# COMP 249: Object Oriented Programming II

Tutorial 6: File input/output & Serialization

# Question 1

❖ Write a statement that opens file "oldmast.txt" for input—use Scanner variable inOldMaster.

❖ How would you append data to the end of a file? Create an object from the class you would use.

# Question 2

❖ Read the whole file "input.txt" line by line using Scanner object. At the same time count the number of lines in file.

# Question 3

❖ Write a program that will search a text file of numbers of type int and will write the largest, smallest number and the mean value of the numbers in the file to the screen. The file contains nothing but integers.

❖ Your program should make sure that there is at least one integer in the file. If the file is empty, it should display a message to that effect and terminate the program. You should create your own text file.

# Question 4

A company want to keep a record of all its employees. So each time a new person is hired, the company add its information to a repertory.

1. Create a class "Date", with the following attributes month(int), day(int), year(int). With constructor (take the 3 attributes) and check that the date is valid. Create accessor, mutator and a method "dateOK(int month, int day, int year)" that check if :

   - The year is between 1000 and 9999
   - The day is between 1 and 31 (for simplicity every months can have 31 days,)
   - The month is between 1 and 12

NB: Before setting the date you should check if it is valid. If not valid set to default values day=1, month=1,year=1900.

Modify the Date class to implement the Serializable Interface

# Question 4 (cont'd)

1.  Create the class "Employee", that has a constructor, accessor and mutators and four attributes: name (string), id (int), hiredDate(Date), position (string). Override the toString method to return information of an employee. Modify the Employee class to implement the Serialization Interface.

2.  Use the "Serializable Interface" to store all employees in a file "CompanyRepertory.ser".

3.  Use the driver in "Company.java". Write a method that returns all employees hired after a particular Date.
    Furthermore implement the method writeToFile and readFromFile that allow to write and read a list employees from a file

Driver (company.java)

```
Please choose from one of the following options.
View serialized objects: 1
Use the company System: 2
2
*****Welcome to Company System*****

- Menu:
1- Add a New Employee.
2- View employee(s) hired after a certain date.
0- Exit.
What would you like to do?
1
Please enter the name of the employee
tristan
Please enter the ID of the employee
12345
Please the position of the employee
manager
Please the day the employee was hired it should in the interval [1,31]
1
Please the month the employee was hired it should in the interval [1,12]
1
Please the year the employee was hired it should in the interval [1000,9999]
1000
- Menu:
1- Add a New Employee.
2- View employee(s) hired after a certain date.
0- Exit.
What would you like to do?
```