

# BSc (Hons) in Information Technology Year 2

**Data Structures and Algorithms – IT2070** 

Lab Exercise 1 - Stacks

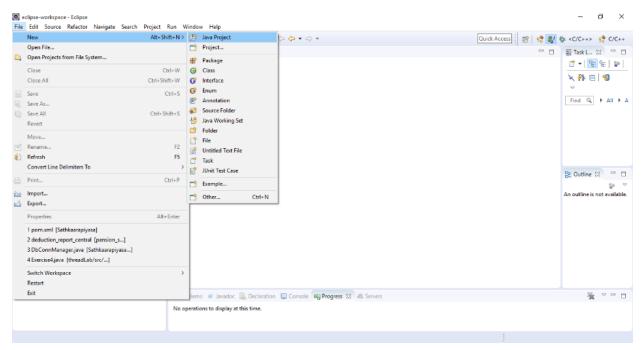
2022

### Steps to create a Java Class in Eclipse IDE

Step 1: Open eclipse

Step 2 : Create a new project







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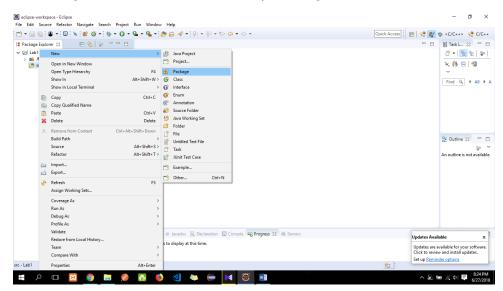
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#### Step 3: Create a new Package

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.
- Use the stack class created above and check whether a user entered expression is correctly parenthesized.

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