



UNIVERSITY OF NEW YORK, TIRANA

DEPARTMENT OF COMPUTER SCIENCE

OO Programming with Java

Fall 2013, Final Exam, Monday 10/02/2014

Student Name: _____

Please read each question carefully. The total points are 100. You have 180 minutes. Good Luck!

PART I – THEORY – 20 POINTS

- 1) Explain the scope of local variables for try and catch blocks. [5 points]
- 2) Explain the use of *finally* in exception handling. [5 points]
- 3) Give an example of an interface. [5 points]
- 4) Describe the four ways to assign superclass and subclass references to variables of superclass and subclass types. [5 points]

PART II – EXERCISES – 80 POINTS

CREATE A PROJECT IN NETBEANS CALLED “STUDENT NAME SURNAME”. DEVELOP ALL THE FOLLOWING PROGRAMS WITHIN THE SAME PROJECT.

- 1) Write a Java program with the following features: [25 points].
One class called Book with attributes: Title (String), Publisher (String) and ISBN (String), Year (integer).
 - a) Insert a list of three Books from the keyboard and serialize them in a file called Books.txt.
 - b) Read the list of books from the file and print them on the screen.
- 2) Write a Java program that takes Strings from keyboard, puts them in a collection and then does the following: [25 points].
 - a. it sorts them in decreasing order and prints them.

- b. it searches for a string that the user enters from input and prints the frequency of this string in the collection.

Use structures from the Java API to implement the exercise.

3) Model the following in a Java program [30 points]:

We need a program that can be used for payments of Invoices and Fines. The invoice has the following features: number, date, amount, article, quantity and pricePerItem. The fine has as features the number, date and amount. Develop the following:

- a) Develop and interface in Java to model the fact that both entities Invoice and Fine are payable.
- b) The interface should have a method that performs the payment.
- c) Develop a test class where you create three invoices and three fines, you insert them in a data structure of your choice and then print from the data structure only the invoices with an amount smaller than 500.

DO NOT LEAVE THE CLASS WITHOUT SAVING AND DELIVERING TO THE INSTRUCTOR THE WHOLE CODE OF YOUR EXAM.
CHEATING POLICY

1. This test is subject to the STUDENT HONOUR CODE of UNYT.
2. If you are found **Cheating** your test will be invalid and the **whole course will be graded with F**.