SIMPLE NAVIGATOR

MID TERM REPORT

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Introduction:-

Navigator is an Emergency Department (ED) based service that aims to support people to move away from violent or chaotic lifestyles. Patients who access the service often present after a recent episode of violence but even if their reason for attending the ED seems at first unrelated to violence, for many, violence is somewhere in the background. These patients are often frequent attenders at the ED, either as a result of repeated violence (interpersonal or self- directed) or substance misuse or with a range of non-specific medical symptoms that may reflect their chaotic lifestyles.

ROBART technology makes robots smart and capable of learning. We have developed components that harmonize perfectly and fit together into a complete system that gives the robot a unique performance. Our AI navigation system consists of hardware (sensor, mainboard) and software, as well as accompanying IoT services which enable communication with the device.

In this navigator project this shows distance between cities
And the shortest path between the cities as mentioned below:

1. Hyderabad(h)

2. Vijayawada(h)

3. Chennai(c)

4. Delhi(e)

5. Dehradun(d)

6. Banglore(j)

7. Amaravati(a)

8. Birlamandir(b)

9. Kanchikacherla(f)

10. Vizag(i)

11. Goa(L)

12. Mysare(k)

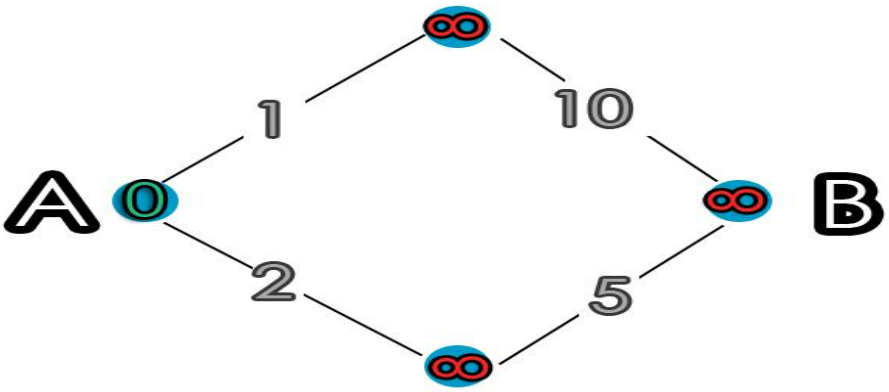
Context:-

Dijkstra’s shortest path algorithm:-

Given a graph and a source vertex in the graph, find shortest paths from source to all vertices in the given graph.

Dijkstra’s algorithm is very similar to Like MST, we generate a SPT (shortest path tree) with given source as root. We maintain two sets, one set contains vertices included in shortest path tree, other set includes vertices not yet included in shortest path tree. At every step of the algorithm, we find a vertex which is in the other set (set of not yet included) and has a minimum distance from the source.

Below are the detailed steps used in Dijkstra’s algorithm to find the shortest path from a single source vertex to all other vertices in the given graph.
Algorithm



First we'll describe Dijsksta's algorithm in a few steps, and then expound on them further: Step 0
Temporarily assign C(A) = 0 and C(x) = infinity for all other x. C(A) means the Cost of A C(x) means the current cost of getting to node x

Step 1
Find the node x with the smallest temporary value of c(x). If there are no temporary nodes or if c(x) = infinity, then stop. Node x is now labeled as permanent. Node x is now labeled as the current node. C(x) and parent of x will not change again.

Step 2
For each temporary node labeled vertex y adjacent to x, make the following comparison: if c(x) + Wxy < c(y), then c(y) is changed to c(x) + Wxy assign y to have parent x

Step 3
Return to step 1.

Note:-we used this method for finding the shortest path between the cities

Navigation System:-

navigation systems use stored map information for determining optimal route selection based on a shortest path algorithm. This technique is quite successful in getting you to where you want to go in a reasonable time and is fault tolerant in the sense that it can automatically reroute in case of error. One disadvantage of this approach is that it does not have any memory. It does not automatically remember the actual time it took you to get there nor does it learn from that experience and use the actual

measurements to improve future route selection. A simple method for modifying a GPS navigational system to incorporate a simple learning paradigm using velocity profiles is described. In addition to learning, these velocity profiles can also be used to extract features from the environment which can then be used to further improve the accuracy of optimal route selection. It is assumed to be completely autonomous which means that it requires no user input or intervention. All of the required information is derived from recording GPS location, date and time.

Conclusion:-

Application areas of navigator:-

1. road ways
2. Sea ways
3. Air ways
4. Space travels

Etc…..

Airlines and flight operators can significantly reduce their operational costs and overhead by optimizing their fleets and operations with AI-powered systems.

Automotive navigation systems represent a convergence of a number of diverse technologies many of which have been available for many years, but were too costly or inaccessible. Limitations such as batteries, display, and processing power had to be overcome before the product became commercially viable.

For an average user, an in-vehicle navigation differs less from free maps in their smartphones also including GPS receiver, route instructions, a loudspeaker for voice guidance, calculation of best routes, distances and time. Some purchased navigation apps can contain a safety camera warning or route planning. It is also possible to download offline maps of all the needed points of interest in your region. However, it can take additional storage space on your smartphone.

Student Declaration

This is to declare that this report has been written by me/us. No part of the report is copied from other sources. All information included from other sources have been duly acknowledged. I/We aver that if any part of the report is found to be copied, I/we are shall take full responsibility for it.

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BONAFIDE CERTIFICATE

Certified that this project report **"SIMPLE NAVIGATOR BETWEEN THE CITIES"** is the bonafide work of **"Venkata ramana, rasheed, rohit"** who carried out the project work under my supervision.

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