Module: Java + UI + PHP

Course: Core Java

Session 6: Packages and Access Modifiers

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 | Packages | Reference to  Reading  Material and  Slides | Facilitate,  Elicit  responses | Think,  Respond,  Identify | Remember,  Understand | Intrapersonal,  interpersonal |
| 15 | Packages example & demo | Reference to  Reading  Material and  Slides | Facilitate,  Elicit  responses | Think,  Respond,  Identify | Remember,  Understand | Intrapersonal,  interpersonal |
| 15 | Access modifiers | Reference to  Reading  Material and  Slides | Facilitate,  Elicit  responses | Think,  Respond,  Identify | Remember,  Understand | Intrapersonal,  interpersonal |
| 15 | Access modifiers demo | 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

* Explain Packages
* Discuss types of Packages
* Demonstrate usage of packages
* Demonstrate predefined and user defined packages
* Explain Use access modifier
* Explain the scope of various access modifiers

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. Classroom Activities

**Packages**

To properly package the classes in a payroll system.

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 put these classes in the give packages.

Classes given to you in the candidate project are: Employee, Trainer, Sourcing, Manager, Organization and TaxUtil. Currently all these classes are in one package called com.talentsprint. Create the following packages and put teh respective classes under them.

Packages

* com.talentsprint.employeepayrollsystem.entity : This package will house all the classes that desribe the entities of the pay roll system. Hene move the classes Employee, Sourcing, Trainer and Manager into this class.
* com.talentsprint.employeepayrollsystem.util : This package will house the classes that provide utility functions to all other classes. Move the class TaxUtil to this package.
* com.talentsprint.employeepayrollsystem.client : This package will contain the classes that use the entities. Hence move the class Organization to this package.

**Access Modifiers**

To apply proper access specifiers to classes and members

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 use Access specifiers to restrict access of the fields in the classes of the payroll system application.

Classes given to you in the candidate project are: Employee, Trainer, Sourcing, Manager, Organization and TaxUtil. These classes already have fields, constructors and the respective methods. The Trainer, Manager and sourcing classes are sub-classes of Employee.

The fields in the classes have no access specifiers, hence they have default access. Add Access specifiers to the fields such that the following rules apply:

* The Employee class is the base class, hence its fields should be available to all its sub-classes, but not to other unrelated classes, even in the same package
* The classes Manager, Trainer and Sourcing should be able to access fields of Employee class. But their own specific fields should not be accessible to any other class.
* The fields of the class Organization should not be visible to any other class.