/'){
re=a/b;
cout<<"Division Of "<<a<<" / "<<b<<" is = "<<re<<endl;
}
else if (opp=='%'){
re=a%b;
cout<<"Modullo Of "<<a<<" % "<<b<<" is = "<<re<<endl;
}

}
```

OUTPUT.

```
Enter 1st Number
5
Enter 2nd Number
9
Enter Operation To Perform (+ , - , * , / , %)
+
Sum Of 5 + 9 is = 14
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle if Condition$
```

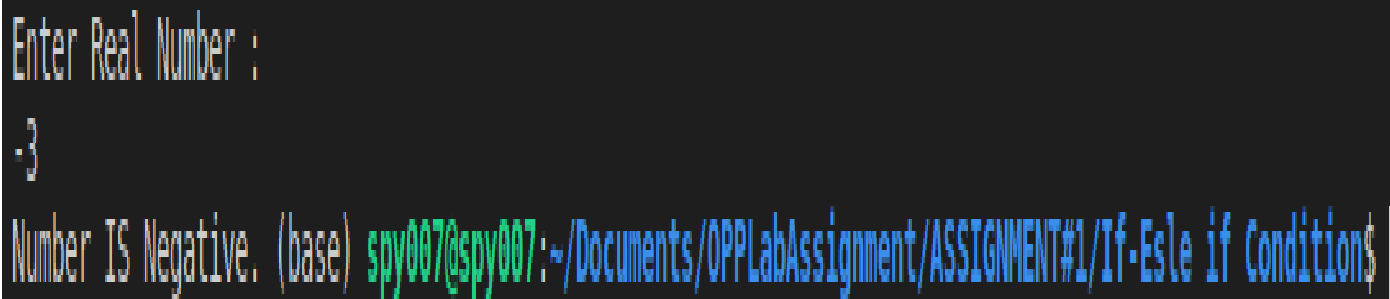
CONDITIONAL **OPERATOR.**

QUESTION 1.

```
#include<iostream>
using namespace std;
int main(){
    int num;
```

```
cout<<"Enter Real Number : "<<endl;
cin>>num;
string re=(num<0)? "Number IS Negative. ":"Number IS Positive";
cout<<re;
}
```

OUTPUT.

A screenshot of a terminal window with a dark background. The first line shows the prompt "Enter Real Number :". The second line shows the user input "-3". The third line shows the program output "Number IS Negative." followed by the terminal's command prompt "(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle if Conditions\$".

```
Enter Real Number :
-3
Number IS Negative. (base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/If-Esle if Conditions$
```

QUESTION 2.

```
#include<iostream>
using namespace std;
int main(){
    int num;
    cout<<"Enter Real Number : "<<endl;
    cin>>num;
    string re=(num%2==0)? "Number IS Even. ":"Number IS Odd";
```

```
    cout<<re;  
}
```

OUTPUT.

```
Enter Real Number :  
5  
Number IS Odd  
PS F:\Programming Fundamentals\SS\If-Esle if Condition> |
```

SWITCH STATEMENTS.

QUESTION 1.

```
using namespace std;  
int main(){  
    int a,b,re;  
    char opp;  
    cout<<"Enter 1st Number "<<endl;  
    cin>>a;  
    cout<<"Enter 2nd Number"<<endl;  
    cin>>b;  
    cout<<"Enter Operation To Perform (+ , - , * , /) "<<endl;
```

```
cin>>opp;
switch (opp){
    case '+':
        re=a+b;
        cout<<"Sum Of "<<a<<" + "<<b<<" is = "<<re<<endl;
        break;
    case '-':
        re=a-b;
        cout<<"Sub Of "<<a<<" - "<<b<<" is = "<<re<<endl;
        break;
    case '*':
        re=a*b;
        cout<<"Multi Of "<<a<<" * "<<b<<" is = "<<re<<endl;
        break;
    case '/':
        re=a/b;
        cout<<"Division Of "<<a<<" / "<<b<<" is = "<<re<<endl;
        break;
    case '%':
        re=a%b;
        cout<<"Modulo Of "<<a<<" / "<<b<<" is = "<<re<<endl;
        break;
    default :
        cout<<"You Entered Wrong Operation "<<endl;
}
```

}

OUTPUT.

```
Enter 1st Number
5
Enter 2nd Number
8
Enter Operation To Perform (+ , - , * , /)
-
Sub Of 5 - 8 is = -3
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Switch Statements$
```

QUESTION 2.

```
#include<iostream>
#include<iostream>
using namespace std;
int main()
{
    int month_no;
    cout<<"Enter Month Number : "<<endl;
    cin>>month_no;
    switch(month_no){
        case 1:
```

```
cout<<"January";
```

```
break;
```

case 2:

```
cout<<"February";
```

```
break;
```

case 3:

```
cout<<"March";
```

```
break;
```

case 4:

```
cout<<"April";
```

```
break;
```

case 5:

```
cout<<"May";
```

```
break;
```

case 6:

```
cout<<"June";
```

```
break;
```

case 7:

```
cout<<"July";
```

```
break;
```

case 8:

```
cout<<"August";
```

```
break;
```

case 9:

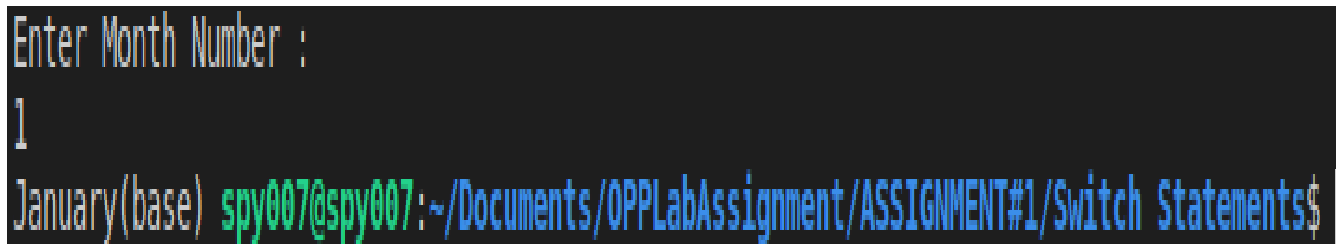
```
cout<<"September";
```

```
break;
```



```
        case 10:
            cout<<"October";
            break;
        case 11:
            cout<<"November";
            break;
        case 12:
            cout<<"December";
            break;
        default:
            cout<<"You Entered Invalid Month Number";
            break;
    }
    return 0;
}
```

OUTPUT.

A terminal window with a dark background. The first line shows the prompt "Enter Month Number :" followed by the input "1". The second line shows the output "January(base)". The third line shows the shell prompt "spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Switch Statements\$".

```
Enter Month Number :
1
January(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Switch Statements$
```

FOR LOOP.

QUESTION 1.

```
#include<iostream>

using namespace std;

int main(){

    for(int i=0;i<11;i++){

        cout<<i<<" ";

    }

}
```

OUTPUT.

```
cd "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/For Loop/" && g++ Qno1.cpp -o Qno1 && "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/For Loop/"Qno1
(base) spy007@spy007:~$ cd "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/For Loop/" && g++ Qno1.cpp -o Qno1 && "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/For Loop/"Qno1
0 1 2 3 4 5 6 7 8 9 10 (base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/For Loop$
```

QUESTION 2.

```
#include<iostream>
using namespace std;
int main(){
    cout<<"Odd Numbers Upto 10 = ";
    for(int i=1;i<11;i++){
        if (i%2!=0){
            cout<<i<<" ";
        }
    }
    cout<<endl;
    cout<<"Even Numbers Upto 10 = ";
    for(int i=1;i<11;i++){
        if (i%2==0){
            cout<<i<<" ";
        }
    }
}
```

OUTPUT.

```
e/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/For Loop/"no2
Odd Numbers Upto 10 = 1 3 5 7 9
Even Numbers Upto 10 = 2 4 6 8 10 (base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/For Loop$
```

QUESTION 3.

```
#include<iostream>

using namespace std;

int main(){

    int num;

    cout<<"Enter Number : "<<endl;

    cin>>num;

    for(int i=1;i<11;i++){

        cout<<num<<" * "<<i<<" = "<<i*num<<endl;

    }

}
```

OUTPUT.

```
Enter Number :
4
4 * 1 = 4
4 * 2 = 8
4 * 3 = 12
4 * 4 = 16
4 * 5 = 20
4 * 6 = 24
4 * 7 = 28
4 * 8 = 32
4 * 9 = 36
4 * 10 = 40
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/For Loop$
```

QUESTION 4.

```
#include<iostream>

using namespace std;

int main(){

    int num,fact=1;

    cout<<"Enter Number To Find Factorial : "<<endl;

    cin>>num;

    if (num>0){

        for(int i=1;i<num+1;i++)

            fact*=i;

        cout<<"Factorial Of "<<num<<" = "<<fact<<endl;

    }

    else{

        cout<<"Plz Enter Positive Value : "<<endl;

    }

}
```

OUTPUT.

```
Enter Number To Find Factorial :
5
Factorial Of 5 = 120
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/For Loop$
```

WHILE LOOP.

QUESTION 1.

```
#include<iostream>
using namespace std;
int main(){
    int i=1;
    while(i<11){
        cout<<i<<" ";
        i++;
    }
}
```

OUTPUT.

```
cd "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/While Loop/" && g++ Qnol.cpp -o Qnol && "/
PPLabAssignment/ASSIGNMENT#1/While Loop/"Qnol
(base) spy007@spy007:~$ cd "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/While Loop/" && g+
/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/While Loop/"Qnol
1 2 3 4 5 6 7 8 9 10 (base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/While Loop$
```

QUESTION 2.

```
#include<iostream>
using namespace std;
int main(){
    int i=1;
    cout<<"Odd Numbers = ";
    while(i<11){
        if (i%2!=0){
            cout<<i<<" ";
        }
        i++;
    }
    cout<<endl;
    cout<<"Even Numbers = ";
    i=1;
    while(i<11){
        if (i%2==0){
            cout<<i<<" ";
        }
        i++;
    }
}
```

OUTPUT.

```
/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/While Loop/"Qno2
Odd Numbers = 1 3 5 7 9
Even Numbers = 2 4 6 8 10 (base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/While Loop$
```

QUESTION 3.

```
#include<iostream>
using namespace std;
int main(){
    int num,i=1;
    cout<<"Enter Number : "<<endl;
    cin>>num;
    while(i<11){
        cout<<num<<" * "<<i<<" = "<<i*num<<endl;
        i++;
    }
}
```

OUTPUT.


```
Enter Number :  
5  
5 * 1 = 5  
5 * 2 = 10  
5 * 3 = 15  
5 * 4 = 20  
5 * 5 = 25  
5 * 6 = 30  
5 * 7 = 35  
5 * 8 = 40  
5 * 9 = 45  
5 * 10 = 50  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/While Loop$
```

QUESTION 4.

```
#include<iostream>  
  
using namespace std;  
  
int main(){  
    int num,fact=1,i=1;  
    cout<<"Enter Number To Find Factorial : "<<endl;  
    cin>>num;  
    if(num<0){  
        cout<<"PLz Enter Positivr Value : "<<endl;  
    }  
    else{  
        while(i<num+1)  
            fact*=i;  
            i++;  
    }  
}
```

```
    cout<<"Factorial Of "<<num<<" = "<<fact<<endl;
}
}
```

OUTPUT.

```
Enter Number To Find Factorial :
6
Factorial Of 6 = 720
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/While Loop$
```

QUESTION 5.

```
#include<iostream>
using namespace std;
int main(){
    int a,b,re;
    char opp;
    bool c=true;
    char d='y';
    while(c){
        cout<<"Enter 1st Number "<<endl;
        cin>>a;
        cout<<"Enter 2nd Number"<<endl;
        cin>>b;
```

```

cout<<"Enter Operation To Perform (+ , - , * , / , %) "<<endl;
cin>>opp;
if (opp=='+') {
    re=a+b;
    cout<<"Sum Of "<<a<<" + "<<b<<" is = "<<re<<endl;
}
else if (opp=='-'){
    re=a-b;
    cout<<"Sub Of "<<a<<" - "<<b<<" is = "<<re<<endl;
}
else if (opp=='*'){
    re=a*b;
    cout<<"Multi Of "<<a<<" * "<<b<<" is = "<<re<<endl;
}
else if (opp=='/'){
    re=a/b;
    cout<<"Division Of "<<a<<" / "<<b<<" is = "<<re<<endl;
}
else if (opp=='%'){
    re=a%b;
    cout<<"Modullo Of "<<a<<" % "<<b<<" is = "<<re<<endl;
}
cout<<"Do You Want To Perform Calculation Again (y/n)"<<endl;
cin>>d;
if (d=='n'){
    c=false;

```

```
}  
  
}  
  
}
```

OUTPUT.

```
Enter 1st Number  
5  
Enter 2nd Number  
8  
Enter Operation To Perform (+ , - , * , / , %)  
+  
Sum Of 5 + 8 is = 13  
Do You Want To Perform Calculation Again (y/n)  
y  
Enter 1st Number  
5  
Enter 2nd Number  
7  
Enter Operation To Perform (+ , - , * , / , %)  
*  
Multi Of 5 * 7 is = 35  
Do You Want To Perform Calculation Again (y/n)  
n  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/While Loop$
```

DO-WHILE LOOP.

QUESTION 1.

```
#include<iostream>
```

```
using namespace std;
int main(){
    int i=1;
    do{
        cout<<i<<" ";
        i++;
    }
    while(i<11);
}
```

OUTPUT.

```
PS C:\Users\Ibtihaj> cd "f:\Programming Fundamentals\SS\Do While\" ; if
1 2 3 4 5 6 7 8 9 10
PS F:\Programming Fundamentals\SS\Do While> 
```

QUESTION 2.

```
#include<iostream>

using namespace std;

int main(){
    int i=1,j=1;
    cout<<"Odd Numbers = ";
    do{
        if (i%2!=0){
            cout<<i<<" ";
        }
        i++;
    }
    while(i<11);
    cout<<endl;
    cout<<"Even Numbers = ";
    do{
        if (j%2==0){
            cout<<j<<" ";
        }
        j++;
    }
    while(j<11);
}
```

OUTPUT.

```
ome/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/Do While/"Qno2
Odd Numbers = 1 3 5 7 9
Even Numbers = 2 4 6 8 10 (base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Do While$
```

QUESTION 3.

```
#include<iostream>
using namespace std;
int main(){
    int i=1,numb;
    cout<<"Enter Number : ";
    cin>>numb;
    do{
        cout<<numb<<" * "<<i<<" = "<<numb*i<<endl;
        i++;
    }
    while(i<11);
}
```

OUTPUT.

```
Enter Number : 5
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Do While$
```

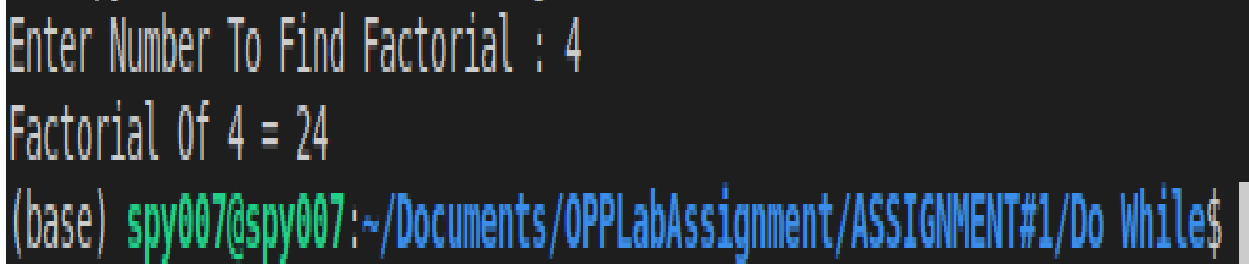
QUESTION 4.

```
#include<iostream>
using namespace std;
int main(){
    int i=1,numb,fact=1;
    cout<<"Enter Number To Find Factorial : ";
    cin>>numb;
    if (numb<0){
        cout<<"Plz Enter Positive value : "<<endl;
    }
    else{
        do{
            fact*=i;
```



```
i++;  
}  
while(i<numb+1);  
cout<<"Factorial Of "<<numb<<" = "<<fact<<endl;  
}  
}
```

OUTPUT.

A terminal window with a dark background. The first line shows the prompt 'Enter Number To Find Factorial : ' followed by the input '4'. The second line shows the output 'Factorial Of 4 = 24'. The third line shows the shell prompt '(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Do While\$' followed by a vertical bar cursor.

```
Enter Number To Find Factorial : 4  
Factorial Of 4 = 24  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Do While$ |
```

QUESTION 5.

```
#include<iostream>  
using namespace std;  
int main(){  
    int a,b,re;  
    char opp;  
    bool c=true;
```

```
char d='y';
do{
cout<<"Enter 1st Number "<<endl;
cin>>a;
cout<<"Enter 2nd Number"<<endl;
cin>>b;
cout<<"Enter Operation To Perform (+ , - , * , / , %) "<<endl;
cin>>opp;
if (opp=='+') {
    re=a+b;
    cout<<"Sum Of "<<a<<" + "<<b<<" is = "<<re<<endl;
}
else if (opp=='-'){
    re=a-b;
    cout<<"Sub Of "<<a<<" - "<<b<<" is = "<<re<<endl;
}
else if (opp=='*'){
    re=a*b;
    cout<<"Multi Of "<<a<<" * "<<b<<" is = "<<re<<endl;
}
else if (opp=='/'){
    re=a/b;
    cout<<"Division Of "<<a<<" / "<<b<<" is = "<<re<<endl;
}
else if (opp=='%'){
    re=a%b;
```

```

        cout<<"Modullo Of "<<a<<" % "<<b<<" is = "<<re<<endl;
    }
    cout<<"Do You Want To Perform Calculation Again (y/n)"<<endl;
    cin>>d;
    if (d=='n'){
        c=false;
    }
}
while(c);
}

```

OUTPUT.

```

Enter 1st Number
5
Enter 2nd Number
8
Enter Operation To Perform (+ , - , * , / , %)
+
Sum Of 5 + 8 is = 13
Do You Want To Perform Calculation Again (y/n)
y
Enter 1st Number
8
Enter 2nd Number
5
Enter Operation To Perform (+ , - , * , / , %)
-
Sub Of 8 - 5 is = 3
Do You Want To Perform Calculation Again (y/n)
n
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Do While$

```

NESTED LOOP.

QUESTION 1.

```
#include<iostream>

using namespace std;

int main(){

    int n=6;

    for(int i=0;i<6;i++){

        for(int j=0;j<n;j++){

            cout<<'*';

        }

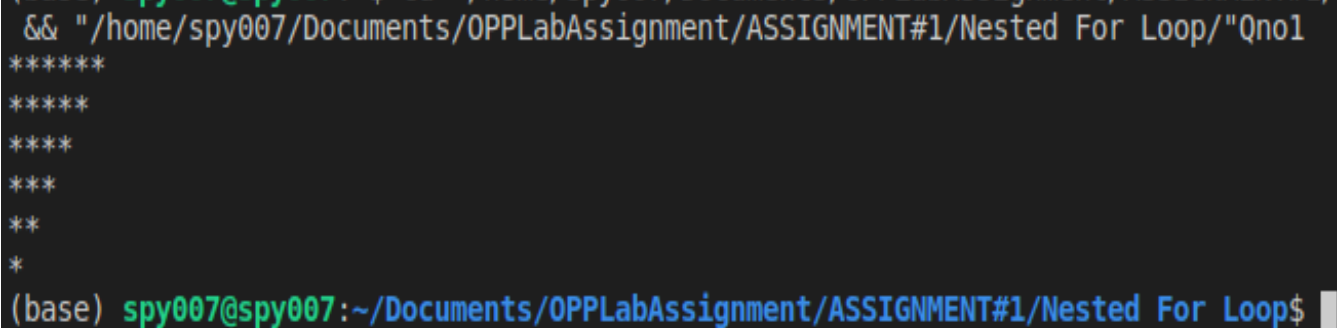
        n-=1;

        cout<<endl;

    }

}
```

OUTPUT.



```
&& "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop/"Qno1
*****
*****
****
***
**
*
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop$
```

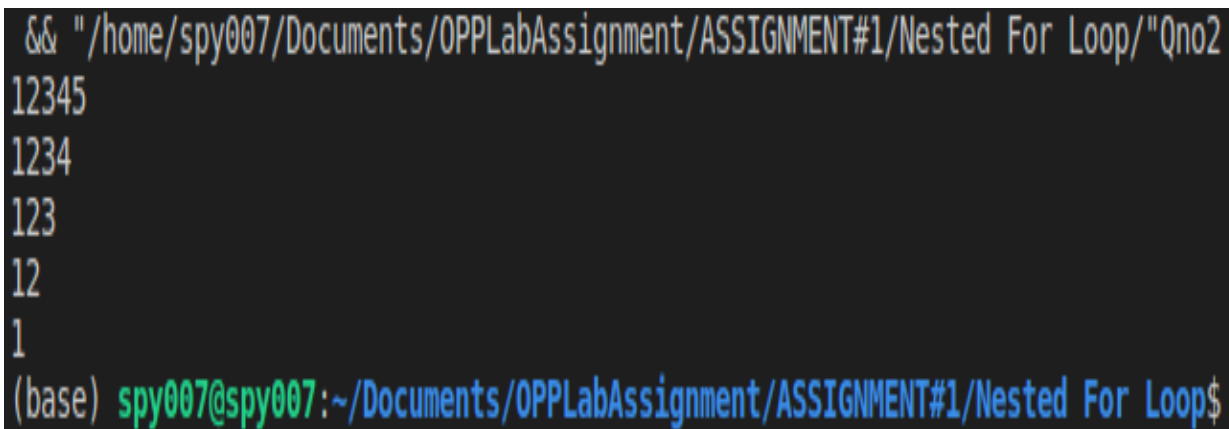
QUESTION 2.

```
#include<iostream>

using namespace std;
```

```
int main(){
    int n=6;
    for(int i=1;i<6;i++){
        for(int j=1;j<n;j++){
            cout<<j;
        }
        n-=1;
        cout<<endl;
    }
}
```

OUTPUT.

A terminal window with a dark background. The prompt is "&& "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop/"Qno2". The output consists of five lines of numbers: "12345", "1234", "123", "12", and "1". The prompt changes to "(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop\$".

```
&& "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop/"Qno2
12345
1234
123
12
1
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop$
```

QUESTION 3.

```
#include<iostream>

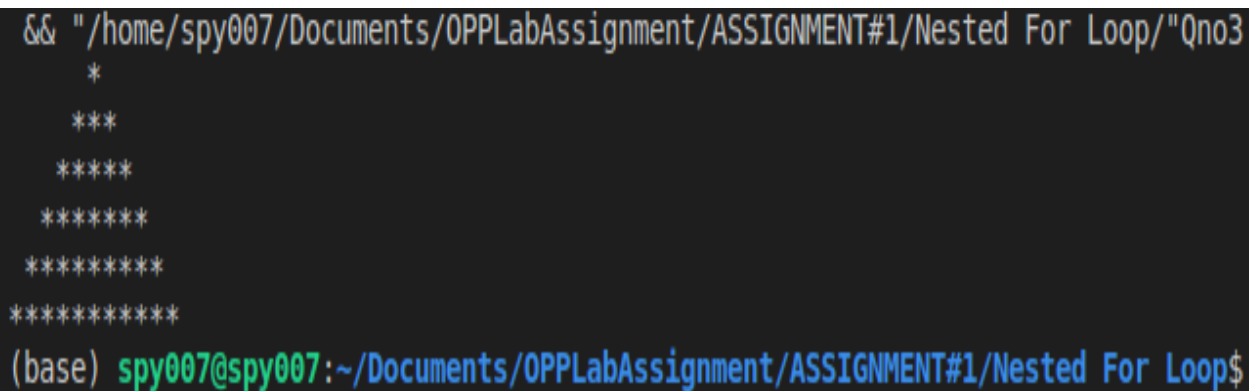
using namespace std;
```

```

int main(){
    int n=6;
    for(int i=1;i<=n;i++){
        for(int j=1;j<=n-i;j++){
            cout<<' ';
        }
        for (int j=1;j<=2*i-1;j++){
            cout<<'*';
        }
        cout<<endl;
    }
}

```

OUTPUT.



```

&& "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop/"Qno3
*
***
*****
*****
*****
*****
*****
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop$

```

QUESTION 4.

```

#include<iostream>

using namespace std;

```

```

int main(){
    int n=4;
    for(int i=n;i>=1;i--){
        for(int j=1;j<=n-i;j++){
            cout<<' ';
        }
        for (int j=1;j<=i*2-1;j++){
            cout<<'x';
        }
        cout<<endl;
    }
}

```

OUTPUT.

```

&& "/home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop/"Qno4
XXXXXXXX
XXXXX
XXX
X
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Nested For Loop$

```

1D ARRAY.

QUESTION 1.

```
#include <iostream>
using namespace std;
int main(){
    int length;
    cout<<"Enter Length Of Array : "<<endl;
    cin>>length;
    int arraya[length];
    int arrayb[length];
    int arraysum[length];
    cout<<"Insert Elements In Array A "<<endl;
    for(int i=0;i<length;i++){
        cin>>arraya[i];
    }
    cout<<endl;
    cout<<"Insert Elements In Array B "<<endl;
    for(int i=0;i<length;i++){
        cin>>arrayb[i];
    }
    cout<<"Sum Of Two Array = "<<endl;
    for(int i=0;i<length;i++){
        arraysum[i]=arraya[i]+arrayb[i];
        cout<<"Arraysun ["<<i<<" = "<<arraysum[i]<<endl;
    }
}
```


}

OUTPUT.

```
Enter Length Of Array :
5
Insert Elements In Array A
32
12
32
41
1

Insert Elements In Array B
1
21
12
32
41
Sum Of Two Array =
Arraysum [0] = 33
Arraysum [1] = 33
Arraysum [2] = 44
Arraysum [3] = 73
Arraysum [4] = 42
PS F:\Programming Fundamentals\SS\1D Array> █
```

QUESTION 2.

```
#include <iostream>
using namespace std;
int main(){
    int num;
    num=rand()%100;
```

```
cout<<"Random Number : "<<num<<endl;
}
```

OUTPUT.

```
ome/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/1D Array/"Qno2
Random Number : 83
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/1D Array$
```

QUESTION 3.

```
#include <iostream>
using namespace std;
int main(){
    int num;
    int arraya[5];
    int arrayb[5];
    int arraysum[5];
    for(int i=0;i<5;i++){
        num=rand()%100;
        arraya[i]=num;
    }
    cout<<"Array A "<<endl;
```

```
for(int i=0;i<5;i++){
    num=rand()%100;
    arraya[i]=num;
    cout<<"Arraya ["<<i<<" = "<<arraya[i]<<endl;
}
cout<<endl;
cout<<"Array B "<<endl;
for(int i=0;i<5;i++){
    num=rand()%100;
    arrayb[i]=num;
    cout<<"Arraya ["<<i<<" = "<<arrayb[i]<<endl;
}
cout<<endl;
cout<<"Array Sum "<<endl;
for(int i=0;i<5;i++){
    arraysum[i]=arraya[i]+arrayb[i];
    cout<<"Array["<<i<<" = "<<arraysum[i]<<endl;
}

}
```

OUTPUT.

```
Array A
Arraya [0] = 35
Arraya [1] = 86
Arraya [2] = 92
Arraya [3] = 49
Arraya [4] = 21

Array B
Arraya [0] = 62
Arraya [1] = 27
Arraya [2] = 90
Arraya [3] = 59
Arraya [4] = 63

Array Sum
Array[0] = 97
Array[1] = 113
Array[2] = 182
Array[3] = 108
Array[4] = 84
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/1D Array$
```

QUESTION 4.

```
#include <iostream>
using namespace std;
int main(){
    int array[6]={5,8,88,9,3,66};
    int max=array[0];
    for(int i=0;i<6;i++){
        if (array[i]>max){
            max=array[i];
        }
    }
```

```
}  
cout<<"Max Number = "<<max<<endl;  
}
```

OUTPUT.

```
ome/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/1D Array/"Qno4  
Max Number = 88  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/1D Array$
```

QUESTION 5.

```
#include <iostream>  
using namespace std;  
int main(){  
    int array[6]={5,8,88,9,3,66};  
    int min=array[0];  
    for(int i=0;i<6;i++){  
        if (array[i]<min){  
            min=array[i];  
        }  
    }  
}
```

```
    cout<<"Min Number = "<<min<<endl;
}
```

OUTPUT.

```
ome/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/1D Array/"Qno5
Min Number = 3
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/1D Array$
```

2D ARRAY.

QUESTION 1.

```
#include <iostream>
using namespace std;
int main(){
    int num;
    int array[3][3];
    cout<<"Array "<<endl;
    for(int i=0;i<3;i++){
        for(int j=0;j<3;j++){
```

```

        num=rand()%100;
        array[i][j]=num;
        cout<<"Array["<<i<<"]["<<j<<"] = "<<array[i][j]<<endl;

    }

}

}

```

OUTPUT.

```

Array
Array[0][0] = 83
Array[0][1] = 86
Array[0][2] = 77
Array[1][0] = 15
Array[1][1] = 93
Array[1][2] = 35
Array[2][0] = 86
Array[2][1] = 92
Array[2][2] = 49
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/2D Array$

```

QUESTION 2.

```

#include <iostream>

using namespace std;

```

```
int main(){
    int num;
    int array[3][3];
    for(int i=0;i<3;i++){
        for(int j=0;j<3;j++){
            num=rand()%100;
            array[i][j]=num;
        }
    }
    int max=array[0][0];
    int min=array[0][0];
    for(int i=0;i<3;i++){
        for(int j=0;j<3;j++){
            if(array[i][j]>max){
                max=array[i][j];
            }
            if(array[i][j]<min){
                min=array[i][j];
            }
        }
    }
    cout<<"Max Random Number = "<<max<<endl;
    cout<<"Min Random Number = "<<min<<endl;

}
```


OUTPUT.

```
Max Random Number = 93
Min Random Number = 15
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/2D Array$
```

QUESTION 3.

```
#include <iostream>
using namespace std;
int main(){
    int arrayA[3][3];
    int arrayB[3][3];
    cout<<"Insert Numbers In Array : "<<endl;
    for (int i=0;i<3;i++){
        for (int j=0;j<3;j++){
            cout<<"array A ["<<i<<"]["<<j<<"] = ";
            cin>>arrayA[i][j];
            cout<<"array B ["<<i<<"]["<<j<<"] = ";
            cin>>arrayB[i][j];
        }
    }
}
```

```
cout<<"  Array A "<<endl;
```

```
for (int i=0;i<3;i++){  
    for (int j=0;j<3;j++){  
        cout<<arrayA[i][j]<<"\t";  
    }  
    cout<<endl;  
}
```

```
cout<<endl;
```

```
cout<<"  Array B "<<endl;
```

```
for (int i=0;i<3;i++){  
    for (int j=0;j<3;j++){  
        cout<<arrayB[i][j]<<"\t";  
    }  
    cout<<endl;  
}
```

```
int arrayC[3][3];
```

```
int sum;
```

```
for (int i=0;i<3;i++){  
    for (int j=0;j<3;j++){  
        sum=arrayA[i][j]+arrayB[i][j];  
        arrayC[i][j]=sum;  
    }  
}
```

```
}  
cout<<"Array C "<<endl;  
for (int i=0;i<3;i++){  
    for (int j=0;j<3;j++){  
        cout<<arrayC[i][j]<<"\t";  
    }  
    cout<<endl;  
}  
  
}
```

OUTPUT.

Insert Numbers In Array :

array A [0][0] = 33

array B [0][0] = 44

array A [0][1] = 55

array B [0][1] = 11

array A [0][2] = 21

array B [0][2] = 2

array A [1][0] = 3

array B [1][0] = 4

array A [1][1] = 66

array B [1][1] = 74

array A [1][2] = 34

array B [1][2] = 5

array A [2][0] = 68

array B [2][0] = 76

array A [2][1] = 54

array B [2][1] = 33

array A [2][2] = 91

array B [2][2] = 32

Array A

33 55 21

3 66 34

68 54 91

Array B

44 11 2

4 74 5

76 33 32

Array C

77 66 23

7 140 39

144 87 123

(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/2D Array\$

QUESTION 4.

```
#include<iostream>

using namespace std;

#include <iostream>

using namespace std;

int main(){

    int arrayA[3][3];
    int arrayB[3][3];
    int arrayC[3][3];
    cout<<"Insert Numbers In Array : "<<endl;
    for (int i=0;i<3;i++){
        for (int j=0;j<3;j++){
            cout<<"array A ["<<i<<"]["<<j<<"] = ";
            cin>>arrayA[i][j];
            cout<<"array B ["<<i<<"]["<<j<<"] = ";
            cin>>arrayB[i][j];
        }
    }

    cout<<"  Array A "<<endl;

    for (int i=0;i<3;i++){
        for (int j=0;j<3;j++){
            cout<<arrayA[i][j]<<"\t";
        }
    }
```

```
        cout<<endl;
    }
    cout<<endl;
    cout<<"  Array B "<<endl;
```

```
for (int i=0;i<3;i++){
    for (int j=0;j<3;j++){
        cout<<arrayB[i][j]<<"\t";
    }
    cout<<endl;
}
```

```
for (int i=0;i<3;i++){
    for (int j=0;j<3;j++){
        arrayC[i][j]=0;
    }
}
```

```
for (int i=0;i<3;i++){
    for (int j=0;j<3;j++){
        for (int k=0;k<3;k++){
            arrayC[i][j]=arrayC[i][j]+arrayA[i][k]*arrayB[k][j];

        }
    }
}
```

```
}  
cout<<" \t Array C "<<endl;  
for (int i=0;i<3;i++){  
    for (int j=0;j<3;j++){  
        cout<<arrayC[i][j]<<"\t";  
  
    }  
    cout<<endl;  
}  
}
```

OUTPUT.

```

Insert Numbers In Array :
array A [0][0] = 4
array B [0][0] = 3
array A [0][1] = 6
array B [0][1] = 8
array A [0][2] = 11
array B [0][2] = 9
array A [1][0] = 10
array B [1][0] = 14
array A [1][1] = 3
array B [1][1] = 5
array A [1][2] = 8
array B [1][2] = 9
array A [2][0] = 3
array B [2][0] = 4
array A [2][1] = 5
array B [2][1] = 6
array A [2][2] = 7
array B [2][2] = 8

      Array A
4      6      11
10     3      8
3      5      7

      Array B
3      8      9
14     5      9
4      6      8

      Array C
140    128    178
104    143    181
107    91     128
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/2D Array$

```

FUNCTIONS.

QUESTION 1.

```
#include <iostream>
using namespace std;
void table(int num){
    for(int i=1;i<11;i++){
        cout<<num<<" * "<<i<<" = "<<num*i<<endl;
    }
}

int main(){
    int num;
    cout<<"Enter Number To Find It's Table : "<<endl;
    cin>>num;
    table(num);
}
```

OUTPUT.

```
Enter Number To Find It's Table :
```

```
6
```

```
6 * 1 = 6
```

```
6 * 2 = 12
```

```
6 * 3 = 18
```

```
6 * 4 = 24
```

```
6 * 5 = 30
```

```
6 * 6 = 36
```

```
6 * 7 = 42
```

```
6 * 8 = 48
```

```
6 * 9 = 54
```

```
6 * 10 = 60
```

```
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Functions$
```

QUESTION 2.

```
#include <iostream>
```

```
using namespace std;
```

```
void fact(int num){
```

```
    int fact=1;
```

```
    if (num==1 || num==0){
```

```
        cout<<"Factorial = "<<fact;
```

```
    }
```

```
    else if(num<0){
```

```
        cout<<"Plz Enter Positive Value ";
```

```
    }
```

```
    else{
```

```
        for(int i=1;i<num+1;i++){
```

```
            fact*=i;
```

```
    }  
    cout<<"Factorial = "<<fact;  
}  
  
}  
int main(){  
    int num;  
    cout<<"Enter Number To Find It's Factorial : "<<endl;  
    cin>>num;  
    fact(num);  
  
}
```

OUTPUT.

```
Enter Number To Find It's Factorial :  
7  
Factorial = 5040(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Functions$
```

QUESTION 3.

```
#include<iostream>

using namespace std;

void add(int a,int b,int re){
    re=a+b;
    cout<<"Sum Of "<<a<<" + "<<b<<" is = "<<re<<endl;

}

void sub(int a,int b,int re){
    re=a-b;
    cout<<"Sub Of "<<a<<" - "<<b<<" is = "<<re<<endl;
}

void multi(int a,int b,int re){
    re=a*b;
    cout<<"Multi Of "<<a<<" * "<<b<<" is = "<<re<<endl;

}

void divide(int a,int b,int re){
    re=a/b;
    cout<<"Division Of "<<a<<" / "<<b<<" is = "<<re<<endl;

}

void modulo(int a,int b,int re){
    re=a%b;
```

```
cout<<"Modullo Of "<<a<<" % "<<b<<" is = "<<re<<endl;
```

```
}
```

```
int main(){
```

```
    int a,b,re;
```

```
    char opp;
```

```
    char c='y';
```

```
    do{
```

```
        cout<<"Enter 1st Number "<<endl;
```

```
        cin>>a;
```

```
        cout<<"Enter 2nd Number"<<endl;
```

```
        cin>>b;
```

```
        cout<<"Enter Operation To Perform (+ , - , * , / ,%) "<<endl;
```

```
        cin>>opp;
```

```
        if (opp=='+') {
```

```
            add(a,b,re);
```

```
        }
```

```
        else if (opp=='-'){
```

```
            sub(a,b,re);
```

```
        }
```

```
        else if (opp=='*'){
```

```
            multi(a,b,re);
```

```
        }
```

```
        else if (opp=='/'){
```

```
            divide(a,b,re);
```

```
        }
```

```

else if (opp=='%'){
    modulo(a,b, re);
}
cout<<"Do You Want To Perform Operation Again (y/n) : "<<endl;
cin>>c;
}
while(c=='y');
}

```

OUTPUT.

```

Enter 1st Number
3
Enter 2nd Number
5
Enter Operation To Perform (+ , - , * , / , %)
+
Sum Of 3 + 5 is = 8
Do You Want To Perform Operation Again (y/n) :
y
Enter 1st Number
3
Enter 2nd Number
4
Enter Operation To Perform (+ , - , * , / , %)
*
Multi Of 3 * 4 is = 12
Do You Want To Perform Operation Again (y/n) :
n
PS F:\Programming Fundamentals\SS\Functions> 

```

QUESTION 4.

```
#include<iostream>
using namespace std;
int *arr(int test[],int a){
    cout<<"Insert Numbers in Array : "<<endl;
    for (int i=0;i<a;i++){
        cin>>test[i];
    }
    return test;
}
```

```
int main(){
    int a;

    cout<<"Enter Length : "<<endl;
    cin>>a;
    int array[a];
```

```

arr(array,a);
for (int j=0;j<a;j++){
    cout<<"Array ["<<j<<"]="<<*array+j<<endl;
}
}

```

OUTPUT.

```

Enter Length :
6
Insert Numbers in Array :
33
22
55
66
3
4
Array [0]= 33
Array [1]= 34
Array [2]= 35
Array [3]= 36
Array [4]= 37
Array [5]= 38
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Functions$ 

```

QUESTION 5.

```

#include<iostream>
using namespace std;
int PrintType(int a){
    cout<<a<<" Is An Integer Data Type "<<endl;
    return 0;
}

```



```
}  
char PrintType(char a){  
    cout<<a<<" Is Character Data Type "<<endl;  
    return 0;  
  
}  
double PrintType(double a){  
    cout<<a<<"Is A Double Data Type "<<endl;  
    return 0;  
  
}  
bool PrintType(bool a){  
    cout<<a<<" Is boolean Data Type "<<endl;  
    return 0;  
  
}  
int main(){  
    PrintType(23);  
    PrintType('A');  
    PrintType(23.232);  
    PrintType(true);  
}
```

OUTPUT.

```
home/spy007/Documents/OPPLabAssignment/ASSIGNMENT#1/Functions/"Qno5
23 Is An Integer Data Type
A Is Character Data Type
23.232Is A Double Data Type
1 Is boolean Data Type
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Functions$
```

POINTERS.

QUESTION 1.

```
#include<iostream>
```

```
#include<cstring>
using namespace std;
int main(){
    int length;
    cout<<"Enter Length Of Array : "<<endl;
    cin>>length;
    int array[length];
    cout<<"Insert Elements In Array : "<<endl;
    for(int i =0;i<length;i++){
        cin>>array[i];
    }
    int max=array[0];
    int min=array[0];
    int *p;
    p=array;
    cout<<endl;
    for(int i =0;i<length;i++){
        if(*(p+i)>max){
            max=*(p+i);
        }
        if(*(p+i)<min){
            min=*(p+i);
        }
    }
    cout<<"MAx Value = "<<max<<endl;
    cout<<"Min Value = "<<min<<endl;
```

```
}
```

OUTPUT.

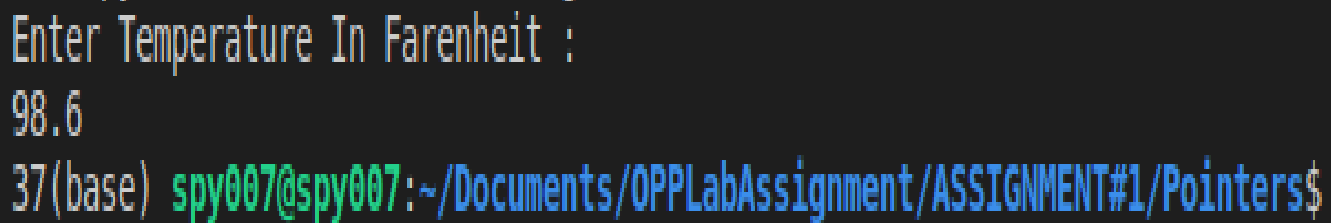
```
Enter Length Of Array :  
5  
Insert Elements In Array :  
4  
32  
66  
54  
21  
  
MAx Value = 66  
Min Value = 4  
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Pointers$
```

QUESTION 2.

```
#include<iostream>  
  
#include<cstring>  
  
using namespace std;  
  
void temp(double *F){  
    double con=(*F-32)*5/9;  
    cout<<con;  
}
```

```
int main(){
    double F;
    cout<<"Enter Temperature In Farenheit : "<<endl;
    cin>>F;
    double *p;
    p=&F;
    temp(p);
}
```

OUTPUT.

A terminal window with a dark background. The first line shows the prompt "Enter Temperature In Farenheit : " followed by the input "98.6". The second line shows the shell prompt "37(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Pointers\$" with a cursor at the end.

```
Enter Temperature In Farenheit :
98.6
37(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Pointers$
```

QUESTION 3.

```
#include<iostream>
using namespace std;
void weicon(double *weight){
    double con=*weight*1000;
    cout<<*weight<<" killo in Gram = "<<con<<endl;
```

```

}

int main(){
    double weight;
    cout<<"Enter Weight In Kilo To Convert It Into Gram : "<<endl;
    cin>>weight;
    weicon(&weight);
}

```

OUTPUT.

```

Enter Weight In Kilo To Convert It Into Gram :
5
5 killo in Gram = 5000g
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Pointers$

```

QUESTION 4.

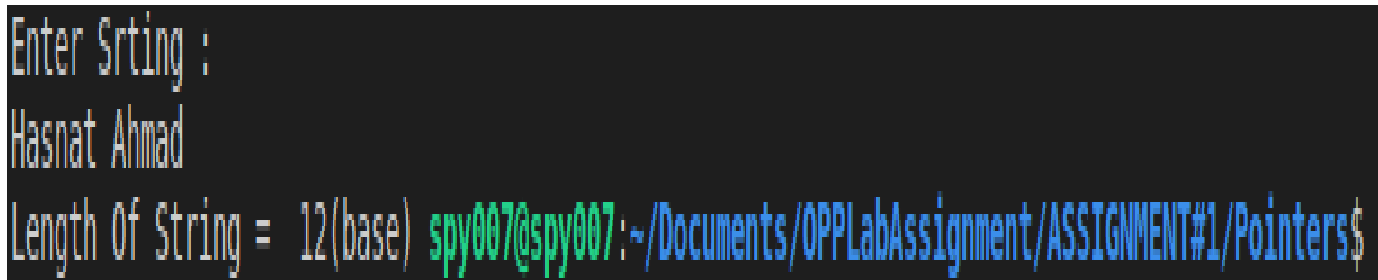
```

#include<iostream>
#include<cstring>
#include<string>
using namespace std;
int main(){

```

```
string str;  
cout<<"Enter Srting : "<<endl;  
getline(cin,str);  
string *p;  
p=&str;  
int length=(*p).size();  
cout<<"Length Of String = "<<length;
```

OUTPUT.

A terminal window with a dark background. The first line shows the prompt 'Enter Srting :'. The second line shows the input 'Hasnat Ahmad'. The third line shows the output 'Length Of String = 12(base)'. The prompt for the next command is 'spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Pointers\$'.

```
Enter Srting :  
Hasnat Ahmad  
Length Of String = 12(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Pointers$
```

QUESTION 5.

```
#include<iostream>  
#include<cstring>  
#include<string>  
using namespace std;
```

```
int main(){
    string str;
    string strc;
    string *str2;
    cout<<"Enter Srting : "<<endl;
    getline(cin,str);
    string *p;
    p=&str;
    strc=*p;
    cout<<"Original String = "<<str<<endl;
    cout<<"Copied String = "<<strc<<endl;

}
}
```

OUTPUT.

```
Enter Srting :
Hasnat Ahmad
Original String = Hasnat Ahmad
Copied String = Hasnat Ahmad
(base) spy007@spy007:~/Documents/OPPLabAssignment/ASSIGNMENT#1/Pointers$
```


QUESTION 6.

```
#include<iostream>
#include<cstring>
#include<string>
using namespace std;
int main(){
    string str;
    string str1;
    string addstr;
    cout<<"Enter 1st Srting : "<<endl;
    getline(cin,str);
    string *p;
    p=&str;
    cout<<"Enter 2nd Srting : "<<endl;
    getline(cin,str1);
    string *q;
    q=&str1;
    addstr=*p + *q;
    cout<<"ConCatenate String : "<<addstr;
}
```

OUTPUT.

```
Enter 1st Srting :  
Hasnat Ahmad  
Enter 2nd Srting :  
The Programmer  
ConCatenate String : Hasnat Ahmad The Programmer(base)
```

STRUCTURES.

QUESTION 1.

```
#include <iostream>  
  
using namespace std;  
  
struct Employee{  
  
    int number;  
  
    float compensation;  
  
    void getdata(){
```

```
cout<<"Enter Your Number : "<<endl;

cin>>number;

cout<<"Enter Your Compensation : 
"<<endl; cin>>compensation;
}

void displaydata(){

cout<<"Your Number : "<<number<<endl; cout<<"Your 
Compensation : "<<compensation<<endl; }

};

int main(){

Employee E1,E2,E3;

E1.getdata();
E1.displaydata();

E2.getdata();

E2.displaydata();

E3.getdata();

E3.displaydata();

}
```

OUTPUT.

```
Enter Your Number :  
4  
Enter Your Compensation :  
150000  
Your Number : 4  
Your Compensation : 150000  
Enter Your Number :  
7  
Enter Your Compensation :  
12000  
Your Number : 7  
Your Compensation : 12000  
Enter Your Number :  
3  
Enter Your Compensation :  
130000  
Your Number : 3  
Your Compensation : 130000  
(base) spy007@spy007:~/Documents/OPPLabAssignment/Lab task 7$
```

QUESTION 2.

```
#include <iostream>  
  
using namespace std;  
  
struct Time{  
  
    int second;  
  
    int minute;  
  
    int hour;  
  
    void getdata(){  
  
        cout<<"Enter Seconds : "<<endl;  
  
        cin>>second;  
  
        cout<<"Enter Minutes : "<<endl;
```

```
cin>>minute;

cout<<"Enter Hours : "<<endl;

cin>>hour;

}

void displaydata(){

int
sec=second+(minute*60)+(hour*3600); cout<
<"Total Seconds = "<<sec<<endl; }

};

int main(){
Time t1;

t1.getdata();

t1.displaydata();

}
```

OUTPUT.

```
Enter Seconds :  
35  
Enter Minutes :  
4  
Enter Hours :  
3  
Total Seconds = 11075  
(base) spy007@spy007:~/Documents/OPPLabAssignment/Lab task 7$
```

QUESTION 3.

```
#include <iostream>  
  
using namespace std;  
  
struct Time{  
  
    int second;  
  
    int minute;  
  
    int hour;  
  
    void getdata(){  
  
        cout<<"Enter Seconds : "<<endl;  
  
        cin>>second;  
  
        cout<<"Enter Minutes : "<<endl;  
  
        cin>>minute;
```

```

cout<<"Enter Hours : "<<endl;
cin>>hour;

}

void displaydata(){
    int
    sec=second+(minute*60)+(hour*3600); cout<
    <"Total Seconds = "<<sec<<endl; int
    h=sec/3600;
    sec%=3600;

    int m=sec/60;
    sec%=60;

    cout<<"Time "<<h<<":"<<m<<":"<<sec<<endl;
}

};

int main(){
    Time t1,t2;
    t1.getdata();
    t1.displaydata();
    t2.getdata();
    t2.displaydata();
}

```

OUTPUT.

```
Enter Seconds :  
45  
Enter Minutes :  
3  
Enter Hours :  
3  
Total Seconds = 11025  
Time 3:3:45  
Enter Seconds :  
53  
Enter Minutes :  
5  
Enter Hours :  
1  
Total Seconds = 3953  
Time 1:5:53  
(base) spy007@spy007:~/Documents/OPPLabAssignment/Lab task 7$
```

QUESTION 4.

```
#include <iostream>  
using namespace std;  
struct Distance  
{  
    int feet;  
    float inches;  
};  
  
struct Volume  
{  
    Distance l;
```



```

        Distance w;
        Distance h;
    };

int main()
{
    float length, width, height;
    Volume room1;

    room1.l.feet=20,room1.l.inches=4.6,room1.w.feet=16,room1.w.inches=0.2,room
    1.h.feet=10,room1.h.inches=3.0;

    length = room1.l.feet + room1.l.inches / 12.0;
    width = room1.w.feet + room1.w.inches / 12.0;
    height = room1.h.feet + room1.h.inches / 12.0;
    cout << "Volume of the room = " << length*width*height << " cubic feet
"<<endl;
    return 0;
}

```

OUTPUT.

```

PS F:\Programming Fundamentals\Struct> cd "f:\Progr
Volume of the room = 3346.35 cubic feet
PS F:\Programming Fundamentals\Struct> █

```

QUESTION 5.

```
#include<iostream>

using namespace std;

struct Phone{

    int areacode;

    int exchange;

    int number;

}

void getdata1(){

    areacode=212;

    exchange=767;

    number=8900;

}

void displaydata1(){

    cout<<"My Number Is : "<<"("<<areacode<<)"<<exchange<<"-
"<<number<<endl;
```

```

}

void getdata2(){

cout<<"Enter Your Area Code,The Exchange And The Number :
"<<endl; cin>>areacode;
cin>>exchange;

cin>>number;

}

void displaydata2(){

cout<<"Your Number Is : "<<"("<<areacode<<")"<<exchange<<"-
"<<number<<endl;

}

};

int main(){

Phone p1,p2;

p1.getdata1();

p2.getdata2();

p1.displaydata1();

p2.displaydata2();

}

```

OUTPUT.

```
Enter Your Area Code,The Exchange And The Number :  
415  
555  
1212  
My Number Is : (212)767-8900  
Your Number Is : (415)555-1212  
(base) spy007@spy007:~/Documents/OPPLabAssignment/Lab task 7$
```

QUESTION 6.

```
#include<iostream>  
#include<string>  
using namespace std;  
struct Employee{  
    string Name;  
    int Emp_id;  
    char Gemder;  
    int Age;  
    int Date_of_birth;  
};  
struct DOB{  
    int Day;  
    int Month;  
    int Year;  
    Employee E1;
```

```
};  
struct Food{  
  
};  
struct Vegetable{  
    Food f1;  
};  
struct Fruit{  
    Food f1;  
};  
struct Food{  
    Vegetable v1;  
  
};  
struct Food{  
    Vegetable v1;  
  
};  
struct Fruit{  
    Food f1;  
};  
struct Fruit{  
    Food f1;  
};  
int main(){
```

DOB s1;

}

