

# ASSIGNMENT 2

**Q1 Write a C Program to calculate the absolute value of an integer.**

**Ex -**

**1) Input = 100 Expected Output = 100**

**2) Input = -200 Expected Output = 200**

```
#include<stdio.h>
int main()
{
    int a,c;
    printf("Input: ");
    scanf("%d",&a);
    if(a<0){
        a=a*(-1);
        printf("\nAbsolute value is : %d \n",a);
    }else{
        printf("\nAbsolute value is : %d \n",a);
    }
    return 0;
}
```

**Q2 Write a C Program to Calculate the Average of a Set of Grades and Counting the Number of Failing Test Grades (Take Grade as fail if less than 65)**

**A) Use for loop**

**B) Use While loop**

**C) Use Do-While**

**A) for loop**

```
#include<stdio.h>
int main()
{
    int g,i,count=0;
    float sum=0,m;
    printf("Enter the number of grades:");
    scanf("%d",&g);
    for(i=1;i<=g;i++){
        printf("Enter grade #d: ",i);
        scanf("%f",&m);
        sum+=m;
        if(m>=0 && m<65){
            count+=1;
        }
    }
    printf("\nGrade average= %.2f %% \n",(sum/g));
    printf("Number of failures: %d \n",count);
    return 0;
}
```

### B) While loop

```
include<stdio.h>
int main()
{
    int g,i=1,count=0;
    float sum=0,m;
    printf("Enter the number of grades:");
    scanf("%d",&g);
    while(i<=g){
        printf("Enter grade #d: ",i);
        scanf("%f",&m);
        sum+=m;
        i++;
        if(m>=0 && m<65){
            count+=1;
        }
    }
    printf("\nGrade average= %.2f %% \n", (sum/g));
    printf("Number of failures: %d \n",count);
    return 0;
}
```

### C) Do While loop

```
#include<stdio.h>
int main()
{
    int g,i=1,count=0;
    float sum=0,m;
    printf("Enter the number of grades:");
    scanf("%d",&g);
    do{
        printf("Enter grade #d: ",i);
        scanf("%f",&m);
        sum+=m;
        i++;
        if(m>=0 && m<65){
            count+=1;
        }
    }while(i<=g);
    printf("\nGrade average= %.2f %% \n", (sum/g));
    printf("Number of failures: %d \n",count);
    return 0;
}
```

**Q3 Write a C Program to determine if a Number is Even or Odd**

**Ex -**

**1) Expected Output :**

**Enter the number : 25**

**The number entered is Odd**

**2) Expected Output :**

**Enter the number : 54**

**The number entered is Even**

```
#include<stdio.h>
int main()
{
    int i;
    printf("Enter the number: ");
    scanf("%d",&i);
    if(i==0){
        printf("Whole number\n");
    }
    else if(i%2==0){
        printf("Even number\n");
    }
    else{
        printf("Odd number\n");
    }
    return 0;
}
```

**Q4 Write a C Program to check the year entered is a Leap Year or not**

**Ex - 1 Expected Output :**

**Enter the year : 1955**

**No, it's not a Leap Year**

**2 Expected Output :**

**Enter the year : 2000**

**It's a Leap Year**

```
#include<stdio.h>
int main()
{
    int y;
    printf("Enter the year:");
    scanf("%d",&y);
    (y%4==0)?(y%100==0)?(y%400==0)?printf("%d is a leap
year\n",y):printf("No, %d is not a leap year\n",y):printf("%d is a leap
year\n",y):printf("No, %d is not a leap year\n",y);
    return 0;
}
```

**Q5 Write a program to create a simple calculator to perform Addition, Subtraction, Multiplication and Division using switch statement. Take the required operation as input from user.**

```

#include<stdio.h>
int main()
{
    int n;
    float a,b,c;
    printf("Enter the 1st number: ");
    scanf("%f",&a);
    printf("Enter the 2nd number: ");
    scanf("%f",&b);
    printf("Choose the operator:  \n1: ADDITION,\n2: SUBTRACTION,\n3:
MULTIPLICATION,\n4: DIVISION,\n");
    scanf("%d",&n);
    switch(n){
    case 1 : c=a+b;
        printf("%f + %f =%.2f \n",a,b,c);
        break;
    case 2 : c=a-b;
        printf("%f - %f =%.2f \n",a,b,c);
        break;
    case 3 : c=a*b;
        printf("%f * %f =%.2f \n",a,b,c);
        break;
    case 4 : c=a/b;
        printf("%f / %f =%.2f \n",a,b,c);
        break;
    default: printf("Choose a valid option\n");
    }
    return 0;
}

```

**Q6 Write a program to find out the sum of first n natural numbers. Take n as input from the user.**

```

#include<stdio.h>
int main()
{
    int n,sum=0,i=1;
    printf("enter the number: \n");
    scanf("%d",&n);
    while(i<=n){
        sum+=i;
        i++;
    }
    printf("sum of %d natural no. is: %d \n",n,sum);
    return 0;
}

```

