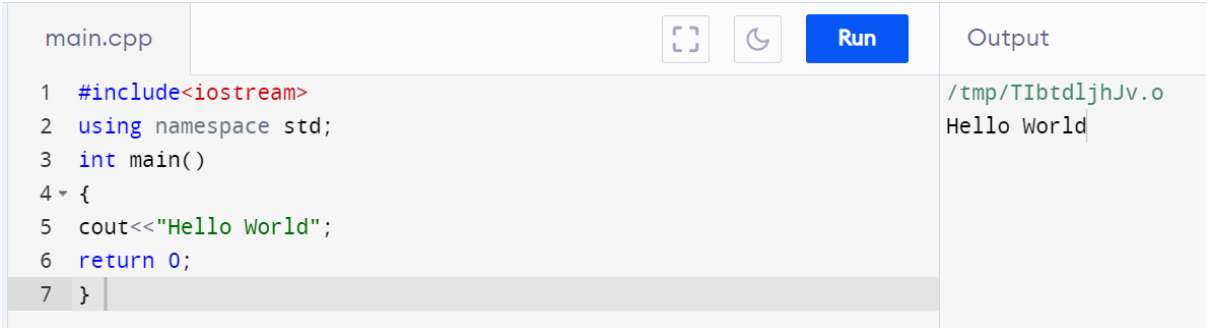
C++ ASSIGNMENT 1.1

1.Write a program to print “Hello World” on the screen.

Code

```
#include
using namespace std;
int main()
{
cout<<"Hello World";
return 0;
}
```

Output:--



2.Write a program that generate the following output

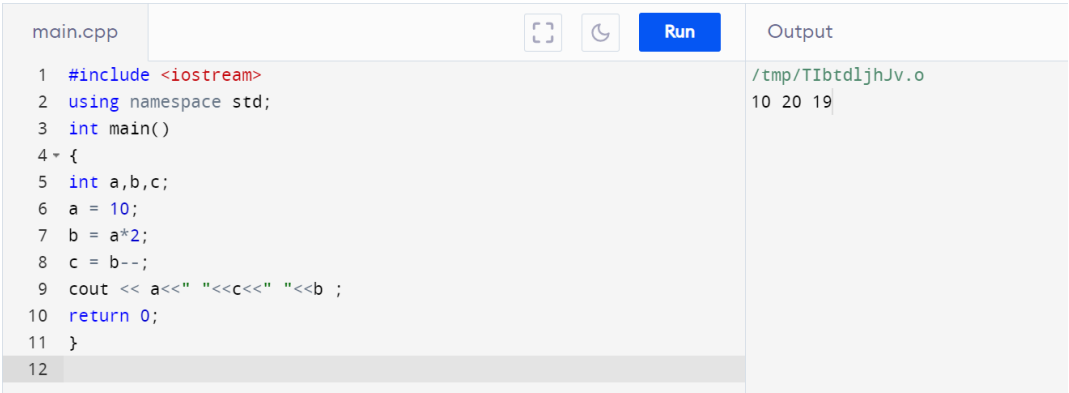
10, 20, 19

Use an integer constant for 10, an arithmetic C++ ASSIGNMENT operator to generate the 20, and a decrement operator to generate 19.

Code:--

```
#include <iostream>
using namespace std;
int main()
{
int a,b,c;
a = 10;
b = a*2;
c = b--;
cout << a<<" "<<c<<" "<<b ;
return 0;
}
```

Output:--



3.Write a program that asks the user to enter a radius value and then compute the volume of a sphere with the input radius.

Code –

```
#include <iostream>
using namespace std;
int main()
{
double r,v;
cout << "Enter Radius of Sphere = ";
cin >> r;
v = (4.0/3.0) * (22.0/7.0) * (r*r*r);
cout << "Volume of Sphere = " << v;
return 0;
}
```

Output :--

4.Write a program that takes three input of sides of a triangle. The program should indicate whether the triangle would be formed or not. If it can be formed it also indicates the type.

Code:--

```
#include <iostream>
using namespace std;
int main()
{
double s1,s2,s3;
cout << "Enter lenght of Side 1 = ";
cin >> s1;
cout << "Enter lenght of Side 2 = ";
cin >> s2;
cout << "Enter lenght of Side 3 = ";
cin >> s3;
if(((s1+s2)>s3) || ((s2+s3)>s1) || ((s1+s3)>s2))
{
cout << "Triangle Will Form" << "\n";
if(s1==s2==s3)
{
cout << "Its Equilateral Triangle";
}
```

```
else
if((s1==s2)||(s2==s3)||(s3==s1))
{
cout << "Its Isoceles Triangle";
}
else
if((s1=!s2)||(s2=!s3)||(s3=!s1))
{
cout << "Its Scalene Triangle";
}
}
else
{
cout << "Triangle Will not Form";
}
return 0;
}
```

Output :--

```
Enter lenght of Side 1 = 5
Enter lenght of Side 2 = 5
Enter lenght of Side 3 = 5
Triangle Will Form
Its Isoceles Triangle
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1.17.5
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-3cgy5p53.3ls' '--stdout=M
5w.y5g' '--stderr=Microsoft-MIEngine-Error-i2f3lyft.pwi' '--pid=Microsoft-MIEngine-
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter lenght of Side 1 = 1
Enter lenght of Side 2 = 2
Enter lenght of Side 3 = 3
Triangle Will Form
Its Scalene Triangle
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1.17.5
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-d335w2if.uik' '--stdout=M
c1.avm' '--stderr=Microsoft-MIEngine-Error-5uiymbzb.deo' '--pid=Microsoft-MIEngine-
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter lenght of Side 1 = 8
Enter lenght of Side 2 = 4
Enter lenght of Side 3 = 2
Triangle Will Form
Its Scalene Triangle
PS D:\Prasad\Cpp_prgm>
```

5.Write a program that takes one input as number and it will display whether the number is +ve, -ve or zero. If the number is +ve, then it will display whether the number is odd or even.

Code :--

```
#include <iostream>
using namespace std;
int main()
{
int a;
cout << "Enter Number = ";
cin >> a;
if(a>0)
{
```

```
cout << "Number Is Positive" << "\n";
{
if((a%2)==0)
cout << "Number Is Even";
else
cout << "Number Is Odd";
}
}
else
if(a<0)
{
cout << "Number Is Negative";
}
else
if(a==0)
{
cout << "Number Is Zero";
}
return 0;
}
```

Output:--

```
Enter Number = 24
Number Is Positive
Number Is Even
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-wirzwmck.mcj' '--std
z1.s5a' '--stderr=Microsoft-MIEngine-Error-ndmfkqig.twt' '--pid=Microsoft-MIEn
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Number = 17
Number Is Positive
Number Is Odd
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-zqlwn2dc.4sn' '--std
vw.1ej' '--stderr=Microsoft-MIEngine-Error-yk0ydysi.b1t' '--pid=Microsoft-MIEn
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Number = -2
Number Is Negative
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-htarsbrf.vmg' '--std
ok.tdf' '--stderr=Microsoft-MIEngine-Error-tx0xyeli.db3' '--pid=Microsoft-MIEn
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Number = 0
Number Is Zero
PS D:\Prasad\Cpp_prgm>
```

6.Write a program which takes username as input and it greets to user with his name.

Code:--

```
#include <iostream>
using namespace std;
int main()
{
string n ;
cout << "Enter Your Name = ";
cin >> n;
cout<<"Hello "<<n ;
return 0;
}
```

Output:--

main.cpp

```
#include <iostream>
using namespace std;
int main()
{
string n ;
cout << "Enter Your Name = ";
cin >> n;
cout<<"Hello "<<n ;
return 0;
}
```

Output

```
/tmp/BRUyw6oHRI.o
Enter Your Name = Prasad
Hello Prasad
```

7.Write a program, which takes two integer numbers as input and it shows their exchanged value. (Don't use third variable)

Code:--

```
#include <iostream>
using namespace std;
int main()
{
int a,b;
cout << "Enter Number Value of A = ";
cin >> a;
cout << "Enter Number Value of B = ";
cin >> b;
cout << " Value of A = "<< b <<"\n";
cout << " Value of B = "<< a <<"\n";
return 0;
}
```

Output:--

main.cpp

```
#include <iostream>
using namespace std;
int main()
{
int a,b;
cout << "Enter Number Value of A = ";
cin >> a;
cout << "Enter Number Value of B = ";
cin >> b;
cout << " Value of A = "<< b <<"\n";
cout << " Value of B = "<< a <<"\n";
return 0;
}
```

Output

```
/tmp/BRUyw6oHRI.o
Enter Number Value of A = 4
Enter Number Value of B = 2
Value of A = 2
Value of B = 4
```

8.WAP to check Leap Year.

Code:--

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

```
{
int a,b;
cout << "Enter Year = ";
cin >> a;
if((a%4)==00)
{
if((a%100)==00)
{
if((a%400)==00)
{
cout << " This is Leap Year";
}
else
{
cout << " This is Not Leap Year";
}
}
else
{
cout << " This is Leap Year";
}
}
else
{
cout << " This is Not Leap Year";
}
return 0;
}
```

Output:--

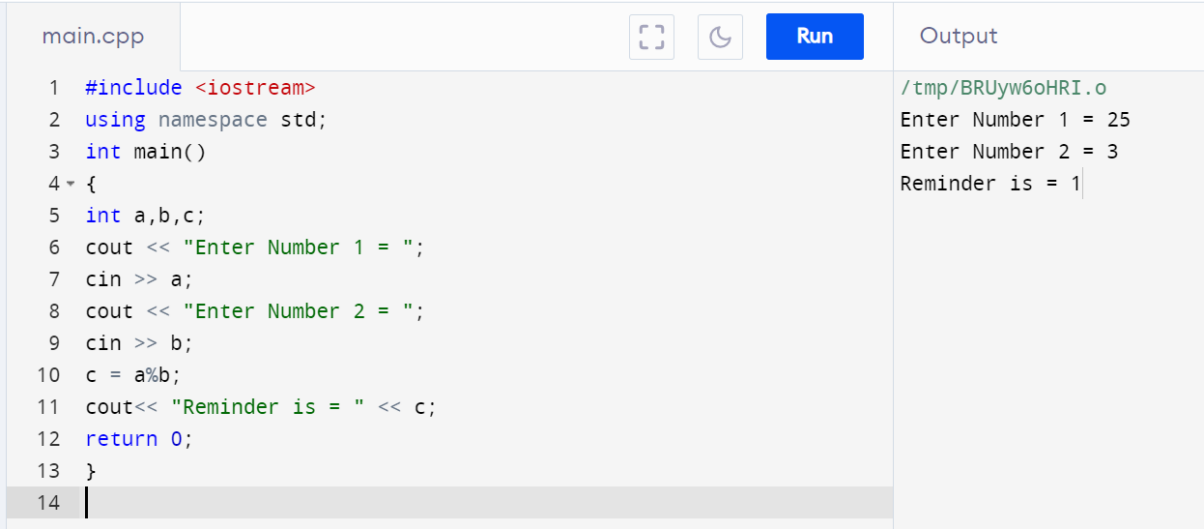
```
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-j45tp444.lez' '--s
am.qys' '--stderr=Microsoft-MIEngine-Error-0c2kztpo.s0z' '--pid=Microsoft-MI
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Year = 2000
 This is Leap Year
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-zyn14aj3.zls' '--s
zr.t5u' '--stderr=Microsoft-MIEngine-Error-xfqzdebv.vx0' '--pid=Microsoft-MI
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Year = 2018
 This is Not Leap Year
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-2n1gp2jk.fea' '--s
2a.44i' '--stderr=Microsoft-MIEngine-Error-drjczbvx.4q0' '--pid=Microsoft-MI
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Year = 2024
 This is Leap Year
PS D:\Prasad\Cpp_prgm>
```

9.WAP for finding remainder of division of 2 numbers.

Code:--

```
#include <iostream>
using namespace std;
int main()
{
int a,b,c;
cout << "Enter Number 1 = ";
cin >> a;
cout << "Enter Number 2 = ";
cin >> b;
c = a%b;
cout<< "Reminder is = " << c;
return 0;
}
```

Output:--



10.WAP to calculate Area of Rectangle.

Code:--

```
#include <iostream>
using namespace std;
int main()
{
int l,w,a;
cout << "Enter Length = ";
cin >> l;
cout << "Enter Width = ";
cin >> w;
a = l*w;
cout << "Area of Rectangle = " << a;
return 0;
}
```

Output:--

main.cpp

```cpp
#include <iostream>
using namespace std;
int main()
{
int l,w,a;
cout << "Enter Length = ";
cin >> l;
cout << "Enter Width = ";
cin >> w;
a = l*w;
cout << "Area of Rectangle = " << a;
return 0;
}
```

Output

```
/tmp/BRUyw6oHRI.o
Enter Length = 24
Enter Width = 15
Area of Rectangle = 360
```

11.WAP to calculate Area of Square.

Code:--

```
#include <iostream>
using namespace std;
int main()
{
int l,a;
cout << "Enter Length of Side = ";
cin >> l;
a = (l*l);
cout << "Area of Square = " << a;
return 0;
}
```

Output:--

main.cpp

```cpp
#include <iostream>
using namespace std;
int main()
{
int l,a;
cout << "Enter Length of Side = ";
cin >> l;
a = (l*l);
cout << "Area of Square = " << a;
return 0;
}
```

Output

```
/tmp/9YvC9jafxw.o
Enter Length of Side = 24
Area of Square = 576
```

12.WAP to calculate the area of Triangle.

Code:--

```
#include <iostream>
using namespace std;
int main()
{
double b,h,a;
```

```
cout << "Enter Length of Base = ";
cin >> b;
cout << "Enter Length of Height = ";
cin >> h;
a = (1.0/2.0)*b*h;
cout << "Area of Triangle = " << a;
return 0;
}
```

Output:--

13.WAP to calculate Area and Circumference of Circle.

Code:--

```
#include <iostream>
using namespace std;
int main()
{
double r,a,c;
cout << "Enter Radius = ";
cin >> r;
a = (22.0/7.0)*(r*r);
c = (2.0)*(22.0/7.0)*r;
cout << "Area of Circle = " << a <<"\n";
cout << "Circumfrence of Circle = " << c ;
return 0;
}
```

Output:--

14.WAP for two item’s weight (floating points' values) and number of purchase (floating points' values) and calculate the average value of the items.

Test Data:
Weight - Item1: 15
No. of item1: 5
Weight - Item2: 25
No. of item2: 4
Expected Output:
Average Value = 19.444444

Code:--

```
#include <iostream>
using namespace std;
int main()
{
float w1,w2,n1,n2,avg;
cout << "Weight of Item NO 1 = ";
cin >> w1;
cout << "Number of Item NO 1 = ";
cin >> n1;
cout << "Weight of Item NO 2 = ";
cin >> w2;
cout << "Number of Item NO 2 = ";
cin >> n2;
avg = (((w1*n1)+(w2*n2))/(n1+n2));
cout << "Average value of the items = " << avg ;
return 0;
}
```

Output:--

15.WAP to calculate a bike's average consumption from the given total distance (integer value) travelled (in km) and spent fuel.

Test Data:
Input total distance in km: 350
Input total fuel spent in litres: 5
Expected Output:
Average consumption (km/lt) 70.00
Code:--

```
#include <iostream>
using namespace std;
int main()
{
float a,b,cons;
cout << "Input Total Distance (Km)= ";
cin >> a;
cout << "Input Total Fuel (Lit)= ";
cin >> b;
cons = a/b;
cout << "Average Consumption (Km/Lit)= " << cons;
return 0;
}
```

Output:--

16.Write a program that will give the grade of the student based on the percentage he got in the course.

Use the following criteria for assigning grades:
Grade = A (when percentage >= 60)
Grade = B (when percentage >= 50 and percentage < 60)
Grade = C (when percentage >= 40 and percentage < 50)
Grade = D (when percentage >= 30 and percentage < 40)
Grade = E (when percentage >= 20 and percentage < 30)

Code:--

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

```
double p;
char g;
cout << "Enter Percentange = ";
cin >> p;
if(p>=60)
{
g = 'A';
cout<<"Grade "<< g;
}
else
if((p>=50)&&(p<60))
{
g = 'B';
cout<<"Grade "<< g;
}
else
if((p>=40)&&(p<50))
{
g = 'C';
cout<<"Grade "<< g;
}
else
if((p>=30)&&(p<40))
{
g = 'D';
cout<<"Grade "<< g;
}
else
if((p>=20)&&(p<30))
{
g = 'E';
cout<<"Grade "<< g;
}
return 0;
}
```

Output:--

```
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.c
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-pza22lta.dc
45.4pp' '--stderr=Microsoft-MIEngine-Error-txdaq013.rgq' '--pid=Micro
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Percentange = 95
Grade A
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.c
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-m1u01ott.q0
n0.e0z' '--stderr=Microsoft-MIEngine-Error-1s1x0fxx.gqu' '--pid=Micro
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Percentange = 58
Grade B
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.c
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-uj51lw5f.me
js.fvs' '--stderr=Microsoft-MIEngine-Error-5ndqfwkg.ejm' '--pid=Micro
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Percentange = 44
Grade C
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.c
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-rq5p5nn2.kg
4e.mwj' '--stderr=Microsoft-MIEngine-Error-1p23sm1w.0wj' '--pid=Micro
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Percentange = 35
Grade D
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.c
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-hikswtej.2a
op.ium' '--stderr=Microsoft-MIEngine-Error-ccq3ws3x.i1u' '--pid=Micro
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Percentange = 25
Grade E
PS D:\Prasad\Cpp_prgm>
```

17.WAP to check whether a number is divisible by 5.

Code:--

```
#include <iostream>
using namespace std;
int main()
{
int a,b;
cout << "Enter Number = ";
cin >> a;
if((a%5)==0)
{
cout<<"Number is Divisible by 5";
}
else
{
cout<<"Number is Not Divisible by 5";
}
return 0;
}
```

Output:--

```
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-0vjmzb5s.
p2.f4s' '--stderr=Microsoft-MIEngine-Error-iv4xnfoj.ncf' '--pid=Mic
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Number = 2500
Number is Divisible by 5
PS D:\Prasad\Cpp_prgm>  & 'c:\Users\HP\.vscode\extensions\ms-vscode
\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-q4yo5pfb.
ff.2up' '--stderr=Microsoft-MIEngine-Error-fkubpyai.czr' '--pid=Mic
C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Number = 2409
Number is Not Divisible by 5
PS D:\Prasad\Cpp_prgm>
```

18.WAP to input basic salary of an employee and calculate its Gross salary according to following:

Basic Salary <= 10000 : HRA = 20%, DA = 80%

Basic Salary <= 20000 : HRA = 25%, DA = 90%

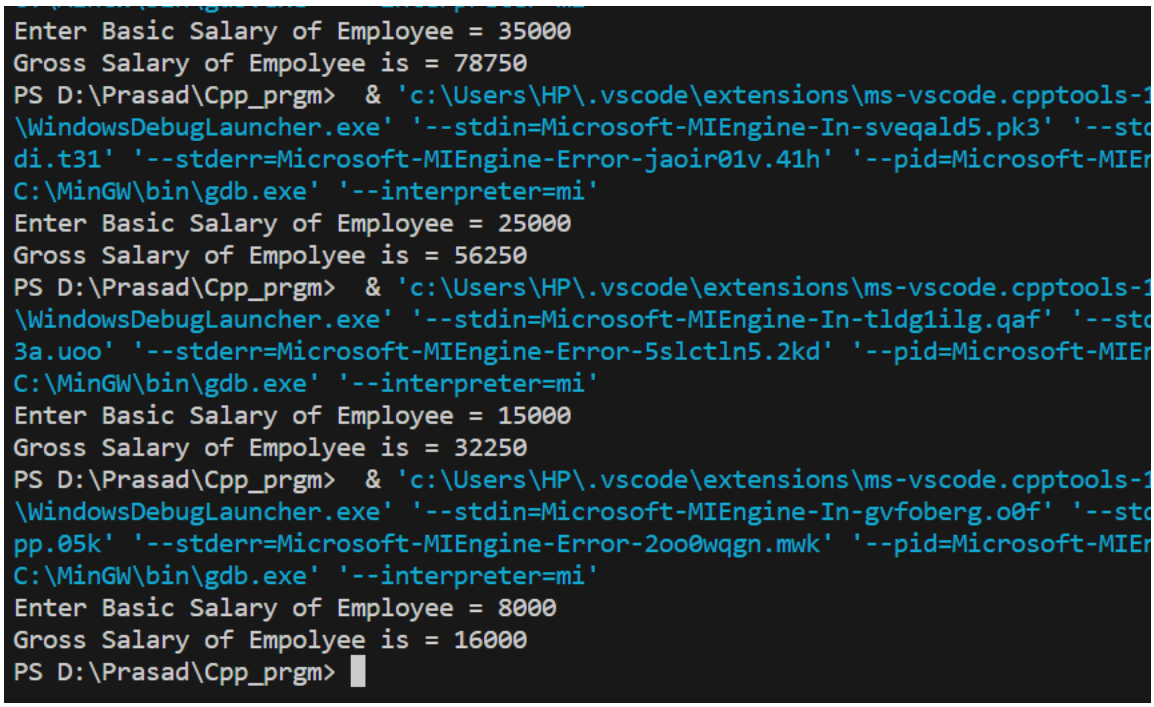
Basic Salary > 20000 : HRA = 30%, DA = 95%

Code:--

```
#include <iostream>
using namespace std;
int main()
{
float BSal ,HRA ,DA ,GrossSal;
cout << "Enter Basic Salary of Employee = ";
cin >> BSal ;
if(BSal<=10000)
```

```
{
HRA = BSal*0.2;
DA = BSal*0.8;
GrossSal = BSal + HRA + DA ;
cout << "Gross Salary of Empolyee is = " << GrossSal ;
}
else
if((BSal<=20000)&&(BSal>10000))
{
HRA = BSal*0.25;
DA = BSal*0.9;
GrossSal = BSal + HRA + DA ;
cout << "Gross Salary of Empolyee is = " << GrossSal ;
}
else
if(BSal>20000)
{
HRA = BSal*0.3;
DA = BSal*0.95;
GrossSal = BSal + HRA + DA ;
cout << "Gross Salary of Empolyee is = " << GrossSal ;
}
return 0;
}
```

Output:--



19.WAP to input electricity unit charges and calculate total electricity bill according to the given condition:
For first 50 units Rs. 0.50/unit
For next 100 units Rs. 0.75/unit
For next 100 units Rs. 1.20/unit
For unit above 250 Rs. 1.50/unit
An additional surcharge of 20% is added to the bill

Code:--

```
#include <iostream>
using namespace std;
int main()
{
float a,b;
cout << "Enter Number Of Units = ";
cin >> a;
if (a<=50)
{
b = (0.50*a);
cout << "Electricity Bill is = " << b ;
}
else
if ((a>50)&&(a<=150))
{
b = (0.75*a);
cout << "Electricity Bill is = " << b;
}
else
if ((a>150)&&(a<=250))
{
b = (1.20*a);
cout << "Electricity Bill is = " << b;
}
else
if (a>250)
{
b = (1.50*a)+ (0.20*a);
cout << "Electricity Bill is = " << b;
}
return 0;
}
```

Output:--

```
Enter Number Of Units = 44
Electricity Bill is = 22
PS C:\Users\HP\Desktop>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1.17.5-win32-x64\debugAdapters\bi
n\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-lxxky1wc.ojj' '--stdout=Microsoft-MIEngine-Out-eoei4
fld.qfd' '--stderr=Microsoft-MIEngine-Error-jibeanhu.s3z' '--pid=Microsoft-MIEngine-Pid-q5fgbouh.3md' '--dbgExe
=C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Number Of Units = 135
Electricity Bill is = 101.25
PS C:\Users\HP\Desktop>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1.17.5-win32-x64\debugAdapters\bi
n\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-tgsy2juw.1g3' '--stdout=Microsoft-MIEngine-Out-txwks
big.mfw' '--stderr=Microsoft-MIEngine-Error-lgi2g0sl.3fb' '--pid=Microsoft-MIEngine-Pid-zepa2gcg.jj3' '--dbgExe
=C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Number Of Units = 248
Electricity Bill is = 297.6
PS C:\Users\HP\Desktop>  & 'c:\Users\HP\.vscode\extensions\ms-vscode.cpptools-1.17.5-win32-x64\debugAdapters\bi
n\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-wl23f4fi.40t' '--stdout=Microsoft-MIEngine-Out-p0zvl
nw4.3ot' '--stderr=Microsoft-MIEngine-Error-iazytcds.aqm' '--pid=Microsoft-MIEngine-Pid-hwx50y1x.o3r' '--dbgExe
=C:\MinGW\bin\gdb.exe' '--interpreter=mi'
Enter Number Of Units = 300
Electricity Bill is = 510
PS C:\Users\HP\Desktop> d:\Prasad\Cpp_prgm\1st.cpp
PS C:\Users\HP\Desktop>
```