



HUST

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HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

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BÁO CÁO MINI PROJECT MÔN LẬP TRÌNH HƯỚNG ĐỐI TƯỢNG

Team 21 Topic 1: Visualization of operations on tree data structures

Team members and assignment:

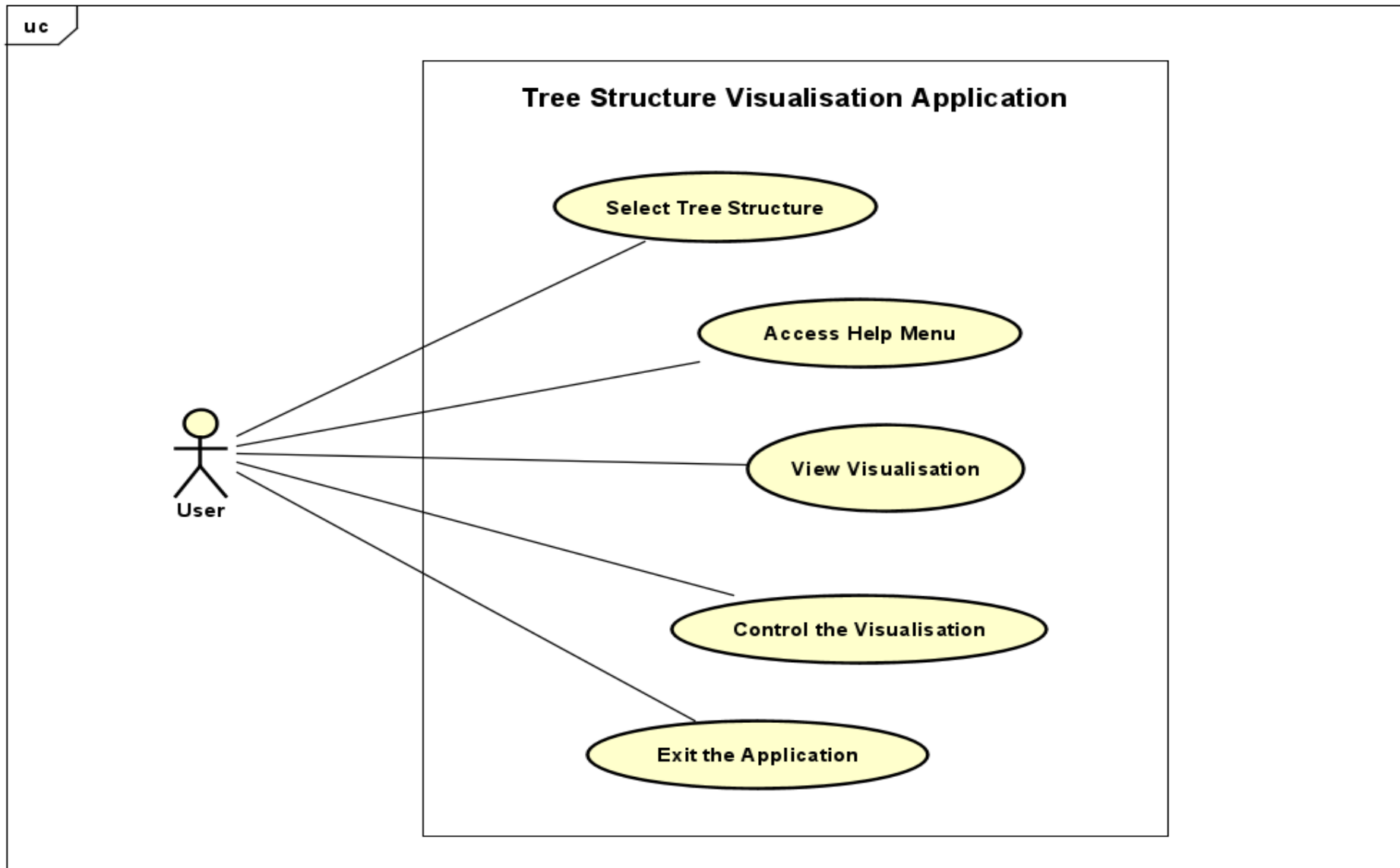
1. Lê Quang Minh 20215088 (Leader): Algorithm and UI
2. Nguyễn Phúc Mạnh 20215087: UI
3. Đoàn Quang Minh 20210606: UI
4. Hoàng Nhật Minh 20210607: UI

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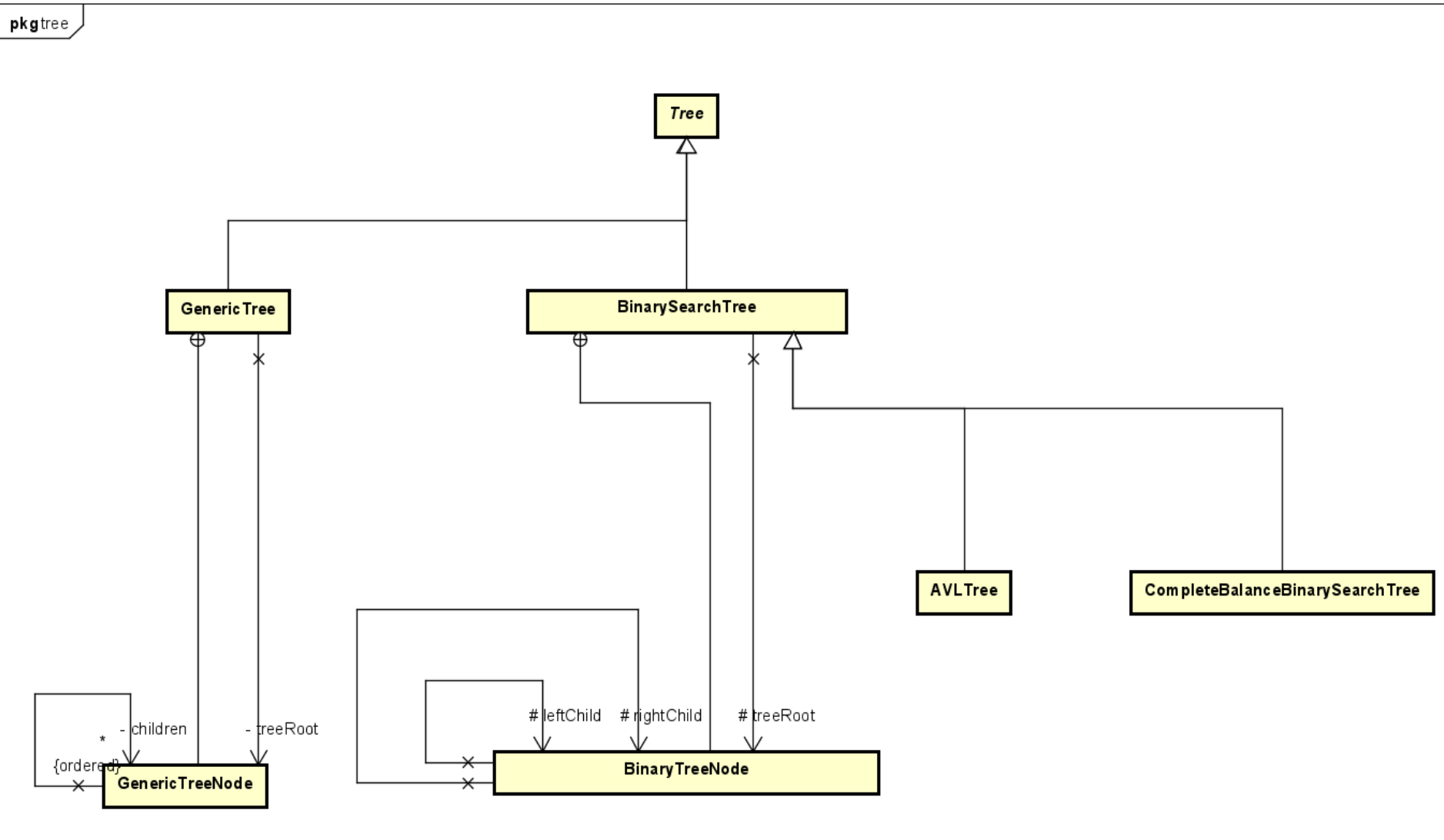
Problem statement

- Tree data structures are interesting and useful, yet not many students can study tree structure that well.
- A tree visualization application can help with that
- Demonstrate step by step of any operations of a tree.

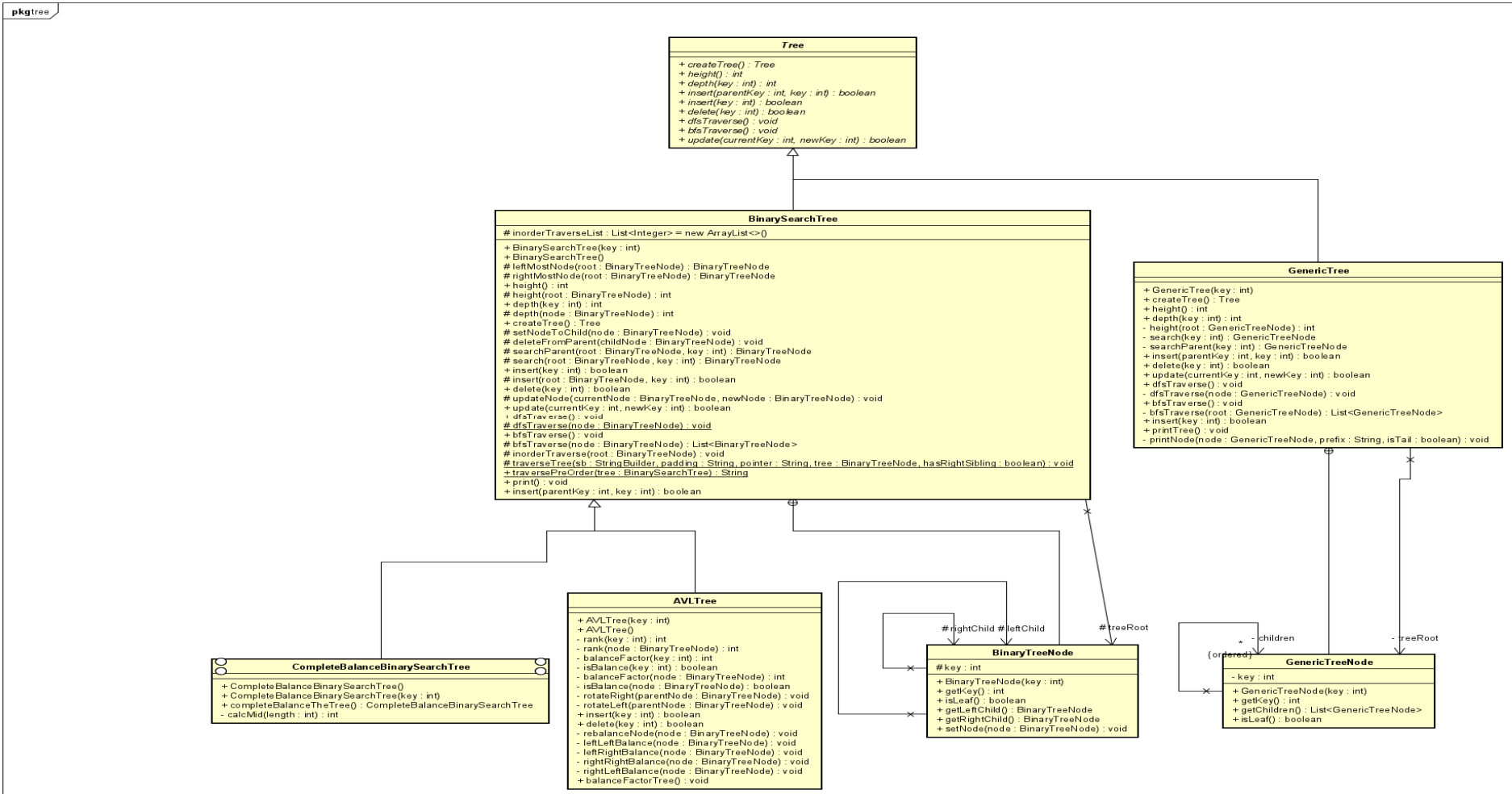
Use case diagram



General class diagram



Class diagrams for packages/modules



- GenericTree, BinarySearchTree inherit abstract Tree
- AVLTree, CBBST inherit BinarySearchTree

- GenericTree contains GenericTreeNode (Aggregation)
- BinarySearchTree, AVLTree, CBBST contain BinaryTreeNode (Aggregation)

Demo scenario

- https://husteduvn-my.sharepoint.com/:f:/g/personal/minh_lq215088_sis_hust_edu_vn/EmYWON1QnCReroOsiEsDZTEByajtv1NTOWhlrd37D0mjHA?e=yA453V

```
de.java  TreeVisualisation_GeneralClassDiagram.png  AVLTree.java  CBBSTController.java  BSTController.java  Tr...
Project
  GenericTreeNode
  Tree
  ui
    controller
      BSTController
      CBBSTController
      InputDialogController
      TreeNodeController
    resources
    test
    view
      BST.fxml
      InputDialog.fxml
      test.fxml
      TreeNode.fxml
  Main
  .gitignore
  TreeVisualisationProject.iml

185      bfsTraverseUI();
186    } catch (Exception e) {
187      e.printStackTrace();
188    }
189  }
190
191  no usages  Mingix-PT *
192  @FXML
193  protected void chooseTraverse(ActionEvent event) {
194    System.out.println("Choose traverse");
195    if (treePane.getChildren().contains(traverseVBox)) {
196      treePane.getChildren().remove(traverseVBox);
197    }
198    else {
199      treePane.getChildren().add(traverseVBox);
200    }
201  }
202
203  no usages  Mingix-PT
204  @FXML
```

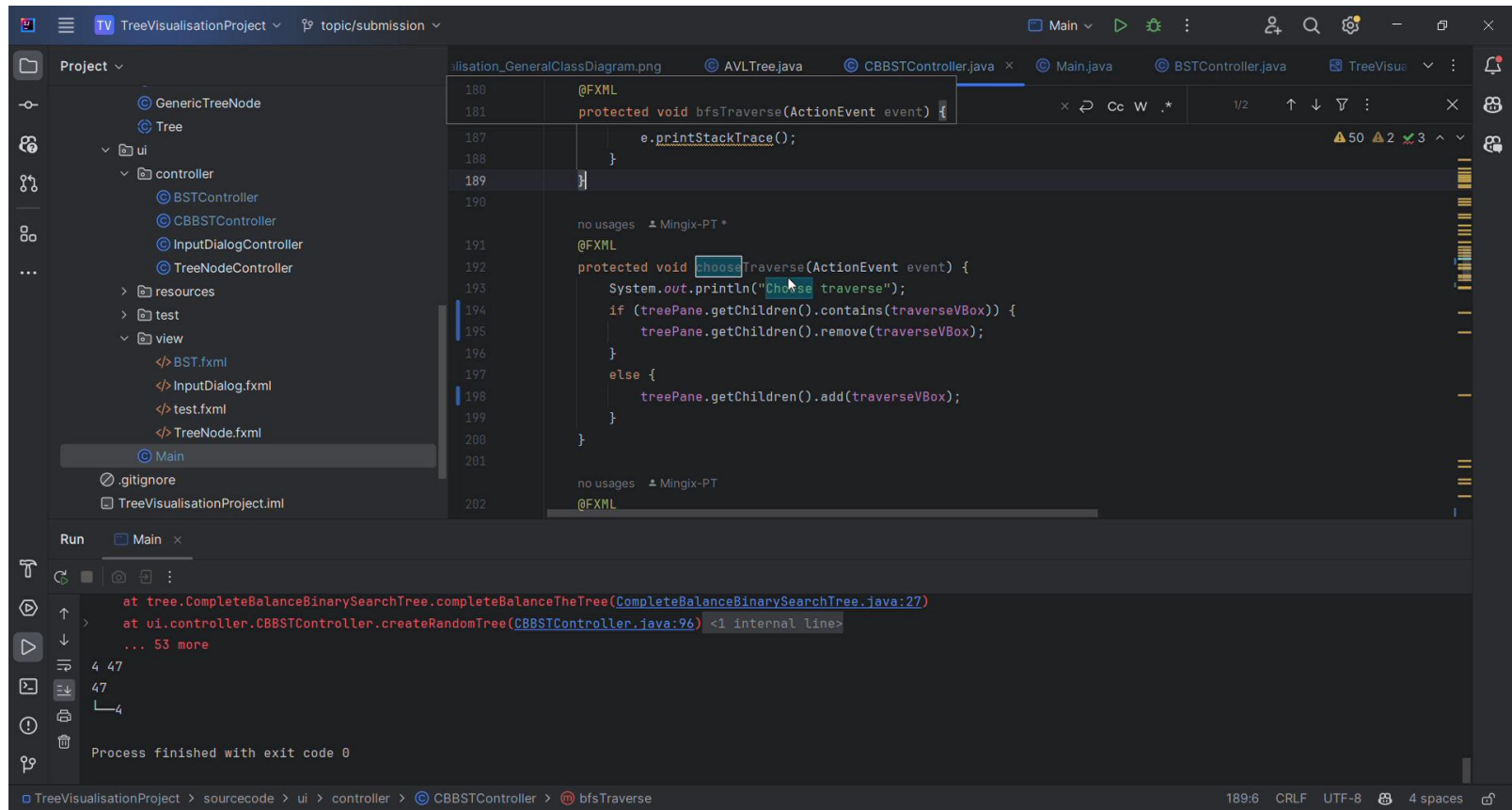
Run Main

96
95
Choose traverse
Choose traverse
Choose traverse
Choose traverse
Process finished with exit code 0

TreeVisualisationProject > sourcecode > ui > controller > CBBSTController > chooseTraverse 198:54 CRLF UTF-8 4 spaces

Demo scenario

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A large, stylized graphic on the left side of the slide. It consists of a red background with a circular pattern of white dots of varying sizes, creating a sense of depth and movement. The word "HUST" is written in white, bold, sans-serif capital letters in the center of this graphic.

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THANK YOU !