**Module 1 : Design Patterns in Java**

**Exercise 1: Implementing the Singleton Pattern**

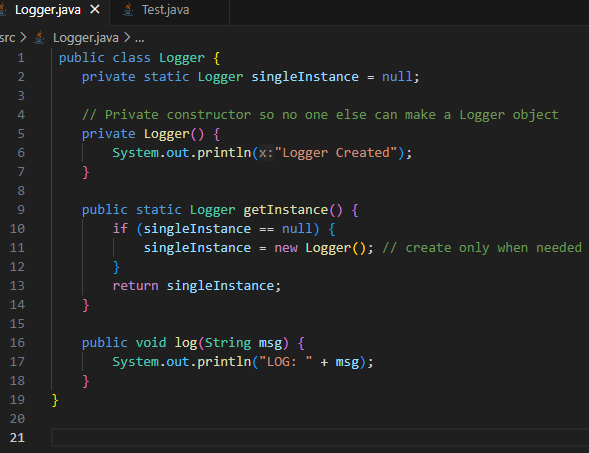
**Scenario:**

**You need to ensure that a logging utility class in your application has only one instance throughout the application lifecycle to ensure consistent logging.**

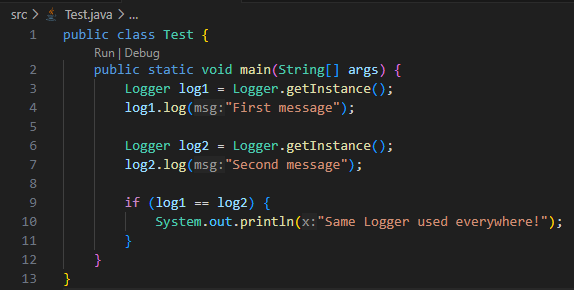
**Solution :**

**Step 1 ,2,3**

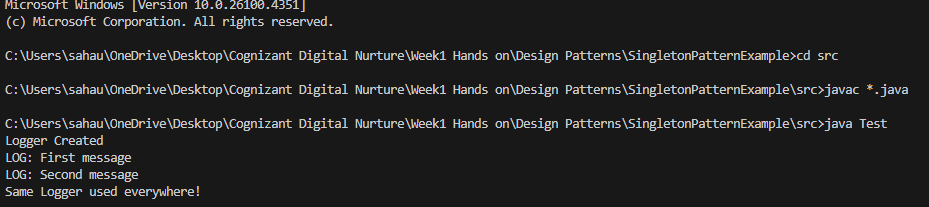
**Code :**

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**Step 4**

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**Output:**

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**Exercise 2: Implementing the Factory Method Pattern**

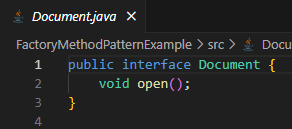
**Scenario:**

**You are developing a document management system that needs to create different types of documents (e.g., Word, PDF, Excel). Use the Factory Method Pattern to achieve this.**

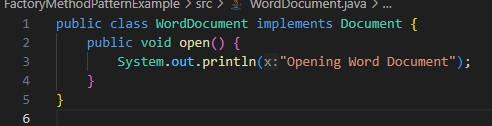
**Solution :**

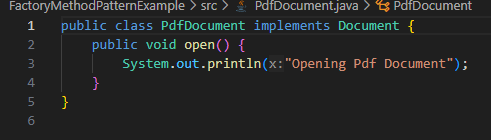
**Code :**

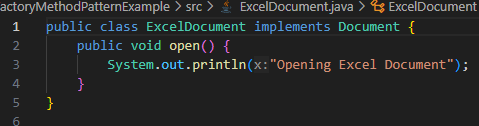
**Step 1 and 2**

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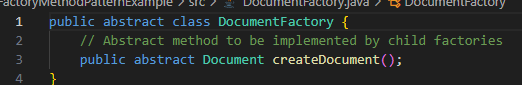
**Step 3**

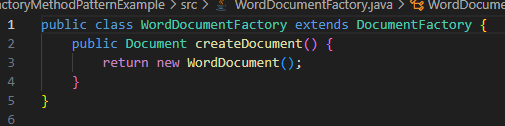
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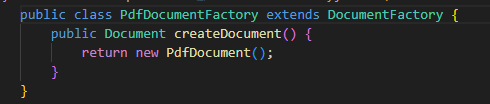
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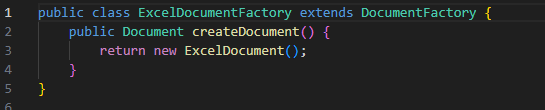
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**Step 4**

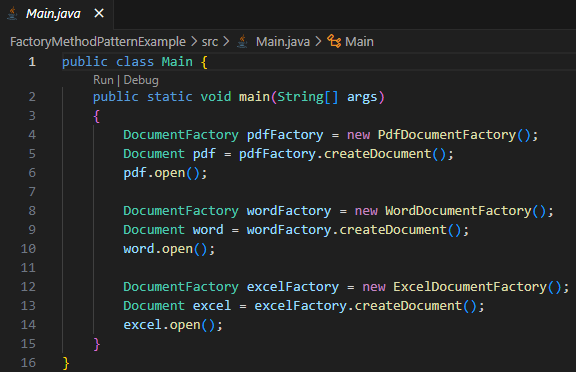
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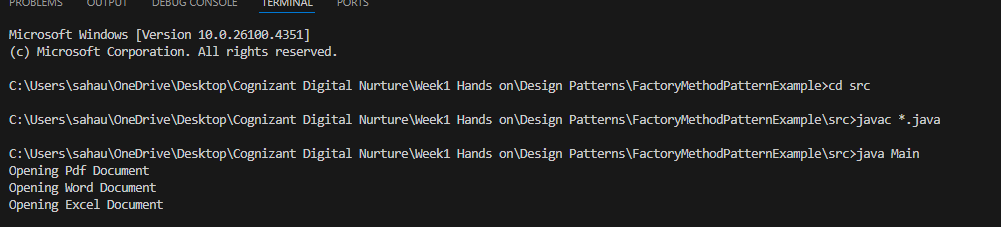
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**Step 5**

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**Output :**

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