Module: Java + UI + PHP

Course: Core Java

Session 24: Ad. Java IO

Trainer Notes

1 Session Plan

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| Time  (min) | Content | Methodology | Trainer  Approach | Learner  Activity | Learning  Outcome  (Bloom's) | Learning  Outcome  (Gardner's) |
| 15 | IMP implementation of InputStream and OutputStream | Reference to  Reading  Material and  Slides | Facilitate,  Elicit  responses | Think,  Respond,  Identify | Remember,  Understand | Intrapersonal,  interpersonal |
| 15 | ObjectInpuStream & ObjectOutputStream explanation and demo | Reference to  Reading  Material and  Slides | Facilitate,  Elicit  responses | Think,  Respond,  Identify | Remember,  Understand | Intrapersonal,  interpersonal |
| 15 | DataInputStream & DataOutputStream explanation and demo | Reference to  Reading  Material and  Slides | Facilitate,  Elicit  responses | Think,  Respond,  Identify | Remember,  Understand | Intrapersonal,  interpersonal |
| 15 | Input Changing Combinations: A Review | Reference to  Reading  Material and  Slides | Facilitate,  Elicit  responses | Think,  Respond,  Identify | Remember,  Understand | Intrapersonal,  interpersonal |
| 25 | Guided Classroom  Activities | Group Activities | Facilitate | Work on guided activities | Remember,  Understand,  Coding | Intrapersonal,  interpersonal |
| 05 | Conclusion | Discussion | Question,  Facilitate,  Guides | Participates,  Recollect  concepts | Remember | Intrapersonal,  interpersonal |

2 Objectives

* Implement InputStream and OutputStream concepts
* Implement ObjectInpuStream & ObjectOutputStream
* Implement DataInputStream & DataOutputStream
* Implement Input Changing Combinations

3 Materials Needed

* Slides

1. Presentation Description

The Facilitator is expected to follow the Presentation Slides as a guideline for the flow of the session.

1. Guided Classroom Activities

* To write employees into a text file.
* The payroll system of an organization involves calculating the gross salary of each type of employee and the tax applicable to each. The entity classes, their fields and methods are already given in your candidate project. Your task today is to write employee details into a text file.
* Classes given to you in the candidate project are: Employee, Trainer, Sourcing, Manager, Organization, SelfEmployed and TaxUtil , IncomeCalculatorInterface, EmployeeDAOInterface, EmployeeFileDAO and EmployeeDAOFactory. These classes already have fields, constructors and the respective methods. The Trainer, Manager and sourcing classes are sub-classes of Employee.
* Most data is stored in persistent systems such as a database or files. Reading and writing from and to persistent data systems is an important part of any application. There are many new classes given to you in the project. They are briefly described below. Study them and their methods.
  + Exception classes FileReadException and FileWriteException are given for throwing file operation related exceptions
  + An Interface called EmployeeDAOInterface is given to you in the Interfaces package. It defines two methods, readEmployees and writeEmployees.
  + A class called EmployeeFileDAO is defined in the DAO package. This class implements the readEmployeemethod. This method reads from a file called employeeData.txt in the current directory and converts all the Managers into Manager objects. The method reads from a file that contains employee data in the following format: id;name;basicSalary;hraPer;daPer;projectAllowance;
  + A class called EmployeeDAOFactory is given to you. This class has a method called getDAO that returns the available DAO. Currently only the EmployeeFileDAO is available and implemented. This method returns an instance of EmployeeFileDAO.
  + The Organization class has two new methods. Method readEmployeesFromFile() uses the EmployeeDAOInterface’s readEmployees method to read employees from file and assigns it to the instance file employeesList.
  + There is another method called writeEmployeesToFile(). This method calls the writeEmployees method of the EmployeeFileDAO class. The writeEmployees() method of the EmployeeFileDAO is unimplemented.
  + Your task today is to implement the writeEmployeesToFile method of the EmployeeFileDAO class. You should write the list of employees passed as parameter into a file called employeeOutput.txt in the current directory.
  + An Exception class called FileWriteException is given to you. Use this exception to throw any errors you may encounter. The output should be written in the following format:id;name;basicSalary;hraPer;daPer;projectAllowance;. You can assume that only Manager objects are stored in the organization class and write only manager data. After every Manager data, insert a new line.
  + Do not append to existing file. Overwrite existing data OR delete the existing file and create a new file of the same name, employeeOutput.txt