QUESTION 1 — 45 MARKS

You have been recently appointed as the administrator of the registration of schools, colleges and universities by the local government. As a programmer you would like to implement the concepts of object-oriented programming by creating a template or blue print for each category of learning institutions. Create templates that will be used to register each category according to the following guidelines.

a. Create a class called **School** that has the following members:
   - variables (schoolName, location, district, province, privateInstitution, rank)
   - constructor to initialize the variables
   - getter and setter methods for the variables
   - a method that sets the rank of the school
   - a method to print the school object

b. Create a class called **College** that inherits from the School class:
   - Add a variable called type and
   - Include getter and setter for the variable
   - Include a constructor that calls the super constructor.
   - Override the method to print object

c. Create a class called University:
   - Include one member variable called rating
   - Override the method to print object

d. Create objects of type school, college and university.

e. Create an ArrayList and add the objects to the ArrayList.

[45]

QUESTION 2 — 45 MARKS

The table below contains student numbers and their Test1, Test2, Assignment and Exam marks. The final mark is calculated using the following formula:

FinalMark=(0.33*Test1+0.33*Test2+0.34*Assign)*0.4 + Exam*0.6

Add another column, and enter your student number and semester marks for any module of your choice.

No	40003456	40006723	40005653	40004783	40004532	40006543	40006745
T1	56	84	68	90	78	40	36
T2	34	78	47	88	68	47	50
Assign	67	90	98	82	89	50	87
Exam	65	56	67	80	78	67	65
Final							

Write a C# program that continuously asks the user to enter the student number, Test1 mark, Test2 mark, Assignment and Exam mark for 8 students. Create a 2-dimensional array to store Student numbers, CA test 1 marks, CA test 2 marks, Assignment marks, exam marks and final marks.

- Calculate the final mark for each student
- Display student number, T1, T2, Assignment, Exam and Final mark for all students
- Calculate and display the average of Test1(T1) marks
- Calculate and display the average of Test2(T2) marks
- Calculate and display the average of Assignment (Assign) marks
- Calculate and display the average of Exam marks
- For each student, if the final mark is less than 50 display “Fail”; otherwise, display “Pass”
- Write the results for each student to a file. Indicate student number and final mark
- Use a try catch block to handle all the exceptions that may arise.

[45]

End of Assignment