TOBB University of Economics and Technology
Department of Computer Engineering

BİL141 Computer Programming (Java)
Spring 2016

Homework 1

Due by Jan 26 (Tuesday) 12:30

Subject: While loops, input, output

1) (Savitch, Ch4. Programming project 6) **GradeCalculator.java**

6. Write a program to read a list of exam scores given as integer percentages in the range 0 to 100. Display the total number of grades and the number of grades in each letter-grade category as follows: 90 to 100 is an A, 80 to 89 is a B, 70 to 79 is a C, 60 to 69 is a D, and 0 to 59 is an F. Use a negative score as a sentinel value to indicate the end of the input. (The negative value is used only to end the loop, so do not use it in the calculations.) For example, if the input is

```
98 87 86 85 85 78 73 72 72 72 70 66 63 50 -1
```

the output would be

```
Total number of grades = 14
Number of A's = 1
Number of B's = 4
Number of C's = 6
Number of D's = 2
Number of F's = 1
```

2) (Savitch, Ch4. Programming project 14) **Bounce.java**

14. Write a program that simulates a bouncing ball by computing its height in feet at each second as time passes on a simulated clock. At time zero, the ball begins at height zero and has an initial velocity supplied by the user. (An initial velocity of at least 100 feet per second is a good choice.) After each second, change the height by adding the current velocity; then subtract 32 from the velocity. If the new height is less than zero, multiply both the height and the velocity by –0.5 to simulate the bounce. Stop at the fifth bounce. The output from your program should have the following form:

```
Enter the initial velocity of the ball: 100
Time: 0 Height: 0.0
Time: 1 Height: 100.0
Time: 2 Height: 168.0
Time: 3 Height: 204.0
Time: 4 Height: 208.0
Time: 5 Height: 180.0
Time: 6 Height: 120.0
Time: 7 Height: 28.0
Bounce!
Time: 8 Height: 48.0
. . .
```

Submit the programs (**GradeCalculator.java** and **Bounce.java**) to spring141etu@gmail.com

In each program have the following comments at the top.

```
/*
 * BİL141 Spring 2016
 * HW#
 *
 * NameOfTheProgram (ex: GradeCalculator)
 * Explanation (ex: Given a number of grades (0-100),
 * Counts the number of letter grades)
 *
 * @author Firstname Lastname (Student number)
 * @email  ....@etu.edu.tr
 * @date   yyyy/mm/dd
*/
```