

BSc (Hons) in Information Technology Year 2

Data Structures and Algorithms – IT2070

Lab Exercise 1 - Stacks

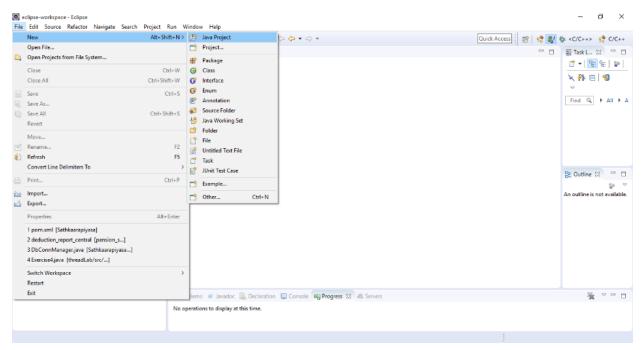
2023

Steps to create a Java Class in Eclipse IDE

Step 1: Open eclipse

Step 2 : Create a new project







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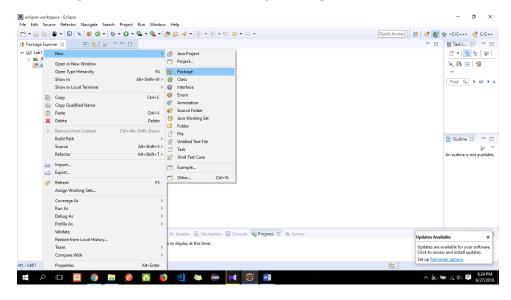
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Step 3: Create a new Package

Right click on src New Package



Step 4: Create a java class within the created package

Right click on created Pacakage New Class



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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:
$$3 + ((6 * 2) - 3) \rightarrow \text{valid}$$

 $5 * 6 + (2 - 5) \rightarrow \text{not valid}$