Homework 4 Solution

EX1: Prime Numbers Between two Intervals by Making User-defined Function

```
#include<stdio.h>
int check_prime(int num);
int main(){
   int n1,n2,i,flag;
   printf("Enter two numbers(intervals): ");
   scanf("%d %d",&n1, &n2);
   printf("Prime numbers between %d and %d are: ", n1, n2);
   for(i=n1+1;i<n2;++i)
   {
      flag=check_prime(i);
      if(flag==0)
         printf("%d ",i);
   }
   return 0;
}
int check_prime(int num) /* User-defined function to check prime number*/
{
   int j,flag=0;
   for(j=2;j<=num/2;++j){
        if(num%j==0){
            flag=1;
            break;
        }
   }
   return flag;
}
```

EX2: C program to Calculate Factorial of a Number Using Recursion

```
/* Source code to find factorial of a number. */

#include<stdio.h>
int factorial(int n);
int main()
{
    int n;
```

```
    printf("Enter an positive integer: ");
    scanf("%d",&n);
    printf("Factorial of %d = %ld", n, factorial(n));
    return 0;
}
int factorial(int n)
{
    if(n!=1)
     return n*factorial(n-1);
}
```

EX3: C program to Reverse a Sentence Using Recursion

```
/* Example to reverse a sentence entered by user without using strings. */

#include <stdio.h>
void Reverse();
int main()
{
    printf("Enter a sentence: ");
    Reverse();
    return 0;
}
void Reverse()
{
    char c;
    scanf("%c",&c);
    if( c != '\n')
    {
        Reverse();
        printf("%c",c);
    }
}
```

EX4: C program to Calculate the Power of a Number Using Recursion

```
/* Source Code to calculate power using recursive function */
```

```
#include <stdio.h>
int power(int n1,int n2);
int main()
{
    int base, exp;
    printf("Enter base number: ");
    scanf("%d",&base);
    printf("Enter power number(positive integer): ");
    scanf("%d",&exp);
    printf("%d^%d = %d", base, exp, power(base, exp));
    return 0;
}
int power(int base,int exp)
{
    if ( exp!=0 )
        return (base*power(base,exp-1));
}
else
return 1 ;
```