

Note:

1) Projects can be completed in groups (max 4 per group) but submission onto WebCourses is individual. Once again, don't copy anybody's work nor give your code to anybody unless you **seriously** worked together on the project.

2) Please Submit one .java file. It should look like this:

```
public class Project3 {  
  
    public static void main(String[] args){  
        //Test code goes here  
    }  
  
}  
  
//-----  
class Abc{  
  
}  
  
//-----  
class Xyz{  
  
}
```

3) If you work with a classmate(s), your .java file must contain the following comment:

```
/*  
- Project 3  
- Names (first and last names) of all students who worked together on the project  
- (optional) Add anything that you would like the TA to be aware of  
*/
```

Example:

```
/*  
  
- Project 3  
- Hatim Boustique, Ericka Edwards and Jamal Dubois  
  
*/  
  
public class Project3 {  
  
    public static void main(String[] args){  
        //Test code goes here  
    }  
  
}  
//-----  
interface Int1 {  
  
}  
//-----  
  
class Abc{  
  
}  
  
//-----  
class Xyz{  
  
}
```

Students will not receive any credit if they don't submit the java file by the deadline!  
Submissions by email will not be considered for a grade. Students must submit their projects in Webcourses by uploading the java file. It is the responsibility of the students to check their submissions to make sure that the file they submitted is indeed the right file and it is a readable java file!

### Project 3 statement

Please read this entire statement carefully before you start doing anything...(Please don't assume things!!)

This project is **similar** to the previous one (You should be able to reuse most or all of the code of Project2!) . It involves implementing a simple university personnel management program.

#### Note well the following:

- You may use any data structure to store the objects. That is, you may use an array, array list, hash map...etc.
- Your code should handle exceptions. For example, if the user enters a non-numerical value for the gpa, your code could crash when you calculate the invoice payment.
- In addition, you code must have a user-defined exception called `IdException` that handles the faculty and student ids entered by the user. Note that any id must be of the form **LetterLetterDigitDigitDigitDigit** like `e17894`. See sample run below. **This time, we require that ids are checked for duplication. That is no two persons can have the same id!**
- When option 7 is chosen to exist the program, the user is presented with the option to create a report that has the most up-to-date data from the array (or ArrayList list...) saved into a text file (**report.txt**). A sample report is provided at the end of this document.

### Sample Run: (Below is how your code should run)

Welcome to my Personal Management Program

Choose one of the options:

- 1- Enter the information a faculty
- 2- Enter the information of a student
- 3- Print tuition invoice for a student
- 4- Print faculty information
- 5- Enter the information of a staff member
- 6- Print the information of a staff member
- 7- Exit Program

Enter your selection: **2**

Enter the student info:

Name of Student: **Julia Alvarez**

ID: **j1254**

Invalid ID format. Must be LetterLetterDigitDigitDigitDigit

ID: **ju1254**

Gpa: **3.26**

Credit hours: **7**

Student added!

- 1- Enter the information a faculty
- 2- Enter the information of a student
- 3- Print tuition invoice for a student
- 4- Print faculty information
- 5- Enter the information of a staff member
- 6- Print the information of a staff member
- 7- Exit Program

Enter your selection: **2**

Enter the student info:

Name of Student: **Matt Jones**

ID: **ma0258**

Gpa: **2.78**

Credit hours: **0**

Student added!

- 1- Enter the information of the faculty
- 2- Enter the information of the two students
- 3- Print tuition invoice
- 4- Print faculty information
- 5- Enter the information of the staff member
- 6- Print the information of the staff member
- 7- Exit Program

Enter your selection: **A**

Invalid entry- please try again

1. Enter the information of a faculty

2. Enter the information of a students
3. Print tuition invoice
4. Print faculty information
5. Enter the information of a staff member
6. Print the information of a staff member
7. Exit Program

Enter your selection: **1**

Enter the faculty info:

Name of the faculty: **John Miller**

ID: **jo7894**

Rank: **Instructor**

"Instructor" is invalid

Rank: **Assistant Professor**

"Assistant Professor" is invalid

Rank: **Professor**

Department: **Engineering**

Faculty added!

1. Enter the information of a faculty
2. Enter the information of a students
3. Print tuition invoice
4. Print faculty information

5. Enter the information of a staff member
6. Print the information of a staff member
7. Exit Program

Enter your selection: 3

Enter the student's is: **ju1254**

Here is the tuition invoice for Julia Alvarez :

Julia Alvarez ju1254

Credit Hours:7 (\$236.45/credit hour)

Fees: \$52

Total payment (after discount): \$1,707.15 (\$0 discount applied)

1. Enter the information of a faculty
2. Enter information of a students
3. Print tuition invoice
4. Print faculty information
5. Enter the information of a staff member
6. Print the information of a staff member
7. Exit Program

Enter your selection: 3

Enter the student's is: ja1954

No student matched!

1. Enter the information of the faculty
2. Enter information of the two students
3. Print tuition invoice
4. Print faculty information
5. Enter the information of the staff member
6. Print the information of the staff member
7. Exit Program

Enter your selection: **4**

Enter the Faculty's id: jo7894

-----  
John Miller                      jo7894  
Engineering Department, Professor  
-----

1. Enter the information of a faculty
2. Enter information of a students
3. Print tuition invoice
4. Print faculty information
5. Enter the information of a staff member
6. Print the information of a staff member
7. Exit Program

Enter your selection: **6**



Enter the Staff's id: **ha5879**

No Staff member matched!

1. Enter the information of a faculty
2. Enter information of a students
3. Print tuition invoice
4. Print faculty information
5. Enter the information of a staff member
6. Print the information of a staff member
7. Exit Program

Enter your selection: **5**

Name of the staff member: **Jamal Kareem**

Enter the id: **ja6980**

Department: **Sciences**

Status, Enter P for Part Time, or Enter F for Full Time: **f**

Staff member added!

1. Enter the information a faculty
2. Enter information of a students
3. Print tuition invoice
4. Print faculty information
5. Enter the information of a staff member
6. Print the information of a staff member
7. Exit Program

Enter your selection: **6**

Enter the Staff's id: **ja6980**

-----  
Jamal Kareem                    ja6980  
Sciences Department, Full Time  
-----

1. Enter the information a faculty
2. Enter information of a students
3. Print tuition invoice
4. Print faculty information
5. Enter the information of a staff member
6. Print the information of a staff member
7. Exit Program

Enter your selection: **7**

Would you like to create the report? (Y/N): **y**

Report created and saved on your hard drive!

Goodbye !

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## Sample Report (**report.txt**)

Report created on 11/15/2021

\*\*\*\*\*

### Faculty Members

-----

1. John Miller  
ID: jo7894  
Professor, Engineering

### Staff Members

-----

1. Jama Kareem  
ID: ja6980  
Sciences, Full Time

### Students

-----

1. Julia Alvarez  
ID: ju1254  
Gpa: 3.26  
Credit hours: 7

2. Matt Jones  
ID: ma0258  
Gpa: 2.78  
Credit hours: 0