README

# Task 1

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The programming language used to complete the Task 1 is Java.

Code Structure:

file.java

* getSource() : Used to get the origin city of the file node.
* getDestination() : Used to get the destination city of the file node.
* getPath() : Used to get the distance between the origin city and destination city of the file node.

node.java

* getName() : To get the city name of the node.
* getDepth() : To get the depth of the node.
* getPrice() : To get the cost of the node.
* getParent() : To get the parent node of the current node.
* getChildren() : To get the list of children nodes of the current node.
* setChildren() : To set the children of a node.

find\_route.java

* addChildNodes() : To add child nodes to the parent nodes.
* getPath() : To get the distance between two cities
* displayRoute() : To print the path from source city to the origin city
* main(): To get the input from the user, parse the given input file and find the route from source to destination using the uniform cost search algorithm.

## Instructions to run the code:

Before running the code, we need to make sure that the system should be able to run java files. The following setup needs to be done before running the file.

IDE:

* Any IDE which can run java files can be used to run these files. We have used Visual Studio Code to create, edit and run the files.
* To download and install VS Code follow this link: [Download Visual Studio Code - Mac, Linux, Windows](https://code.visualstudio.com/download)
* Based on the specifications of your device select a version to download and install it.

Steps to be done before running the java file:

After installing, click on extensions from the side or click CTRL+SHIFT+X to open the extensions. Then search for ‘Extension Pack for Java’ (Published by Microsoft) and install it. Make sure you have installed the java JDK if not, download from [Java Downloads | Oracle](https://www.oracle.com/java/technologies/downloads/) and install it.

Run the Java file:

* Open the project folder from the VS code window and open the file find\_route.java
* From the menu select Terminal and select New Terminal.
* When the terminal opens type “javac find\_route.java” then click enter
* Then type “java find\_route [input\_filename] [Source] [destination]” then click enter.
* Then the output will be displayed.