

# ASSIGNMENT 3

**Q1 Write a C Program to find the Greatest Common Divisor using the functions.**

**Expected Output**

- 1) Enter the numbers : 150,35  
The Greatest Common Divisor of 150 and 35 is 5
- 2) Enter the numbers : 1026,405  
The Greatest Common Divisor of 1026 and 405 is 27
- 3) Enter the numbers : 83,240  
The Greatest Common Divisor of 83 and 240 is 1

```
#include<stdio.h>

int div(int a, int b);

int main(){
    int a,b;
    printf("enter the first number: ");
    scanf("%d",&a);
    printf("enter the second number: ");
    scanf("%d",&b);
    int c= div(a,b);
    printf("the greatest common divisor of %d and %d is %d\n",a,b,c);
    return 0;
}

int div(int a, int b){
    int i,j,com;
    for(i=1,j=1; i<=a, j<=b; i++, j++){
        if(a%i==0 && b%j==0){
            com=i;
        }
    }
    return com;
}
```

**Q2 Write a C Program to find the Absolute Value using the functions.**

**Expected Output**

- 1) Enter the number : 100  
The Absolute Value of 100 is 100
- 2) Enter the number : -200  
The Absolute Value of -200 is 200

```
#include<stdio.h>

void Abs(int a);

int main(){
    int a;
```

```

printf("enter the number: ");
scanf("%d",&a);
Abs(a);
return 0;
}

void Abs(int a){
    if(a<0){
        printf("absolute value is %d\n",a*(-1));
    }else{
        printf("absolute value is %d\n",a);
    }
}

```

**Q3 Write a C program to check whether the given number is perfect number or not using functions A number is called as a perfect number if the sum of the factors of that number is equal to the same number.**

**Expected Output**

- 1) Enter the number : 6  
The number entered is Perfect Number
- 2) Enter the number : 24  
The number entered is not

```

#include<stdio.h>

void perfectNum(int a);

int main(){
    int a;
    printf("Enter the number: ");
    scanf("%d",&a);
    perfectNum(a);
    return 0;
}

void perfectNum(int a){
    int i,sum=0;
    for(i=1;i<a;i++){
        if(a%i==0){
            sum+=i;
        }
    }
    (sum==a)?printf("%d is a perfect number\n",a):printf("No, %d is not a perfect number\n",a);
}

```

**Q4 Write a C Program to find the factorial of a given number using functions.**

**Expected Output**

- 1) Enter the number : 7  
The Factorial of 7 is 5040

**2) Enter the number : 0  
The Factorial of 0 is 1**

```
#include<stdio.h>

int factorial(int a);

int main(){
    int a;
    printf("Enter the number: ");
    scanf("%d",&a);
    printf("Factorial of %d is %d\n",a,factorial(a));
    return 0;
}

int factorial(int a){
    int i,fact=1;
    for(i=1;i<=a;i++){
        fact*=i;
    }
    return fact;
}
```

**Q5 Write a C Program to find the power of a given number using functions.  
Expected Output**

**1) Enter the base number : 2  
Enter the power number : 3  
2^3 = 8**

**2) Enter the base number : 5  
Enter the power number : 0  
5^0 =1**

```
#include<stdio.h>

int pwr(int a, int b);

int main(){
    int a,b;
    printf("Enter the base number: ");
    scanf("%d",&a);
    printf("Enter the power number: ");
    scanf("%d",&b);
    printf("%d ^ %d = %d\n",a,b,pwr(a,b));
    return 0;
}

int pwr(int a, int b){
    int i,p=1;
    for(i=1;i<=b;i++){
        p=p*a;
    }
    return p;
}
```

