README

This folder contains 3 subfolders, including "**ALGORITHM**", "**APP**" and "**assignment**".

- **ALGORITHM**: source code that is the core of YEN's shortest paths and Dinic maximum flow.
- **APP**: contains the .exe file for running application.
- **assignment**: contains the QT project files

1 "ALGORITHM" folder

This is just source code folder that implements **YENKSP** and **Dinic** Algorithm in "*nodeManager*" class and outputs data to the terminal. This folder does not contain any UI implementaiion.

To run this code:

First, please open this folder in file explorer and open it in terminal. Then, to run this .exe file, run the following command to see road directions:

- 3 arguments: "mode" "source" "end"
- mode: ksp: k shortest paths maxflow: maximum flow
- example: "./main ksp 1 140": the mode chosen is top k shortest paths with source 1 and end 140.

2 "APP" folder

Open the "APP" folder and then run the `assignment.exe` file, you will see an interface as follow:

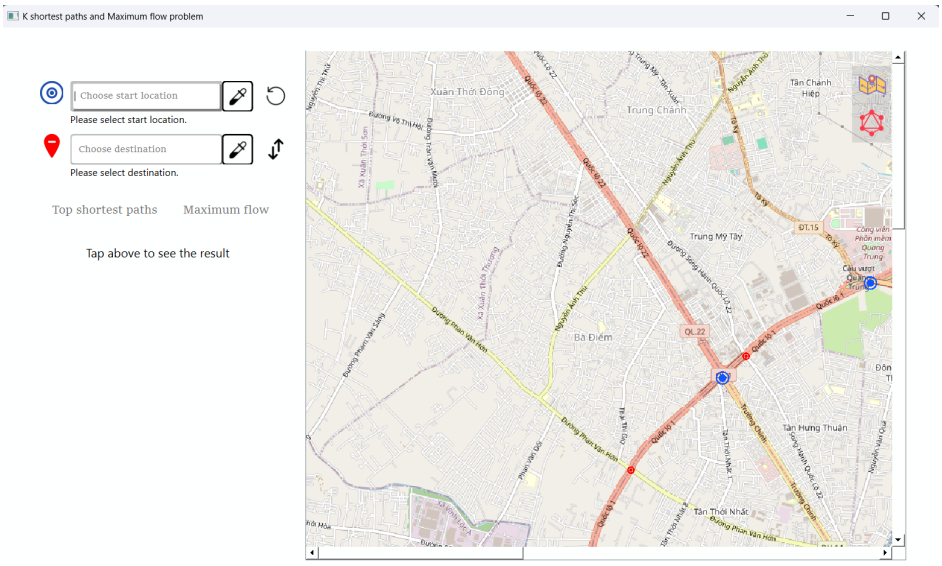


Figure 1: Start up interface.

!! You can hold `CTRL + scroll up/down` to zoom in/out !!

- First, you can fill the start and destination location by either typing or using pickers.
  (The next picker is automatically triggered when you tap the first picker!)
- Toggle map button: hide and show the map.
  Toggle graph: show full graph with connected edges.
  (Arrows indicate 1-way while rhombuses indicate a 2-way edges)

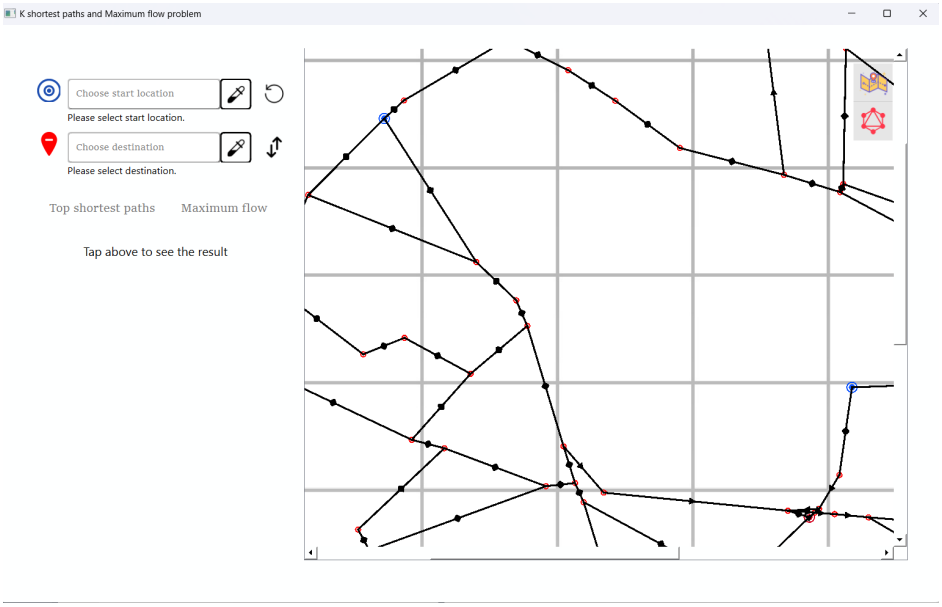
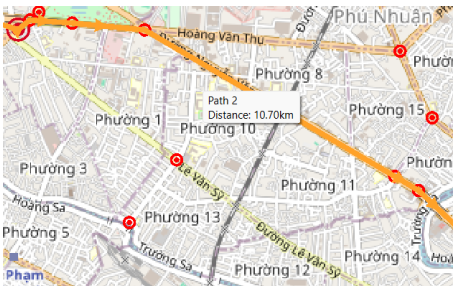
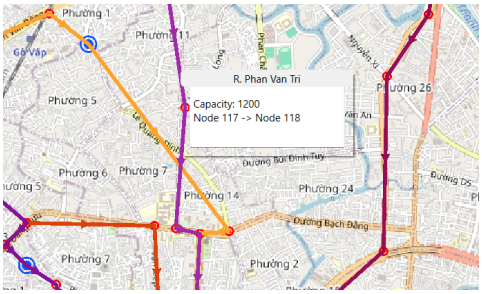


Figure 2: Full graph with background map turn off.

- You can hover or tap on paths to see road names and their information:



(a) Hover to see path information



(b) Tap to see road information

Figure 3: Hover and tap

3 ”assignment” folder

This folder is the source code for UI implementation. To run this file, you must download QT creator, create a QT widget project and add all files in this folder to run.