Dynamic Programming

Fibbonaci series(Top down approach)

//Dynamic programming (1) Top down approach Fibonnaci series

#include<iostream>

**using** **namespace** std;

**int** **fib**(**int**);

**int** fibo[**10**];

**void** **init\_F**() {

**int** i;

**for**(i=**0**; i<=**10**; i++) {

fibo[i] = -**1**;

}

}

**int** **main**()

{

**int** n;

cin>>n;

init\_F();

cout<<fib(n);

**return** **0**;

}

**int** **fib**(**int** num)

{

**if**(fibo[num]!=-**1**)**return** fibo[num];

**if**(num==**1**) {fibo[num]=**1** ; **return** fibo[num];}

**if**(num==**0**) {fibo[num]=**0** ; **return** fibo[num];}

fibo[num]=fib(num-**1**)+fib(num-**2**);

**return** fibo[num];

}

Fibbonaci series(Bottom up approach)

**#include<iostream>**

**using namespace std;**

**int bottomupfibo(int);**

**int main()**

**{**

**int n;**

**cin>>n;**

**cout<<bottomupfibo(n+1);**

**}**

**int bottomupfibo(int n)**

**{**

**int fibo[n];**

**fibo[0]=0;**

**fibo[1]=1;**

**for(int i=2;i<n;i++)**

**fibo[i]=fibo[i-2]+fibo[i-1];**

**return fibo[n-1];}**