

## More on classes

### Workshop 4

**In this workshop, you'll learn:**

- What is encapsulation?
- Organize classes in packages
- Information hiding: Access modifiers and others

#### **0. Create packages in the project for workshop 4:**

Create a new project named w4. Check the box “Create Main Class”, then type “Main” in the text box next to it as below then click the button “Finish”:



The class named Main is created in the Main.java file, which contains the main() function.

Right-click on the “Source packages” item and create 2 packages named pkgBook and pkgStudent.

#### **1. Write a class named Book (in the package pkgBook) having the following attributes:**

- **title:** a String object that holds the book's title.
- **pages:** an int variable that holds the number of pages of the book.
- **cost:** a double variable that holds the book's cost.
- **fiction:** a boolean variable, that holds information about whether the book is fiction or not.

Create default and parameterized constructor. Create “set/get” methods to change/return value of class variables.

Write statements in the main function to test all the above operations.

The program output might look something like:

```
Enter title : Dreamy island
Enter number of pages: 200
Enter cost: 250
Enter fiction(true/false): false
```

```
Dream island 200 150.0 false
```

```
Enter new cost: 300
```

```
Dream island 200 300.0 false
```

**2. Write a class Student (in the package pkgStudent) having the following attributes:**

- **id:** a String object that holds the student's id.
- **name:** a String object that holds the student's name.
- **mark:** a double variable that holds the student's average mark.

Create default and parameterized constructor. Create toString() method so that the statement System.out.println(x) where x is the Student object will display on screen a student's information in format below:

id, name, mark

Write statements in the main function to test all the above operations.

The program output might look something like:

```
Enter id: A01
Enter name: Tran Ha
Enter mark: 7.5
```

```
A01, Tran Ha, 7.5
```