CS 12 - Lab 8
Operator Overloading

In this lab you will use the Array class from lecture and use operator overloading. You must use separate files and you must have a makefile. Be sure to include all necessary information at the top of the each file in the program and use good commenting and style throughout your program.

Implement the Array class. You do not have to write all the constructors and functions given in class, just write the necessary ones. The only difference is that your Array class is going to hold a dynamically allocated array of doubles rather than integers.

Below is the code that you must be able to run (you can put this in your main).

```
const int SIZE = 5;
const int SIZE2 = 3;

Array A(SIZE);
Array B(SIZE2);

// Use overloaded extraction operator to read in values.
cout << ``Enter '' << SIZE << `` floating point numbers: '';
cin >> A;

// Lets do this one the long way so that we can try the overloaded
// subscript operator.
cout << ``Enter '' << SIZE2 << `` floating point numbers: '';
for(int i=0; i<SIZE2; i++)
   cin >> B[i];

Array C;

// Use the overloaded assignment operator to make a copy of A.
C = A;

// Use overloaded insertion operator to print values of A, B, and C.
cout << ``Array A:'' << endl;
cout << A << endl;
cout << ``Array B:'' << endl;
cout << B << endl;
cout << ``Array C:'' << endl;
cout << C << endl;
```

You should have the following functions:

Constructors You should have a constructor that takes no parameters and initializes the data members appropriately. You should also have a constructor that takes one integer parameter and dynamically allocates that amount of space.

Destructor Perform clean up of the dynamic allocation.

Insertion Operator Overload the insertion operator so that you can print out the Array with one simple line.

Extraction Operator Overload the extraction operator so that you can read in the Array with one simple line.

Subscript Operator Overload the subscript operator so that you can allow the user to set values to items in the Array or print items in the Array one at a time.

Assignment Operator Overload the assignment operator so that you may assign one Array the values of another.