

Institute of Computer Technology  
B. Tech Computer Science and Engineering  
Subject: ESFP-II (2CSE203)

PRACTICAL-2

**AIM: - To learn about operators in C++.**

**Exercise:**

**1. Calculate the fare for the passengers traveling in a bus. When a Passenger enters the bus, the conductor asks “What distance will you travel?” On knowing distance from the passenger (as an approximate integer), the conductor mentions the fare to the passenger according to following criteria.**

Distance (in KMS)	Fare (per KM)
0 – 20	65 paisa
21 – 40	75 paisa
41 – 60	78 paisa
61 – 80	80 paisa
81 – 100	95 paisa
101 and above	1.05 paisa

**CODE:**

```
#include <iostream>
using namespace std;
int main() {
    float fare, dist;
    cout<<"What distance will you travel?\n";
    cin>>dist;

    if (dist>101)
    {
        fare=dist*1.05;
        cout<<"Fare of distance "<<dist<<" kms: "<<fare<<" Rs";
    }
    else if (dist>=81 && dist<100)
    {
        fare=dist*0.95;
        cout<<"Fare of distance "<<dist<<" kms: "<<fare<<" Rs";
    }
    else if (dist>=61 && dist<=80)
    {
        fare=dist*0.8;
        cout<<"Fare of distance "<<dist<<" kms: "<<fare<<" Rs";
    }
}
```

```

}
else if (dist>=41 && dist<=60)
{
    fare=dist*0.78;
    cout<<"Fare of distance "<<dist<<" kms: "<<fare<<" Rs";
}
else if (dist>=21 && dist<=40)
{
    fare=dist*0.75;
    cout<<"Fare of distance "<<dist<<" kms: "<<fare<<" Rs";
}
else {
    fare=dist*0.65;
    cout<<"Fare of distance "<<dist<<" kms: "<<fare<<" Rs";
}
return 0;
}

```

**OUTPUT:**

```

PS C:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2> cd "c:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2\" ; if ($?) { g++ P2Q1.cpp -o P2Q1 } ; if ($?) { .\P2Q1 }
What distance will you travel?
81
Fare of distance 81 kms: 76.95 Rs
PS C:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2>

```

**2. Use suitable code to produce the output as shown below:**

**x value y value expressions results**

```

10 | 5 | x=y+3 | x=8
10 | 5 | x=y-2 | x=3
10 | 5 | x=y*5 | x=25
10 | 5 | x=x/y | x=2
10 | 5 | x=x%y | x=0

```

**CODE:**

```

#include <iostream>
using namespace std;
int main() {
    int x=10,y=5;
    cout<<"Result:\n";
    cout<<"x value\t"<<"y value\t"<<"Expressions\t"<<"Result\n";
    cout<<x<<" \t|"<<y<<" \t|"<<"x=y+3\t"<<"\t|"<<y+3<<"\n";
    cout<<x<<" \t|"<<y<<" \t|"<<"x=y-2\t"<<"\t|"<<y-2<<"\n";
    cout<<x<<" \t|"<<y<<" \t|"<<"x=y*5\t"<<"\t|"<<y*5<<"\n";
}

```

```
cout<<x<<" \t| "<<y<<" \t| "<<"x=x/y\t"<<"\t| "<<x/y<<"\n";
cout<<x<<" \t| "<<y<<" \t| "<<"x=x%y\t"<<"\t| "<<x%y<<"\n";
return 0;
}
```

**OUTPUT:**

```
PS C:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2> cd "c:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2\" ; if ($?) { g++ P2Q2.cpp -o P2Q2 } ; if ($?) { .\P2Q2 }
Result:
x value y value Expressions      Result
10      5      |x=y+3      |8
10      5      |x=y-2      |3
10      5      |x=y*5      |25
10      5      |x=x/y      |2
10      5      |x=x%y      |0
PS C:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2>
```

**3. Prompt the user to input the integral value of a and print out the result as shown below:**

**The value of a is: 35**

.....

**The value of ++a is: 36**

**Now the value of a is: 36**

  

**The value of a++ is: 36**

**Now the value of a is: 37**

  

**The value of --a is:36**

**Now the value of a is:36**

  

**The value of a-- is: 36**

**Now the value of a is: 35**

**CODE:**

```
#include <iostream>
using namespace std;
int main() {
    int a;
    cout<<"Enter a value: ";
    cin>>a;
    cout<<"The value of a is: "<<a;
    cout<<"\n.....\n";
    cout<<"The value of ++a is: "<<++a;
    cout<<"\nNow the value of a is: "<<a;
```

```

cout<<"\n\nThe value of a++ is: "<<a++;
cout<<"\nNow the value of a is: "<<a;
cout<<"\n\nThe value of --a is: "<<--a;
cout<<"\nNow the value of a is: "<<a;
cout<<"\n\nThe value of a-- is: "<<a--;
cout<<"\nNow the value of a is: "<<a;
return 0;
}

```

**OUTPUT:**

```

PS C:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2> cd "c:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2\" ; if ($?) { g++ P2Q3.cpp -o P2Q3 } ; if ($?) { .\P2Q3 }
Enter a value: 35
The value of a is: 35
.....
The value of ++a is: 36
Now the value of a is: 36

The value of ++a is: 36
Now the value of a is: 37

The value of --a is: 36
Now the value of a is: 36

The value of a-- is: 36
Now the value of a is: 35
PS C:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2>

```

**4. Given the following pseudo code, write a c++ code that executes it.**

- a. read x
- b. read y
- c. compute  $p=x*y$
- d. compute  $s=x+y$
- e.  $total=s^2+p*(s-x)*(p+y)$
- f. print total

**CODE:**

```

#include <iostream>
using namespace std;
int main() {
    int x,y,s,p,total;
    cout<<"Enter value of x: ";
    cin>>x;
    cout<<"Enter value of y: ";
    cin>>y;
    p=x*y;
    s=x+y;
    total=(s*s)+p*(s-x)*(p+y);
}

```

```

    cout<<"Total: "<<total;
    return 0;
}

```

**OUTPUT:**

```

PS C:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2> cd "c:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2\" ; if ($?) { g++ P2Q4.cpp -o P2Q4 } ; if ($?) { .\P2Q4 }
Enter value of x: 2
Enter value of y: 4
Total: 420
PS C:\Users\admin\Google Drive\B-Tech\SEM-2\ESFP-2\ESFP-Practicals\Prac-2>

```

---

### Post Practical Questions:

Write output of given programs:

1. **#include <stdio.h>**

**using namespace std;**

**int main()**

**{**

**int a = 21;**

**int c ;**

**c = a++;**

**cout << c;**

**return 0;**

**}**

**OUTPUT: 21**

2. **#include <stdio.h>**

**using namespace std;**

**int main()**

**{**

**int x = 5, y = 5;**

```
cout << ++x << --y << endl;  
return 0;  
}
```

**OUTPUT:** 64

3. **#include <stdio.h>**

**using namespace std;**

**int main()**

**{**

**int num1 = 5;**

**int num2 = 3;**

**int num3 = 2;**

**num1 = num2++;**

**num2 = --num3;**

**cout << num1 << num2 << num3;**

**return 0;**

**}**

**OUTPUT:** 311