

**WIA1002 DATA STRUCTURE**  
**LAB TEST 1**  
**Duration: 1 hour**  
**(Thursday 12.00pm – 1.00pm)**

**Question:**

You are responsible to write a program to enter an employee detail into a database using Java. There are 3 elements of an employee which is their name (**name**), tax number (**taxNo**) and employee ID (**id**). The **default values** for the 3 elements when it is not known should be **name = "John Doe"**, **taxNo = 9999**, **id = 1111**.

**Requirement:**

- **Employee class.** Create an abstract class called **Employee** with generic type **ID**, representing a general employee. It includes common attributes and methods such as **name**, **taxNo**, and **introduce**. In the abstract class, you are required to create constructors (constructor overloading and explicit constructor invocation) which initializes the variables. In each constructor, print out "Constructor X is running..." where X is the index of constructors, i.e.,  $X = \{1, 2, 3, 4\}$ . You should also create a method **introduce()** that should print out the sample output. {6 marks}
- **EmployeeTesla class.** Create a generic class **EmployeeTesla** that extends **Employee**, e.g., **EmployeeTesla<ID>** extends **Employee<ID>**. In the generic class, you are required to create constructors (constructor overloading and explicit constructor invocation) which initializes the variables. {2 marks}
- **Main class.** Write a main class to create instances of **EmployeeTesla** with various types of IDs - **NewGuy** with no input values, **Alisa** with input values **name="Alisa"** only, **Adam** with input values **name="Adam"**, **taxNo=6541** only, **Ali** with input values **name="Ali"**, **taxNo=3941** and employee id = 12345. Execute the **introduce()** method for each instance. {2 marks}

**Sample Output (10%):**

```
run:
Constructor 1 running...
Employee Tesla starts working...
My name is John Doe, my tax no is 9999, and my employee id is 1111.
--- I am an Employee object ---

Constructor 2 running...
Employee Tesla starts working...
My name is Alisa, my tax no is 9999, and my employee id is 1111.
--- I am an Employee object ---

Constructor 3 running...
Employee Tesla starts working...
My name is Adam, my tax no is 6541, and my employee id is 1111.
--- I am an Employee object ---

Constructor 4 running...
Employee Tesla starts working...
My name is Ali, my tax no is 3971, and my employee id is 12345.
--- I am an Employee object ---

BUILD SUCCESSFUL (total time: 0 seconds)
```