CS4013 Tutorial 2

1. Create a class called `Employee` that has the following data fields:
   - `name`: a String that holds the employee's name;
   - `idNumber`: an int variable that holds the employee's id number;
   - `department`: a String that holds the emplyee's department;
   - `position`: a String that holds the employee's job title;

   Add the following to the Employee class:

   - a constructor that accepts the following as arguments and assigns them to the appropriate fields: an employee's name, id number, department and position;
   - a constructor that accepts the following as arguments and assigns them to the appropriate fields: employee's name and id number. The department and position fields should be assigned an empty String ("");
   - a no-arg constructor that assigns an empty string to each of the data fields of type String and 0 to idNumber.

   Write a program that tests and demonstrates these constructors (a class called TestEmployee which has the main() method). You should utilise each constructor to create an employee object.

   Illustrate with a simple diagram what happens in memory when the program is executed.

2. Design a `TestResult` class that has fields to hold three test scores and a score/grade table (illustrated below) which allows a total score to be converted to a grade. (The test scores are stored as percentages and thus you can assume that the maximum total of test scores will be 100.) The score/grade table will be the same for all objects of type TestResult. Add the following to the class:
   - a method `void setScore(int i, double value)` that sets the score of the i^{th} test;
   - a method `double getScore(int i)` that returns the score of the i^{th} test;
   - a method `double getTotal()` which returns the total of the test scores;
   - a method `String getGrade()` which returns the grade. The grade is based on the total score;

0	1	30	35	40	48	52	56	60	64	72	80
NG	F	D2	D1	C3	C2	C1	B3	B2	B1	A2	A1

Table 1: A score to grade conversion table