Assignment no 13

1. #include<stdio.h>

int func(int);

int main(){

int n,sum;

printf("Enter the nth term of natural numbers : ");

scanf("%d",&n);

sum=func(n);

printf("%d",sum);

return 0;

}

int func(int n){

int sum=0;

if(n==1){

return 1;

}

return n+func(n-1);

}

2. #include<stdio.h>

int sum(int);

int main(){

int n;

printf("Enter the nth term of the natural number : ");

scanf("%d",&n);

printf("%d\n", sum(n));

return 0;

}

int sum(int a){

int s;

if(a>=1){

s=(2\*a-1)+sum(a-1);

return s;

}

}

3. #include<stdio.h>

int sum(int);

int main(){

int n;

printf("Enter the nth term of the natural number : ");

scanf("%d",&n);

printf("%d\n", sum(n));

return 0;

}

int sum(int a){

int s;

if(a>=1){

s=(2\*a-1)+sum(a-1);

return s;

}

}

4. #include<stdio.h>

int sum(int);

int main(){

int n;

printf("Enter the nth term of the natural number : ");

scanf("%d",&n);

printf("%d\n", sum(n));

return 0;

}

int sum(int a){

if(a==1){

return 1;

}

return(a\*a+sum(a-1));

}

5. #include<stdio.h>

int sum(int);

int main(){

int n;

printf("Enter a natural number : ");

scanf("%d",&n);

printf("%d\n", sum(n));

return 0;

}

int sum(int a){

if(a == 0){

return 0;

}

return a%10+sum(a/10);

}

6. #include<stdio.h>

long fact(int);

int main(){

int num;

long facts;

printf("Please enter a number for factorial : ");

scanf("%d", &num);

facts = fact(num);

printf("The factorial of the number %d is equal to : %ld\n", num, facts);

return 0;

}

long fact(int a){

if(a == 0)

return 1;

else

return(a \* fact(a-1));

}

7. #include <stdio.h>

int hcf(int, int);

int main(){

int num1, num2, gcd;

printf("Enter any two numbers to find HCF: ");

scanf("%d%d", &num1, &num2);

gcd = hcf(num1, num2);

printf("HCF of %d and %d = %d", num1, num2, gcd);

return 0;

}

int hcf(int a, int b){

if(b == 0)

return a;

else

return hcf(b, a%b);

}

8. #include<stdio.h>

void printFibonacci(int);

int main(){

int m;

printf("Please enter your preferred number of elements here: ");

scanf("%d",&m);

printf("The Fibonacci Series will be: ");

printf("%d %d ",0,1);

printFibonacci(m-2);

return 0;

}

void printFibonacci(int m){

static int m1=0,m2=1,m3;

if(m>0){

m3 = m1 + m2;

m1 = m2;

m2 = m3;

printf("%d ",m3);

printFibonacci(m-1);

}

}

9. #include<stdio.h>

int countDigits(int);

int main(void){

int n,result;

printf("What is the number?\n");

scanf("%d", &n);

result=countDigits(n);

printf("%d\n", result);

return 0;

}

int countDigits(int n){

if(n>=0&&n<10){

return 1;

}

else{

return 1+countDigits(n/10);

}

}

10. #include <stdio.h>

int getPower(int, int);

int main(){

int base, exponent, counter, result = 1;

printf("Enter base and exponent \n");

scanf("%d %d", &base, &exponent);

result = getPower(base, exponent);

printf("%d^%d = %d", base, exponent, result);

return 0;

}

int getPower(int base, int exponent){

if(exponent == 0){

return 1;

}

return base \* getPower(base, exponent - 1);

}