

Lab Exercise #7

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Class: CSci 14 – G003

Objectives: To pass an array into a function and initialize or process its content.

To implement a Fibonacci sequence generator in order to check if an input value is a Fibonacci number or not.

To count the number of Fibonacci numbers in an array.

CODE:

```
#include<iostream>
#include<cstdlib>

using namespace std;

void randInitArray(int x[], int s)
{
    for(int i = 0; i < s; i++)
    {
        x[i] = rand() % 14 + 0;
    }
}

void dispArrayContents(int x[], int s)
{
    for(int i = 0; i < s; i++)
    {
        x[i];
        cout<< x [i] << " ";
    }
}

bool isFib(int x)
{
    int seq1 = 0;
    int seq2 = 1;
    int seq3 = seq1 + seq2;

    bool Fib = 0;
```

```
    while (seq3 <= x)
    {
        if(seq3 == x)
        {
            Fib = true;
            break;
        }
        seq1 = seq2;
        seq2 = seq3;
        seq3 = seq1 + seq2;
    }
    return Fib;
}

int arrayFibCtr(int x[], int s)
{
    int ctr = 0;

    for(int i = 0; i < s; i++)
    {
        if(isFib(x[i]) == 1)
        {
            ctr = ctr + 1;
        }
    }
    return ctr;
```

```
}  
int main()  
{  
    int x[15];  
    int s = 15;  
  
    randInitArray(x,s);  
    cout<<"Array Contents:";  
    dispArrayContents(x,s);  
    cout<<endl<<"Total Fibonacci Numbers:"<<arrayFibCtr(x,s);  
}
```

OUTPUT:

```
Array Contents:13 1 6 12 3 2 12 0 12 6 7 5 13 13 7  
Total Fibonacci Numbers:7  
Process returned 0 (0x0)    execution time : 0.031 s  
Press any key to continue.
```