**ICS 108 – Object-Oriented Programming**

**Lab # 12 – Abstract Classes**

**Objectives:**

In this lab, the following topic will be covered:

1. Abstract Classes

**Task**

Design the class **Student**. A student has the following data fields: Id and GPA. The student class has the abstract method getStatus that returns the status as a string. Override the toString method that returns Id, GPA, and status (using getStatus method) and make it **final**.

Design two subclasses **Undergraduate** and **Graduate**. The status of the graduate student is good if his GPA is 3.0 or above otherwise it is probation. The undergraduate's status is honor if his GPA is 3.0 or above, good if his GPA is 2.0 or above, probation otherwise.

Write a test program that declares an array of type **Student**. Make some elements **Undergraduate** objects and some elements **Graduate** objects with random values. For every student, print his Id, GPA, and status.

**Notes:**

* Save every class in a separate file.
* Data fields should be private.
* Classes, constructors, and methods should be public.