PRACTICAL QUESTIONS- 10 DEC 2020

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Q1.To demonstrate the results of logical expressions.

Program

```
#include <bits/stdc++.h>
#include <math.h>
using namespace std;
int main()
{cout<<"5 && -3 is: "<<(5&&-3)<<endl;
cout<<"5 && 0 is: "<<(5&&0)<<endl;
cout<<"0 && -3 is: "<<(0&&-3)<<endl;
cout<<"5 || 0 is: "<<(5||0)<<endl;
cout<<"!5 &&!0 is: "<<(!5&&!0)<<endl;
cout<<"5 && !0 is: "<<(5&&!0)<<endl;

return 0;
}
```

Output

```
5 && -3 is: 1
5 && 0 is: 0
0 && -3 is: 0
5 || 0 is: 1
!5 &&!0 is: 0
5 && !0 is: 1

Process returned 0 (0x0)   execution time : 0.315 s
Press any key to continue.
```

Q.2 To demonstrate the results of relational expressions.

```
#include <bits/stdc++.h>
#include <math.h>
using namespace std;
int main()
{int a=5;
int b=3;
cout<<"a<b :"<<(a<b)<<endl;
cout<<"a==b:"<<(a==b)<<endl;
cout<<"a!=b:"<<(a!=b)<<endl;
cout<<"a>=b:"<<(a>=b)<<endl;
return 0;
}
```

```
a<b :0
a==b:0
a!=b:1
a>=b:1

Process returned 0 (0x0)   execution time : 0.032 s
Press any key to continue.
```

Q.2 WAP to display the grade of a student when she enters her marks.

Program

```
#include <bits/stdc++.h>
#include <math.h>
using namespace std;
int main()
{int score;
char grade;
cout<<"Enter your score: ";
cin>>score;
if (score>=90)
    grade='A';
else if(score>=80)
    grade='B';
else if(score>=70)
    grade='C';
else if(score>=60)
    grade='D';
else
    grade='F';
cout<<"Your grade is: "<<grade;
return 0;
}
```

Output

```
Enter your score: 33
Your grade is: F
Process returned 0 (0x0)   execution time : 4.771 s
Press any key to continue.
```

Q.4 WAP to calculate charges of parking lot.

Program

```
#include <bits/stdc++.h>
#include <math.h>
using namespace std;
int main()
{char veh;
int hr_en,min_en,hr_lf,min_lf,hrs;
float charge;
cout<<"PARKING LOT CHARGES\n";
cout<<"1.T for Truck\n2.C for Car\n3.B for Bus\n";
cout<<"Enter type of vehicle: ";
cin>>veh;
cout<<"\nEnter hour when you entered parking(0-24):";
cin>>hr_en;
cout<<"Enter minutes when you entered parking(0-60):";
cin>>min_en;
cout<<"Enter hour when you left the parking(0-24):";
cin>>hr_lf;
cout<<"Enter minutes when you left parking(0-60):";
cin>>min_lf;
cout<<"\nTIME-IN\t\t"<<setfill('0')<<setw(2)<<hr_en<<":"<<setfill('0')<<setw(2)<<min_en;
cout<<"\nTIME-OUT\t"<<setfill('0')<<setw(2)<<hr_lf<<":"<<setfill('0')<<setw(2)<<min_lf;
cout<<"\n\t\t-------";
cout<<"\n\t\t-------";
hrs=(hr_lf)-(hr_en);
if((min_lf-min_en)>0)
    hrs+=1;
if(veh=='C'||veh=='c')
    {if(hrs>3)
        charge=1.50*hrs;
     else
        charge=0;
    }
else if(veh=='T'||veh=='t')
    {if(hrs<=2)
        charge=1.00*hrs;
     else
        charge=(1.00*2)+(2.30*(hrs-2));
    }
else if(veh=='B'||veh=='b')
    {if(hrs<=1)
        charge=2.00*hrs;
     else
        charge=2.00+(3.70*(hrs-1));
    }
else
    cout<<"\nEnter the correct vehicle!!\n";
cout<<"\nROUNDED TOTAL HOURS\t"<<hrs;
cout<<"\nTOTAL CHARGE:\t\t"<<charge;

return 0;
}
```

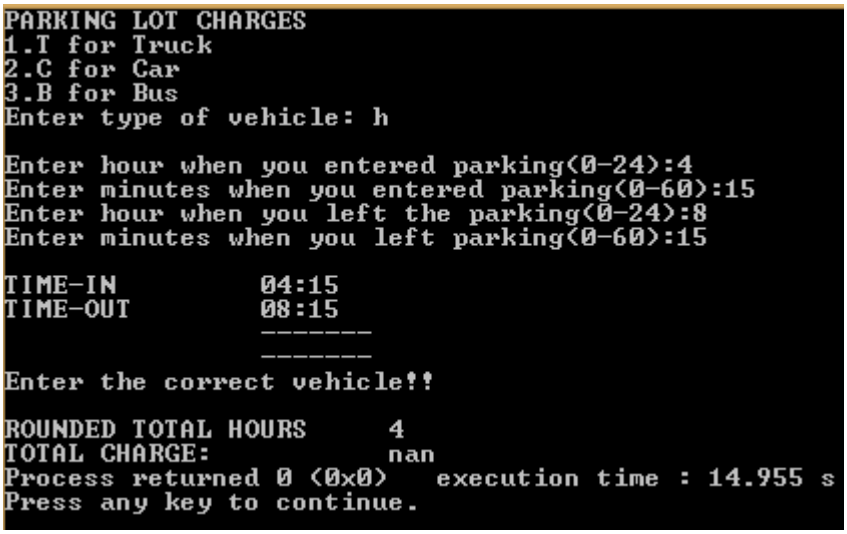
Output

Let’s check out our program through various input and outputs

```
PARKING LOT CHARGES
1.T for Truck
2.C for Car
3.B for Bus
Enter type of vehicle: c

Enter hour when you entered parking(0-24):12
Enter minutes when you entered parking(0-60):40
Enter hour when you left the parking(0-24):14
Enter minutes when you left parking(0-60):22

TIME-IN         12:40
TIME-OUT        14:22
                -------
                -------
ROUNDED TOTAL HOURS     2
TOTAL CHARGE:           0
Process returned 0 (0x0)   execution time : 72.166 s
Press any key to continue.
```

```
PARKING LOT CHARGES
1.T for Truck
2.C for Car
3.B for Bus
Enter type of vehicle: b

Enter hour when you entered parking(0-24):8
Enter minutes when you entered parking(0-60):20
Enter hour when you left the parking(0-24):8
Enter minutes when you left parking(0-60):40

TIME-IN         08:20
TIME-OUT        08:40
                -------
                -------
ROUNDED TOTAL HOURS     1
TOTAL CHARGE:           2
Process returned 0 (0x0)   execution time : 10.619 s
Press any key to continue.
```

```
PARKING LOT CHARGES
1.T for Truck
2.C for Car
3.B for Bus
Enter type of vehicle: t

Enter hour when you entered parking(0-24):2
Enter minutes when you entered parking(0-60):0
Enter hour when you left the parking(0-24):3
Enter minutes when you left parking(0-60):59

TIME-IN         02:00
TIME-OUT        03:59
                -------
                -------
ROUNDED TOTAL HOURS     2
TOTAL CHARGE:           2
Process returned 0 (0x0)   execution time : 12.051 s
Press any key to continue.
```


PARKING LOT CHARGES
1.T for Truck
2.C for Car
3.B for Bus
Enter type of vehicle: h
Enter hour when you entered parking(0-24):4
Enter minutes when you entered parking(0-60):15
Enter hour when you left the parking(0-24):8
Enter minutes when you left parking(0-60):15
TIME-IN 04:15
TIME-OUT 08:15
Enter the correct vehicle!!
ROUNDED TOTAL HOURS 4
TOTAL CHARGE: nan
Process returned 0 (0x0) execution time : 14.955 s
Press any key to continue.

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