King Fahd University of Petroleum and Minerals

Information and Computer Science Department

ICS 102: Introduction to Computing
Second Semester 2005 - 2006 (053)

FINAL EXAM (25%)

ID:						
Name:						

Grades		
Question	**Max**	**Scored**
1	**8**	
2	**10**	
3	**10**	
4	**10**	
5	**12**	
TOTAL	**50**	

1. Design and write a Java program which:
    - Reads unknown number of integers from a file called "numbers.txt",
    - Saves the positive integers into an output file called "positive.txt"
    - Saves the negative integers into an output file called "negative.txt

2. Design and write a Java program which:
    - Reads 100 integers using a Scanner object into an array called DUP. (The integers in DUP are not necessarily distinct.)
        - handle **exceptions** when reading
    - Copies the distinct integers in DUP in to another array called DIS
    - Prints the integers in DIS.

3. Design and write a Java program which:
    - Declares a 2-D Integer array of 5 rows and different number of columns in each row.
    - Populate the 2-D array using a Scanner object.
    - Compute and print the average of each row.

4. Last year 250 ICS102 students took the final exam. The final exam was graded out of 100. Design and write a Java program which:
    - Reads the student grades (assume they are all integers) using a Scanner object
    - Counts how many students scored 0, how many students scored 1, how many scored 2, up to how many scored 100.
    - Prints the median score.
    - **Note**: Your program should not be more than 30 lines.

5. Design and write a Java program for classes TEST and STUDENT.
   The STUDENT class has the following 3 instance variable:
   - ID
   - Name
   - An array of 4 doubles (grades of 4 quizzes).

   And the following methods:
   - One constructor
   - One accessor which returns the array of quizzes
   - One mutator which changes the value of one quiz
   - And other methods needed by the TEST class.

   The TEST class:
   - Creates 1000 STUDENT objects
   - Prints The average of each STUDENT object
   - Prints the ID, the Name, and Quiz 2 score of each STUDENT object with the highest score in quiz 2.