

OUTPUT

- **MAIN SCREEN:**

```
D:\Drive B - Development\NUST\Semester 4\DS\Project\Debug\Project.exe
PATH FINDER

To exit anywhere within the program, enter X

1. Intra-city
2. Inter-city

Choice (1/2):
```

- **INTER-CITY (SHORTEST TIME):**

```
D:\Drive B - Development\NUST\Semester 4\DS\Project\Debug\Project.exe
PATH FINDER

To exit anywhere within the program, enter X

1. Intra-city
2. Inter-city

Choice (1/2): 2

Enter the source city: Islamabad
Enter the destination city: Lahore
Press S to map path through a city or press any other key to continue...
Please choose,
1. Get path with shortest time
2. Get path with shortest distance
3. Get both combined
Choice (1/2/3): 1

Shortest path based on time taken, from Islamabad to Lahore is:
Islamabad -> Chakri -> Kallar Kahar -> Bhera -> Kot Momin -> Pindi Bhattian -> Sukheke -> Lahore
Total time taken: 5 hours and 0 minutes (Distance: 413 km)

Press X to exit or any other key to continue...
```

- **INTER CITY (SHORTEST DISTANCE):**

```
D:\Drive B - Development\NUST\Semester 4\DS\Project\Debug\Project.exe
PATH FINDER

To exit anywhere within the program, enter X

1. Intra-city
2. Inter-city

Choice (1/2): 2

Enter the source city: Islamabad
Enter the destination city: Lahore
Press S to map path through a city or press any other key to continue...
Please choose,
1. Get path with shortest time
2. Get path with shortest distance
3. Get both combined
Choice (1/2/3): 2

Shortest path based on distance, from Islamabad to Lahore is:
Islamabad -> Rawalpindi -> Gujar Khan -> Jhelum -> Kharian -> Gujrat -> Gujranwala -> Lahore
Total distance covered: 359 km (Time: 7 hours and 53 minutes)

Press X to exit or any other key to continue...
```

- **INTER-CITY (FROM CITY X TO CITY Y VIA CITY Z):**

```
D:\Drive B - Development\NUST\Semester 4\DS\Project\Debug\Project.exe

PATH FINDER

To exit anywhere within the program, enter X

1. Intra-city
2. Inter-city

Choice (1/2): 2

Enter the source city: Islamabad
Enter the destination city: Lahore
Press S to map path through a city or press any other key to continue...
Enter the city which you would like to add along the path: Faisalabad
Please choose,
1. Get path with shortest time
2. Get path with shortest distance
3. Get both combined
Choice (1/2/3): 2

Shortest path based on distance, from Islamabad to Lahore via Faisalabad, is:
Islamabad -> Chakri -> Kallar Kahar -> Sargodha -> Jhang -> Faisalabad -> Sheikhupura -> Lahore
Total distance covered: 632 km (Time: 11 hours and 5 minutes)

Press X to exit or any other key to continue...
```

- **INTER-CITY (GET PATH BY BOTH DISTANCE AND TIME):**

```
1. Intra-city
2. Inter-city

Choice (1/2): 2

Enter the source city: Islamabad
Enter the destination city: Karachi
Press S to map path through a city or press any other key to continue...
Please choose,
1. Get path with shortest time
2. Get path with shortest distance
3. Get both combined
Choice (1/2/3): 3

Shortest path based on time taken, from Islamabad to Karachi is:
Islamabad -> Chakri -> Kallar Kahar -> Bhera -> Kot Momin -> Pindi Bhattian -> Sukheke -> Lahore -> Shahdara -> Jaranwala -> Khanewal -> Multan -> Rahim Yar Khan -> Ghotki -> Sukkur -> Moro -> Hyderabad -> Karachi
Total time taken: 24 hours and 34 minutes (Distance: 1827 km)

Shortest path based on distance, from Islamabad to Karachi is:
Islamabad -> Chakri -> Kallar Kahar -> Sargodha -> Jhang -> Faisalabad -> Gojra -> Khanewal -> Multan -> Rahim Yar Khan -> Ghotki -> Sukkur -> Moro -> Hyderabad -> Karachi
Total distance covered: 1768 km (Time: 25 hours and 42 minutes)
```

- **INTRA-CITY (SHORTEST TIME):**

```
D:\Drive B - Development\NUST\Semester 4\DS\Project\Debug\Project.exe

PATH FINDER

To exit anywhere within the program, enter X

1. Intra-city
2. Inter-city

Choice (1/2): 1

Enter city: Karachi
Enter the source town: Baldia
Enter the destination town: Shah Faisal Town
Please choose,
1. Get path with shortest time
2. Get path with shortest distance
3. Get both combined
Choice (1/2/3): 1

City: Karachi
Shortest path based on time taken, from Baldia to Shah Faisal Town is:
Baldia -> Shershah Colony -> Kharadar -> Clifton -> DHA Karachi -> Shah Faisal Town
Total time taken: 1 hours and 31 minutes (Distance: 50 km)
```

- **INTRA-CITY (SHORTEST DISTANCE):**

```
D:\Drive B - Development\NUST\Semester 4\DS\Project\Debug\Project.exe
PATH FINDER
To exit anywhere within the program, enter X
1. Intra-city
2. Inter-city
Choice (1/2): 1
Enter city: Karachi
Enter the source town: Baldia
Enter the destination town: Shah Faisal Town
Please choose,
1. Get path with shortest time
2. Get path with shortest distance
3. Get both combined
Choice (1/2/3): 2
City: Karachi
Shortest path based on distance, from Baldia to Shah Faisal Town is:
Baldia -> Gulshan-e-Ghazi -> Orangi Town -> Nazimabad -> Liaqatabad -> Gulshan-e-Iqbal -> Shah Faisal Town
Total distance covered: 43 km (Time: 1 hours and 36 minutes)
Press X to exit or any other key to continue...
```

- **INTRA-CITY (GET PATH BY BOTH DISTANCE AND TIME):**

```
D:\Drive B - Development\NUST\Semester 4\DS\Project\Debug\Project.exe
PATH FINDER
To exit anywhere within the program, enter X
1. Intra-city
2. Inter-city
Choice (1/2): 1
Enter city: Karachi
Enter the source town: Baldia
Enter the destination town: Shah Faisal Town
Please choose,
1. Get path with shortest time
2. Get path with shortest distance
3. Get both combined
Choice (1/2/3): 3
City: Karachi
Shortest path based on time taken, from Baldia to Shah Faisal Town is:
Baldia -> Shershah Colony -> Kharadar -> Clifton -> DHA Karachi -> Shah Faisal Town
Total time taken: 1 hours and 31 minutes (Distance: 50 km)
City: Karachi
Shortest path based on distance, from Baldia to Shah Faisal Town is:
Baldia -> Gulshan-e-Ghazi -> Orangi Town -> Nazimabad -> Liaqatabad -> Gulshan-e-Iqbal -> Shah Faisal Town
Total distance covered: 43 km (Time: 1 hours and 36 minutes)
Press X to exit or any other key to continue...
```

- **ON PRESSING X:**

```
City: Karachi
Shortest path based on distance, from Baldia to Shah Faisal Town is:
Baldia -> Gulshan-e-Ghazi -> Orangi Town -> Nazimabad -> Liaqatabad -> Gulshan-e-Iqbal -> Shah Faisal Town
Total distance covered: 43 km (Time: 1 hours and 36 minutes)
Press X to exit or any other key to continue...
Exiting...
D:\Drive B - Development\NUST\Semester 4\DS\Project\Debug\Project.exe (process 25960) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

On pressing or entering “X” anywhere within the program, the program exits.