

BSc (Hons) in Information Technology

Year 2

Data Structures and Algorithms – IT2070

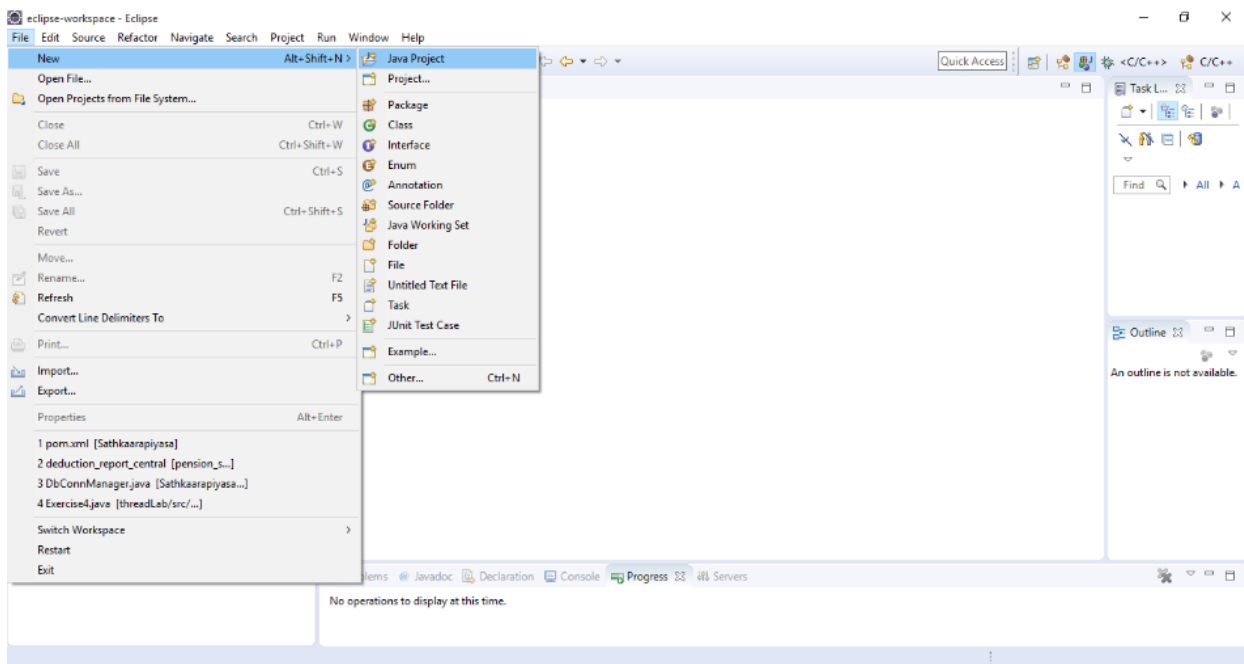
Lab Exercise 1 – Stacks

Steps to create a Java Class in Eclipse IDE

Step 1 : Open eclipse

Step 2 : Create a new project

File ➡ New ➡ Java project

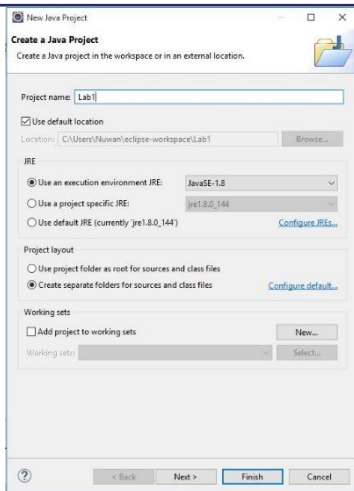


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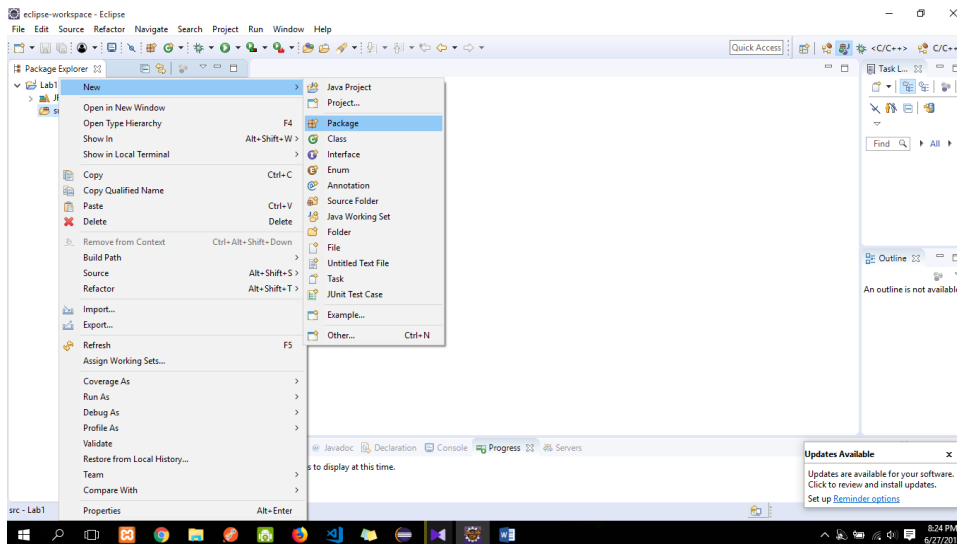
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Lab Exercise 1 – Stacks



Step 3: Create a new Package

Right click on src ➡ New ➡ Package



Step 4: Create a java class within the created package

Right click on created Package ➡ New ➡ Class

Lab Exercise 1 – Stacks

Question

- a) Implement Stack class to store characters. Identify the data members required and implement the below methods with the constructor.

Push(), Pop(), Peek(), isEmpty() and isFull()

- b) Develop an application to

- i) Insert characters to the stack using push() method.
 - ii) Remove the content of the stack and display them.
 - iii) Comment on the order of insertion to the stack and the order of removal from the stack.
- c) Use the stack class created above and check whether a user entered expression is correctly parenthesized.

Ex: $3 + ((6 * 2) - 3)$ \rightarrow valid
 $5 * 6 + (2 - 5)$ \rightarrow not valid