

Program 3a  
COP-3804 - Java Intermediate Programming  
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- Turn in the signed source code on paper, and email me the source code.
- Make sure the programs are properly documented and aligned uniformly, looking professionally, I will take points off if it is not.
- Include the following header in every program:

```
/******  
Author      : Your Name  
Course      : COP 3804 Days and Time  
Professor   : Michael Robinson  
Program #   : Program Purpose/Description  
             {A brief description of the program }
```

Due Date : MM/DD/YYYY

Certification:

I hereby certify that this work is my own and none of it is the work of any other person.

```
.....{ your signature }.....  
*****/
```

Purpose of this program is to implent classes using:

- Polymorphism
- Inheritance
- Interfaces
- Abstract classes, methods, variables
- Classes inside classes

Interface

-----

- 1 - Worth 3 points
  - a) Download the file called customerInterface
  - b) Implement this interface creating a class named superCustomer  
MANUALLY assign values to the variables. e.i.  
public String customerType = "I am the superCustomer";
  - c) In the implementation add a method called getCustomerData()  
that will create an array placing all the data items in it,  
and return the array

Polymorphism

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- 2 - Worth 2 points
  - a) Create a sub class called retailCustomer inheriting from the  
superCustomer class.
  - b) Override the customerType with "I am the retailCustomer";

Main program

-----

- 3- Worth 5 points
  - a) Use the following main method:

```
public static void main(String arg[]) throws InterruptedException  
{  
    usingInterface();  
  
    usingAbstractClass();  
  
} //end public static void main(String arg[]) throws InterruptedException
```

b) Polymorphism implementation

-----  
In the usingInterface() method

Using the data type superCustomer create an object called rCust of retailCustomer();

Print the data inside the rCust's array

c) Create an abstract static class called: abstractClass //this is an abstract class

d) In this class create an abstract method called hello()

e) In this class create two regular methods as follow:

```
public static void methodOne()
{
    System.out.println( "I am methodOne, regular method in the abstractClass" );
} //end public static void methodOne()
```

```
public static void methodTwo()
{
    System.out.println( "I am methodTwo, regular method in the abstractClass" );
}
```

f) Create a ANOTHER class called:

```
extendsAbstractClass extends abstractClass
```

g) In this class (extendsAbstractClass) implement the abstract method hello()

h) In this class override methodOne and methodTwo from abstractClass

i) In the main program OUTSIDE of the other classes create a method called usingAbstractClass()

j) in the usingAbstractClass() method  
call the regular methods in the abstract class

create an object of the class that inherits an abstract class  
using this object call all the method it has access to

Note: you need to turn in 1 customerInterface, 1 superCustomer, 1 retailCustomer and 1 Main program.