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| **AP® Computer Science (A)** | **Major Lab 13** |
| **The Abstract Interface and Abstract Class Program** | **70, 90 & 100 Point Versions** |
| **Assignment Purpose:**  This assignment is meant to demonstrate how to use interfaces, abstract classes and concrete classes in one program. | |

**Lab 13 is another open-ended program. Together with a partner, design a program that shows knowledge about interfaces, abstract classes and concrete classes. Place interfaces and classes in separate files. The High School program is shown in the Lab13 sample folder. It is the same program that was used in the chapter to explain abstract classes.**

**70 Point Version Specifics**

For the 70-point version you need create a program similar to the High School program. There needs to be one interface, one or more abstract classes and three or more concrete classes. For 70-points it is not necessary to store actual information.

**90 Point Version Specifics**

The 90-point version becomes more practical. This program needs to store and process data. The 70-point version only had methods with println statements indicating the purpose of the methods and demonstrating the interaction of the program.

Now you need to add some data structure that stores information. The program also needs to have methods to add new data and display the data.

**100 Point Version Specifics**

The 100-point version is very similar to the 90-point version. The main difference is that your program has now become generic. The generics need to start at the interface level and work down to the abstract classes and concrete classes.