

CS 12 - Lab 9 Template Classes

In this lab you will use the smartarray class and make it into a template class. 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.

Make the smartarray into a template class so that the smartarray can handle arrays of any type. You do not have to implement all the functions, just the ones to allow the following code to be performed.

```
int numitems = 5;

Array<int> A;
Array<int> B(numitems);

for(int i=0; i<numitems; i++){
    cout << "Enter an integer: ";
    cin >> B[i];
}
A = B;

cout << "Printing A: ";
cout << A << endl;
cout << "Printing B: ";
cout << B << endl;

Array<double> C;
Array<double> D(numitems);

for(int i=0; i<numitems; i++){
    cout << "Enter a floating-point value: ";
    cin >> D[i];
}
C = D;

cout << "Printing C: ";
cout << C << endl;
cout << "Printing D: ";
cout << D << endl;
```

```
Array<char> E;  
Array<char> F(numitems);  
  
for(int i=0; i<numitems; i++){  
    cout << "Enter a character: ";  
    cin >> F[i];  
}  
E = F;  
  
cout << "Printing E: ";  
cout << E << endl;  
cout << "Printing F: ";  
cout << F << endl;
```