Lab Assignment 4

Yeeshukant Singh | 200002082

Q1. Read an integer value. Assume it is the number of a month of the year; print out the name of that month.

Ans:

```
#include<iostream>
using namespace std;
int main(){
    int month=0;
    cin>>month;
    if(month>0 && month<13){
         if(month==1)
            cout<<"January\n";
        else if(month==2)
            cout<<"February\n";
        else if(month==3)
            cout<<"March\n";
        else if(month==4)
           cout<<"April\n";
         else if(month==5)
            cout<<"May\n";
        else if(month==6)
            cout<<"June\n";
        else if(month==7)
            cout<<"July\n";
        else if(month==8)
            cout<<"August\n";
        else if(month==9)
            cout<<"September\n";
        else if(month==10)
            cout<<"October\n";
        else if(month==11)
            cout<<"November\n";
        else if(month==12)
            cout<<"December\n";
    }
    else
        cout<<"Not valid number\n";
    return 0;
}
```

Output:

```
~/My-files $ ./a.out
0
Not valid month
```

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```
~/My-files $ ./a.out
13
Not valid month
~/My-files $ ./a.out
5
May
```

Q2. Given as input three integers representing a date as day, month, year, print out the number day, month and year for the following day's date.

Ans:

```
#include<iostream>
using namespace std;
int leapyear(int x);
int main(){
    int date=0, month=0, year=0;
    cin>>date>>month>>year;
    int prevdate=date, prevmonth=month, prevyear=year;
    if(month==1||month==3||month==5||month==7||month==8||month==10||month==12){
        if(date<=30)
            date++;
        else if(date==31&&month<12){
            date=1;
            month++;
        }
        else if(date==31&&month==12){
            date=1;
            month=1;
            year++;
        }
    }
    else if(month==4||month==6||month==9||month==11){
        if(date<=29)
            date++;
        else if(date==30){
            date=1;
            month++;
        }
    }
    else if(month==2){
        if(leapyear(year)){
            if(date<29)
                date++;
            else if(date==29){
                date=1;
                month++;
            }
```

```
        }
        else{
            if(date<28)
                date++;
            else if(date==28){
                date=1;
                month++;
            }
        }
    }
    if(date==prevdate||month<1||month>12)
        cout<<"Enter a valid date\n";
    else
        printf("Date following %02d:%02d:%02d is
%02d:%02d:%02d\n",prevdate,prevmonth,prevyear, date, month, year);
    return 0;
}
int leapyear(int a){
    if(a%400==0)
        return 1;
    else if(a%100==0)
        return 0;
    else if(a%4==0)
        return 1;
    else
        return 0;
}
```

Output:

```
~/My-files $ ./a.out
28 2 1992
Date following 28:02:1992 is 29:02:1992
~/My-files $ ./a.out
31 12 1999
Date following 31:12:1999 is 01:01:2000
```

Q3. Write a program which reads two integer values. If the first is less than the second, print the message: ‘up’. If the second is less than the first, print the message: ‘down’. If the numbers are equal, print the message: ‘equal’. If there is an error reading the data, print a message: ‘error’.

Ans:

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

```
    int a, b;
    if(scanf("%d%d",&a,&b)==2){
        if(a<b)
            cout<<"Up\n";
        else if(a>b)
            cout<<"Down\n";
        else if(a==b)
            cout<<"Equal\n";
    }
    else
        cout<<"error\n";
    return 0;
}
```

Output:

```
~/My-files $ ./a.out
3 5
Up
~/My-files $ ./a.out
5 3
Down
~/My-files $ ./a.out
4 4
Equal
~/My-files $ ./a.out
two three
error
```

Q4. Given as input an integer number of seconds, print as output the equivalent time in hours, minutes and seconds.

Ans:

```
#include<iostream>
using namespace std;
int main(){
    int time;
    cin>>time;
    int prevt=time;
    int hour=time/3600;
    time=time%3600;
    int mint=time/60;
    int sec=time%60;
    printf("%d seconds is equivalent to %d hours %d minutes %d seconds\n",
prevt,hour,mint,sec);
```

```
    return 0;
}
```

Output:

```
~/My-files $ ./a.out
7322
7322 seconds is equivalent to 2 hours 2 minutes 2 seconds
~/My-files $ ./a.out
46
46 seconds is equivalent to 0 hours 0 minutes 46 seconds
~/My-files $ ./a.out
90
90 seconds is equivalent to 0 hours 1 minutes 30 seconds
```

Q5. Write a program to read a "float" representing a number of degrees Celsius, and print as a "float" the equivalent temperature in degrees Fahrenheit.

Ans:

```
#include<iostream>
using namespace std;
int main(){
    float ctemp;
    cin>>ctemp;
    float ftemp=(ctemp*9/5)+32;
    printf("%0.1f degrees Celsius converts to %0.1f degrees Fahrenheit\in",
ctemp, ftemp);
    return 0;
}
```

Output:

```
~/My-files $ ./a.out
100.0
100.0 degrees Celsius converts to 212.0 degrees Fahrenheit
~/My-files $ ./a.out
-40
-40.0 degrees Celsius converts to -40.0 degrees Fahrenheit
~/My-files $ ./a.out
37
37.0 degrees Celsius converts to 98.6 degrees Fahrenheit
```