Project 4 Rubric Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_

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| **Item**  **Number** | **Criteria** | **Ratings** | **Score** |
| 1 | Major class created correctly | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Major class is a class that as at least 3 attributes which are private for the base class and there are appropriate getter/setter methods | 5 pts  Partial Credit  Major class does not have at least 3 attributes for the base class or the instance variables are public or the getter/setter methods are missing. | 0 pts  No Marks  Major class does not have at least 3 attributes for the base classes and the instance variables are either public or there are not getter/setter methods for the instance variables. | |  |
| 2 | Tester class created correctly | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Tester class is used to access and print all data stored and generated by the subclasses | 5 pts  Partial Credit  Tester class is used to access and print some of the data stored and generated by the subclasses | 0 pts  No Marks  Tester class is not used to access and print data stored and generated by the subclasses | |  |
| 3 | Subclasses created from Major | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  At least three subclasses created based on Major, including one subclass extended from a subclass of Major | 5 pts  Partial Credit  One or two subclasses created based on Major, including one subclass extended from a subclass of Major | 0 pts  No Marks  One or no subclass(es) created based on Major | |  |
| 4 | Subclasses of Major have appropriate instance variables | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Subclasses of Major use the private instance variables in Major when possible, accessing them using getter/setter methods | 5 pts  Partial Credit  Subclasses of Major use some the private instance variables in Major but also have local variables for some instance variables that should be in Major | 0 pts  No Marks  Subclasses of Major use all local variables rather than using the instance variables from Major | |  |
| 5 | All instance variable are private and initialized in the constructor in all object classes | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  All instance variable are private and initialized in the constructor in all object classes | 5 pts  Partial Credit  Some instance variables are private or only some are initialized in the constructor | 0 pts  No Marks  No instance variables are private or no instance variables are initialized in the constructor | |  |
| 6 | At least 2 of the 3 extended classes should have a minimum of two additional attributes and one additional method not found in Major and unique to the subclass | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Two of the 3 extended classes have a minimum of two additional attributes and one additional method not found in Major and unique to the subclass | 5 pts  Partial Credit  One of the 3 extended classes has a minimum of one additional attribute and one additional method not found in Major and unique to the subclass | 0 pts  No Marks  None of the extended classes have a minimum of one additional instance method not found in Major and unique to the subclass | |  |
| 7 | The toString() method overridden appropriately | |  |  | | --- | --- | | 10 pts  Full Marks  The toString() method is overridden and implemented appropriately in the subclasses | 0 pts  No Marks  The toString() method is not overridden and implemented appropriately in the subclasses | |  |
| 8 | Code compiles and runs without errors | |  |  | | --- | --- | | 5 pts  Full Marks  Code compiles and runs without errors | 0 pts  No Marks  Code does not compile and is automatically assigned 0 points for the overall grade | |  |
| 9 | Code is properly commented | |  |  |  | | --- | --- | --- | | 10 pts  Full Marks  Code is properly commented including all required header information | 5 pts  Partial Credit  Code has some of the required comments but is sparsely commented or missing the correct header information | 0 pts  No Marks  Code is sparsely commented or not commented at all and is missing all or most of the correct header information | |  |
| 10 | Program is properly designed and uses whitespace effectively | |  |  |  | | --- | --- | --- | | 15 pts  Full Marks  Program is properly designed and uses whitespace effectively | 8 pts  Partial Credit  Program is not properly designed or it does not use whitespace effectively | 0 pts  No Marks  Program is not properly designed and it does not use whitespace effectively | |  |

Comments: