**ICS 108 – Object-Oriented Programming**

**Lab # 24 – Sets and Maps**

**Objectives:**

In this lab, the following topic will be covered:

1. Sets
2. Maps

**Task**

You have a list of student ID’s followed by the course number (separated by a space) that the student is enrolled in. For example, if student 1 is in ICS108 and MATH101 while student 2 is in ICS104 and MATH101 then the file might look like this:

|  |  |
| --- | --- |
| 202263730 | CS |
| 202263130 | COE |
| 202257670 | SWE |
| 202248610 | SWE |
| 202282750 | CS |
| 202280530 | SWE |
| 202259310 | SWE |
| 202265080 | SWE |
| 202228900 | CS |

Write a program that reads data in this format from a text file. Use the TreeMap class to map from a string (the major) to a TreeSet of type Integer that holds Ids of students enrolled in that major. The declaration should look like this:

TreeMap<String, TreeSet<Integer>> majors = new TreeMap<>();

After all data is input, iterate through the map and output each major and Ids of students enrolled in that major.