

JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY,
NOIDA

B. TECH 4TH SEMESTER

REPORT FOR MINOR PROJECT IN ALGORITHMS



TITLE OF PROJECT

'METRO APPLICATION'

Supervision of:

Dr. Taj Alam

Assistant Professor

Department Of Computer

Science and Engineering

JIIT, SECTOR 62, NOIDA

Submitted by:

Name

Enroll No.

SABEEH AHSAN

22803006

TANMAY BUTTA

22803014

LAKSHYAVEER SINGH

22803015

PROJECT SYNOPSIS

Introduction

Aim:

To develop an interface of “METRO APPLICATION” and performing operations like finding shortest distance between two stations both distance and time wise.

About the project:

This project aims to provide users with a user-friendly interface to navigate and plan routes within a metro system. Users can input their starting and destination stations to find the shortest distance between them, considering both distance and time factors. The application provides real-time updates on train schedules, station information, and estimated travel times, enhancing the overall commuting experience.

Features of the Project:

1. LIST ALL THE STATIONS IN THE MAP.
2. SHOW THE METRO MAP.
3. GET SHORTEST DISTANCE FROM A 'SOURCE' STATION TO 'DESTINATION'.
4. GET SHORTEST TIME TO REACH FROM A 'SOURCE' STATION TO 'DESTINATION' STATION.

GLIMPSES OF PROJECT

```
*****WELCOME TO THE METRO APP*****
      ~~LIST OF ACTIONS~~

1. LIST ALL THE STATIONS IN THE MAP
2. SHOW THE METRO MAP
3. GET SHORTEST DISTANCE FROM A 'SOURCE' STATION TO 'DESTINATION' STATION
4. GET SHORTEST TIME TO REACH FROM A 'SOURCE' STATION TO 'DESTINATION' STATION
5. GET SHORTEST PATH (DISTANCE WISE) TO REACH FROM A 'SOURCE' STATION TO 'DESTINATION' STATION
6. GET SHORTEST PATH (TIME WISE) TO REACH FROM A 'SOURCE' STATION TO 'DESTINATION' STATION
7. EXIT THE MENU

ENTER YOUR CHOICE FROM THE ABOVE LIST (1 to 7) :
```

1. Rajouri Garden~BP
2. IGI Airport~O
3. Netaji Subhash Place~PR
4. Moti Nagar~B
5. Rajiv Chowk~BY
6. AIIMS~Y
7. Yamuna Bank~B
8. Botanical Garden~B
9. Janak Puri West~BO
10. Huda City Center~Y
11. Vishwavidyalaya~Y
12. New Delhi~YO
13. Shivaji Stadium~O
14. Vaishali~B
15. Saket~Y
16. Dwarka Sector 21~B
17. Chandni Chowk~Y
18. Punjabi Bagh West~P
19. Noida Sector 62~B
20. DDS Campus~O

Delhi Metro Map		

Rajouri Garden~BP =>		
Punjabi Bagh West~P		2
Moti Nagar~B		2
IGI Airport~O =>		
DDS Campus~O		8
Netaji Subhash Place~PR =>		
Punjabi Bagh West~P		3
Moti Nagar~B =>		
Rajouri Garden~BP		2
Rajiv Chowk~BY		9
Janak Puri West~BO		7
Rajiv Chowk~BY =>		
New Delhi~YO		1
AIIMS~Y		7
Yamuna Bank~B		6
Moti Nagar~B		9
AIIMS~Y =>		
Rajiv Chowk~BY		7
Saket~Y		6

Algorithm Description

Dijkstra's algorithm is a popular algorithm used to find the shortest paths from a single source node to all other nodes in a weighted graph. It was conceived by Dutch computer scientist Edsger W. Dijkstra in 1956 and is widely used in various applications, including network routing protocols and transportation systems.

Operations used:

1. Weighted Graphs
2. Unordered map
3. Vectors
4. Pairs
5. Stack