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1. Write a recursive function in C to find the nth Fibonacci number.

#include<stdio.h>

int fibo(int n)

{

if (n==0)

return 0;

else if (n==1)

return 1;

else

return fibo(n-1) + fibo(n-2);

}

int main()

{

int n;

printf("Enter a number");

scanf("%d",&n);

printf("The %dth fibonacci number is %d",n,fibo(n));

return 0;

}

2. Write a recursive function to find the GCD of two given numbers.

#include<stdio.h>

int gcd(int a,int b)

{

if (b==0)

return a;

else

return gcd(b,a%b);

}

int main()

{

int a,b;

printf("Enter a number ");

scanf("%d",&a);

printf("Enter another number ");

scanf("%d",&b);

printf("The hcf of %d and %d is %d",a,b,gcd(a,b));

return 0;

}

3. Write a recursive function that computes the sum of numbers from 1 to n

#include<stdio.h>

int sum(int n)

{

if(n==1)

return 1;

else

return(n+sum(n-1));

}

int main()

{

int n;

printf("Enter a number ");

scanf("%d",&n);

printf("The sum of numbers from 1 to %d is %d",n,sum(n));

return 0;

}

* 1. 4. Write a recursive function (for each) to print the digits in an integer
     1. a. From left to right

#include<stdio.h>

#include<math.h>

int count(int n)

{

int cou=0;

while(n>0)

{

cou++;

n=n/10;

}

return cou;

}

int left(int n,int c)

{

int d,a;

if(n>0)

{

a=pow(10,(c-1));

d=n/(a);

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

left(n%(a\*d),c-1);

}

else

{

return 0;

}

return 0;

}

int main()

{

int n,c;

printf("Enter a number ");

scanf("%d",&n);

printf("The digits in %d from left to right is ",n);

c=count(n);

left(n,c);

return 0;

}

b. From right to left

#include<stdio.h>

int right(int n)

{

int d;

if(n>0)

{

d=n%10;

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

right(n/10);

}

else

{

return 0;

}

return 0;

}

int main()

{

int n;

printf("Enter a number ");

scanf("%d",&n);

printf("The digits in %d from right to left is ",n);

right(n);

return 0;

}

5. Write a C Program to find product of two numbers using a recursive function.

#include<stdio.h>

#include<math.h>

int product(int n,int c,int z)

{

if(c==1)

return n;

else

return product(n+z,c-1,z);

}

int main()

{

int n,c;

printf("Enter a number ");

scanf("%d",&n);

printf("Enter another number ");

scanf("%d",&c);

printf("The product of %d and %d is %d",n,c,product(n,c,n));

return 0;

}

6. Write a C Program to find power of a number using a recursive function.

#include<stdio.h>

#include<math.h>

int power(int n,int c,int z)

{

if(c==1)

return n;

else

return power(n\*z,c-1,z);

}

int main()

{

int n,c;

printf("Enter a number ");

scanf("%d",&n);

printf("Enter power number ");

scanf("%d",&c);

printf("The %d power %d is %d",n,c,power(n,c,n));

return 0;

}

7. Write a C Program to convert a decimal number to its binary equivalent using a recursive function.

#include<stdio.h>

#include<math.h>

int bin(int n)

{

static int a=0,f=0;

if(n==0)

return a;

else

{

int d=n%2;

a=a+d\*pow(10,f);

f++;

bin(n/2);

}

return a;

}

int main()

{

int n;

printf("Enter a decimal number ");

scanf("%d",&n);

printf("The equivalent binary of %d is %d",n,bin(n));

return 0;

}

8. Write a recursive function for reversing a number

#include<stdio.h>

int rev(int n)

{

static int a=0;

if(n==0)

return a;

else

{

int d=n%10;

a=a\*10+d;

rev(n/10);

}

return a;

}

int main()

{

int n;

printf("Enter a number ");

scanf("%d",&n);

printf("The reverse of %d is %d",n,rev(n));

return 0;

}

9. Write a recursive function find sum of digits of a number

#include<stdio.h>

int sum(int n)

{

static int a=0;

if(n==0)

return a;

else

{

int d=n%10;

a=a+d;

sum(n/10);

}

return a;

}

int main()

{

int n;

printf("Enter a number ");

scanf("%d",&n);

printf("The sum of digits of %d is %d",n,sum(n));

return 0;}