

**SWE3999 - Technical Answers to Real World Problems
(TARP)**

ESSENTIAL MEDICAL NEEDS

Title

By

17MIS1019 B. KIRAN KUMARREDDY

17MIS1039 S. SUKESH KUMAR

M.Tech Software Engineering
(5 Year Integrated)

Submitted to

Dr. A. BHUVANESWARI

School of Computer Science and Engineering



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DECLARATION

I hereby declare that the report titled “**ESSETIAL MEDICAL NEEDS**” submitted by me to VIT Chennai is a record of bona-fide work undertaken by me under the supervision of **Dr. A. Bhuvaneswari**, School of Computer Science and Engineering, Vellore Institute of Technology, Chennai.

Signature of the Candidate

(To be (digital)signed by the student)

17MIS1019, 17MIS1039

CERTIFICATE

Certified that this project report entitled “**ESSENTIAL MEDICAL NEEDS**” is a bonafide work of **BODE KIRAN KUMAR REDDY (17MIS1019), SOLLETI SUKESH KUMAR (17MIS1039)** and they carried out the Project work under my supervision and guidance for SWE3999 - Technical Answers to Real World Problems (TARP).

Dr. A. Bhuvaneswari
SCOPE, VIT Chennai

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(To be (digital)signed by the student)

BODE KIRAN KUMAR REDDY

17MIS1019

SOLLETY SUKESH KUMAR

17MIS1039

ABSTRACT

Drugs (Medicines) are synthetic substances or mixes used to fix, stop, or forestall malady; ease manifestations; or help in the finding of sicknesses. Advances in meds have empowered specialists to fix numerous illnesses and spare lives.

Now a day's medicines are playing an important role in human life.

Medicines preventing disease and injury and relieving pain and avoiding premature death and pursuing a peaceful death.

People who are living in the society needs the medicines, in developed areas people having knowledge about buying medicines and consult the specialists, but in developing areas 50% of the people don't have a knowledge about which medicines they have to use and which type of specialists they have to consult.

Now a day's medicines scam is also done. So, people are not getting the good quality of medicines from medical shops.

For all the above reasons we are providing a website having different modules to consult doctor, to order quality medicines, and delivery of medicines in less time with less effort and quality of medicines by using scheduling and least cost distance algorithms

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1. Introduction

Drugs (Medicines) are synthetic substances or mixes used to fix, stop, or forestall malady; ease manifestations; or help in the finding of sicknesses. Advances in meds have empowered specialists to fix numerous illnesses and spare lives.

Basic medications are those that fulfill the need medical care needs of the populace. They are chosen with due respect to general wellbeing importance, proof on adequacy and security, and similar cost-viability. 1975 World Health Assembly (WHA) meeting, report by WHO Director-General with respect to issues confronting nations in region of prescriptions, first notice of basic meds. 1977 first Expert Committee on basic prescriptions issues specialized report and gathering of fundamental drugs. The Alma-Ata statement during the International Conference on Primary Health Care in 1978 reaffirms that wellbeing is a basic liberty and the achievement of the most elevated conceivable degree of wellbeing is a most significant overall social objective. The Alma Ata announcement has sketched out the eight fundamental parts of essential medical services and arrangement of basic drugs is one of them. Alma-Ata Declarations on essential consideration gave hand book on fundamental drugs. 1978 Resolution WHA 31.32 passed asking individuals to set up public basic medication records.

* **Original definition (1977):** Essential drugs of most extreme significance, fundamental, crucial, and vital for the medical care needs of the populace. World Health Organization (WHO) presented the idea of fundamental medications in 1977. Fundamental prescriptions are those that fulfill the need medical services needs of the populace. They are chosen with due respect to general wellbeing importance, proof on adequacy and security, and relative cost-viability.

Basic prescriptions are planned to be accessible inside the setting of working wellbeing Frameworks consistently in satisfactory sums, in the fitting measurement structures, with guaranteed Quality and satisfactory data, and at a value the individual and the network can bear.

The usage of the idea of basic meds is expected to be adaptable and versatile to a wide range of circumstances. It joins the need to routinely refresh meds determinations to reflect new helpful choices and changing remedial needs; the need to guarantee drug quality; and the requirement for proceeded with advancement of better meds,

medications for developing sicknesses, and medications to meet changing opposition designs.

Now a day's medicines are playing an important role in human life. Medicines preventing disease and injury and relieving pain and avoiding premature death and pursuing a peaceful death.

People who are living in the society needs the medicines, in developed areas people having knowledge about buying medicines and consult the specialists, but in developing areas 50% of the people don't have a knowledge about which medicines they have to use and which type of specialists they have to consult.

Now a day's medicines scam is also done. So, people are not getting the good quality of medicines from medical shops.

For all the above reasons we are providing a website having different modules to consult doctor , to order quality medicines, and delivery of medicines in less time with less effort and quality of medicines by using scheduling and least cost distance algorithms

1.1 OBJECTIVE AND GOAL OF THE PROJECT:

We are providing a web application for doctors, patients and pharmacies also. From this, a patient can discuss about his disease with doctor. Patient can get the prescription from the doctors, if he wants medicines from the same website, he can order those medicines from pharmacies which we provided in the website. The pharmacy members get the list from the patient orders and they can deliver medicines based on the patient's ordered date and priority. By that pharmacy members can deliver the medicines with in less time to every patient located in different locations. For this we have been used scheduling algorithms (FIFO, PRIORITY) to sort the orders list and also used least cost distance algorithms (KRUSHKALS, DIJKSTRAS) to deliver the orders in less time.

1.2 PROBLEM STATEMENT

- **Social issue:**

people who are living in the society needs the medicines, in developed areas people having knowledge about buying medicines and consult the specialists, but

in developing areas 50% of the people don't have a knowledge about which medicines they have to use and which type of specialists they have to consult.

Now a day's medicines scam is also done. So, people are not getting the good quality of medicines from medical shops.

- → Our intension is to lessen this sort of social issue through our web application.

2. Literature Survey

S.NO	TITLE AND AUTHOR	YEAR AND PUBLICATION	TECHNIQUES	LIMITATIONS
1.	Medical Emergency and Healthcare Model <u>Shihaa Hameed</u> , <u>Vladimir Miho</u> , <u>Wajdi AlKhateeb</u> , <u>Aisha Hassan</u>	International Conference on Computer and Communication Engineering (ICCCE 2010)	<u>Enhancement</u> with SMS and MMS Facilities	It can offer: SMS, MMS, live audio and video coverage of emergency situations, location-based access to emergency situation, wide area coverage, and provides flexibility for the user.
2.	The medical project management system <u>Dridi, Ahmed</u> ; <u>Tissaoui, Anis</u> ; <u>Sassi, Salma</u>	Global Summit on Computer & Information Technology (GSCIT) 2015	ontological components and an XML data exchange format	A semantic middleware for a unified representation of medical records
3.	Virtual Medical Care: How Are Our Patients Using Online Health Information? <u>Heather A. Liszka</u> ; <u>Terrence E. Steyer</u> ; <u>William J. Hueston</u>	Journal of community health (2006)	Online Health-seeking using internet and online health information	USING ONLINE HEALTH INFORMATION

4.	Healthcare provider-patient online consultation and compliance program <u>Fotsch, E., DelGuidice, D., & Yuan, L.</u>	(2004). <i>U.S. Patent</i>	messages includes medical advice or medical information	includes one or more messages to be transmitted to the user when a condition associated with the corresponding message is satisfied
5.	Seeking health information online: does limited healthcare access matter? <u>Neeraj Bhandari, Yunfeng Shi, Kyoungrae Jung</u>	19 June 2014 <i>Journal of the American Medical Informatics Association</i>	Internet, Online Health Information Seeking, Health Care Access, Health Information Systems, <u>Consumer Health Information</u>	Brief Communication is done in internet
6.	Online health care <u>Fayezah Anjum , Abu Saleh Mohammed Shoaib ,Abdullah Ibne Hossain , Mohammad Monirujjaman Khan</u>	2018 Computing and Communication Workshop and Conference (CCWC)	<u>using Codeigniter</u> , a PHP framework. The database has been designed using <u>mySQL</u> and XAMPP as the server.	The doctors can view their patient's data and issue prescriptions through the appointments as per the patients cases
7.	Big Health Application System based on Health Internet of Things and Big Data <u>Ma, Y., Wang, Y., Yang, J., Miao, Y., & Li, W</u>	<i>IEEE Access</i> , 5, 7885-7897 2016	Blending the latest information technology into the healthcare system will greatly mitigate the problems based on the health Internet of Things and big data	the big health care <u>system's</u> architecture, technology challenges and several typical large health applications
8.	M-health : A complete healthcare solution <u>Rohan V. Vaidya Darshan K. Trivedi</u>	2017 International Conference on Computing Methodologies and Communication (ICCMC)	Android application	A smart phone equipped with a internet connection.

9.	Mobile based healthcare management using artificial intelligence Amiya Kumar Tripathy Rebeck Carvalho Keshav Pawaskar Suraj Yadav Vijay Yadav	2015 International Conference on Technologies for Sustainable Development (ICTSD)	The system will consist of video conferencing to connect remotely with the Doctor.	The Doc-Bot which was developed earlier is now being transferred to mobile platform and will be further advanced for diagnosis of common diseases
10.	All Time Medicine and Health Device Pruthvesh Desai , Biswamoy Pattnaik , Sreya Dey , T.S. Aditya Karthik Rajaraman ,M. Aarth	2019 5th International Conference on Advanced Computing & Communication Systems (ICACCS)	the prototype of the All Time Medicine and Health device for the use of every person in need of drugs or medical assistance	ATMAH comprises of an automatic medicine vending machine to dispense drugs as per a doctor's prescription.

3. REQUIREMENTS SPECIFICATION:

3.1 HARDWARE REQUIREMENTS:

- WINDOWS 10
- 4GB RAM / 8GB RAM

3.2 SOFTWARE REQUIREMENTS:

- COLAB
- XAMPP
- JUPYTER (Python notebook)
- Languages: HTML, CSS, JAVASCRIPT, PHP, PYTHON

4 SYSTEM DESIGN:

MODULES LIST:

- Website modules are home page, signup, registration, login, profile, service modules (patient, doctor, pharmacies), clinic, log out, database.
- Backend performing modules are scheduling algorithms (FIFO, PRIORITY), and distance based least cost algorithms (KRUSHKAL'S, DIJKSTRA'S).

USED ALGORITHMS:

- SCHEDULING ALGORITHMS:
 - FIFO (FIRST IN FIRST OUT)
 - PRIORITY BASED
- LEAST COST DISTANCE ALGORITHMS:
 - KRUSHKAL
 - DIJKSTRAS

5 IMPLEMENTATION OF THE SYSTEM:

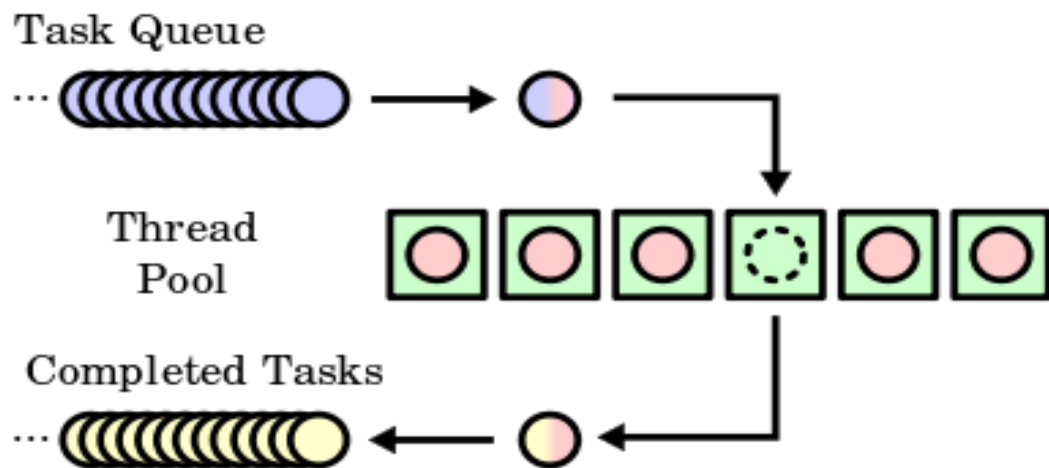
SCHEDULING ALGORITHMS:

1) FIFO:

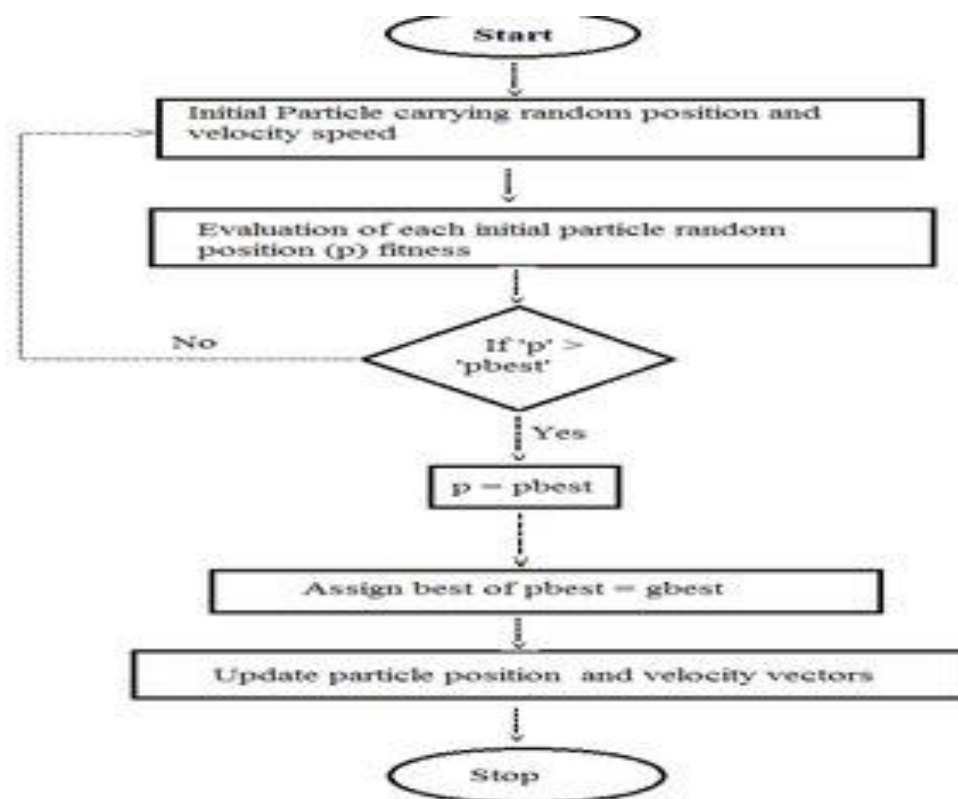
First in, first out (FIFO), otherwise called first come, first served (FCFS), is the least complex planning calculation. FIFO essentially lines measures in the request that they show up in the prepared line. This is regularly utilized for an assignment line, for instance as represented in this segment.

- Since setting switches just happen upon measure end, and no redesign of the cycle line is required, booking overhead is negligible.
- Throughput can be low, in light of the fact that long cycles can be holding the CPU, making the short cycles hang tight for quite a while (known as the caravan impact).
- No starvation, in light of the fact that each cycle persuades opportunity to be executed after a distinct time.
- Turnaround time, holding up time and reaction time rely upon the request for their appearance and can be high for similar reasons above.
- No prioritization happens, along these lines this framework experiences difficulty fulfilling measure time constraints.
- The absence of prioritization implies that as long as each cycle inevitably finishes, there is no starvation. In a climate where a few cycles probably won't finish, there can be starvation.
- It depends on lining.

ARCHITECTURE DIAGRAM (FIFO):



FLOW CHART:



2) PRORITY SCHEDULING:

If there should arise an occurrence of need booking the need isn't constantly set as the backwards of the CPU burst time, rather it very well may be inside or remotely set,

however yes the planning is done based on need of the cycle where the cycle which is most pressing is handled first, trailed by the ones with lesser need all together. Cycles with same need are executed in FCFS way.

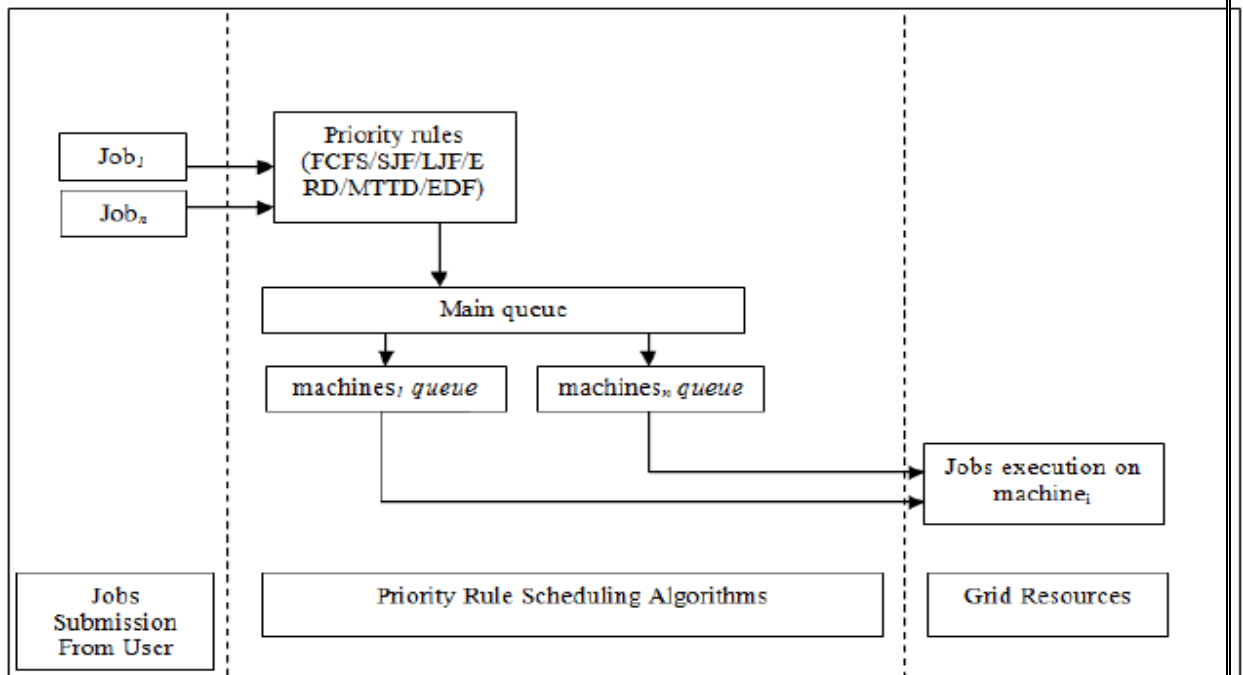
→ Priority booking is a non-preemptive calculation and one of the most widely recognized planning calculations in bunch frameworks.

→ Each measure is relegated a need. Cycle with most noteworthy need is to be executed first, etc.

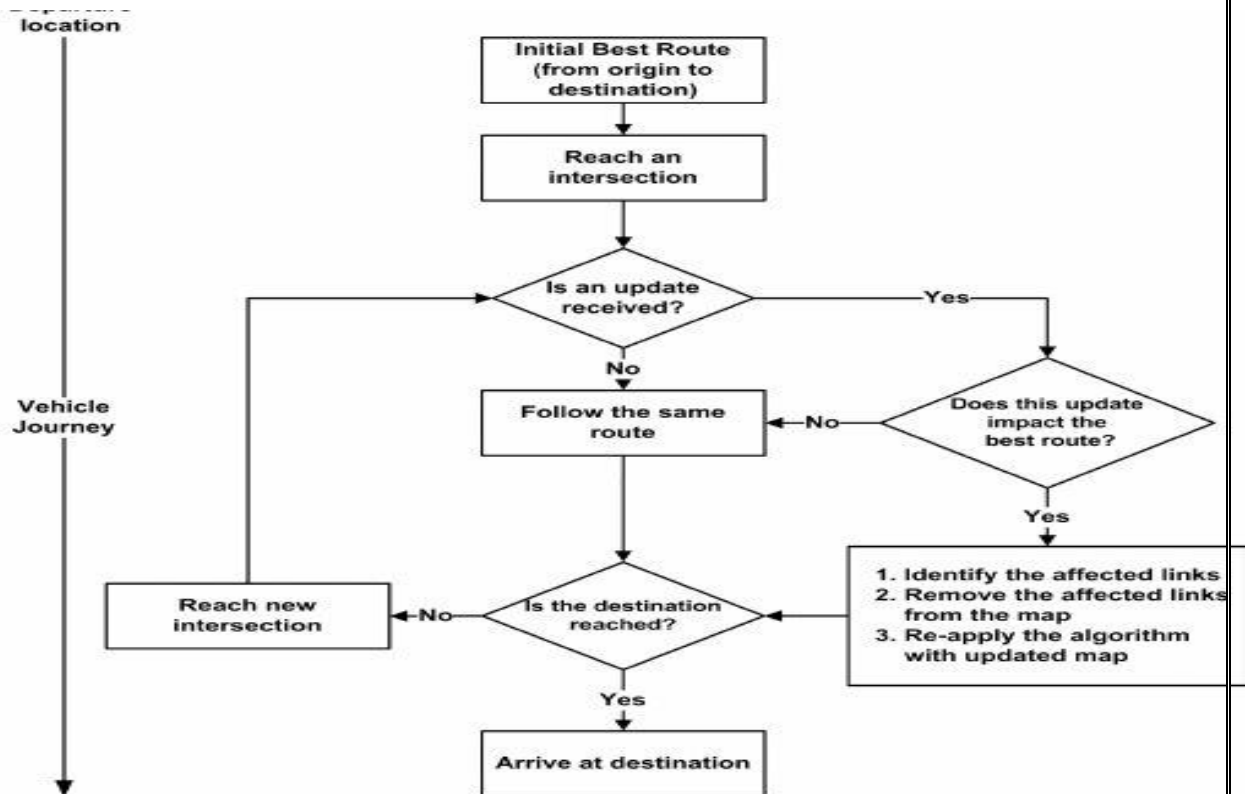
→ Processes with same need are executed on first start things out served premise.

→ Priority can be chosen dependent on memory prerequisites, time necessities or some other asset necessity.

ARCHITECTURE DIAGRAM:



FLOW CHART:



LEAST COST DISTANCE ALGORITHMS:

1) KRUSKAL'S ALGORITHM:

Kruskal's calculation finds a base spreading over woods of an undirected edge-weighted diagram. On the off chance that the diagram is associated, it finds a base crossing tree. (A base crossing tree of an associated chart is a subset of the edges that frames a tree that incorporates each vertex, where the aggregate of the loads of the apparent multitude of edges in the tree is limited. For a detached diagram, a base spreading over woodland is made out of a base crossing tree for each associated part.) It is an insatiable calculation in chart hypothesis as in each progression it includes the following most reduced weight edge that won't shape a cycle to the base traversing backwoods.

Given an associated and undirected chart, a crossing tree of that diagram is a subgraph that is a tree and interfaces all the vertices together. A solitary chart can have a wide range of traversing trees. A base crossing tree (MST) or least weight traversing tree

for a weighted, associated and undirected chart is a spreading over tree with weight not exactly or equivalent to the heaviness of each other spreading over tree. The heaviness of a crossing tree is the aggregate of loads given to each edge of the traversing tree.

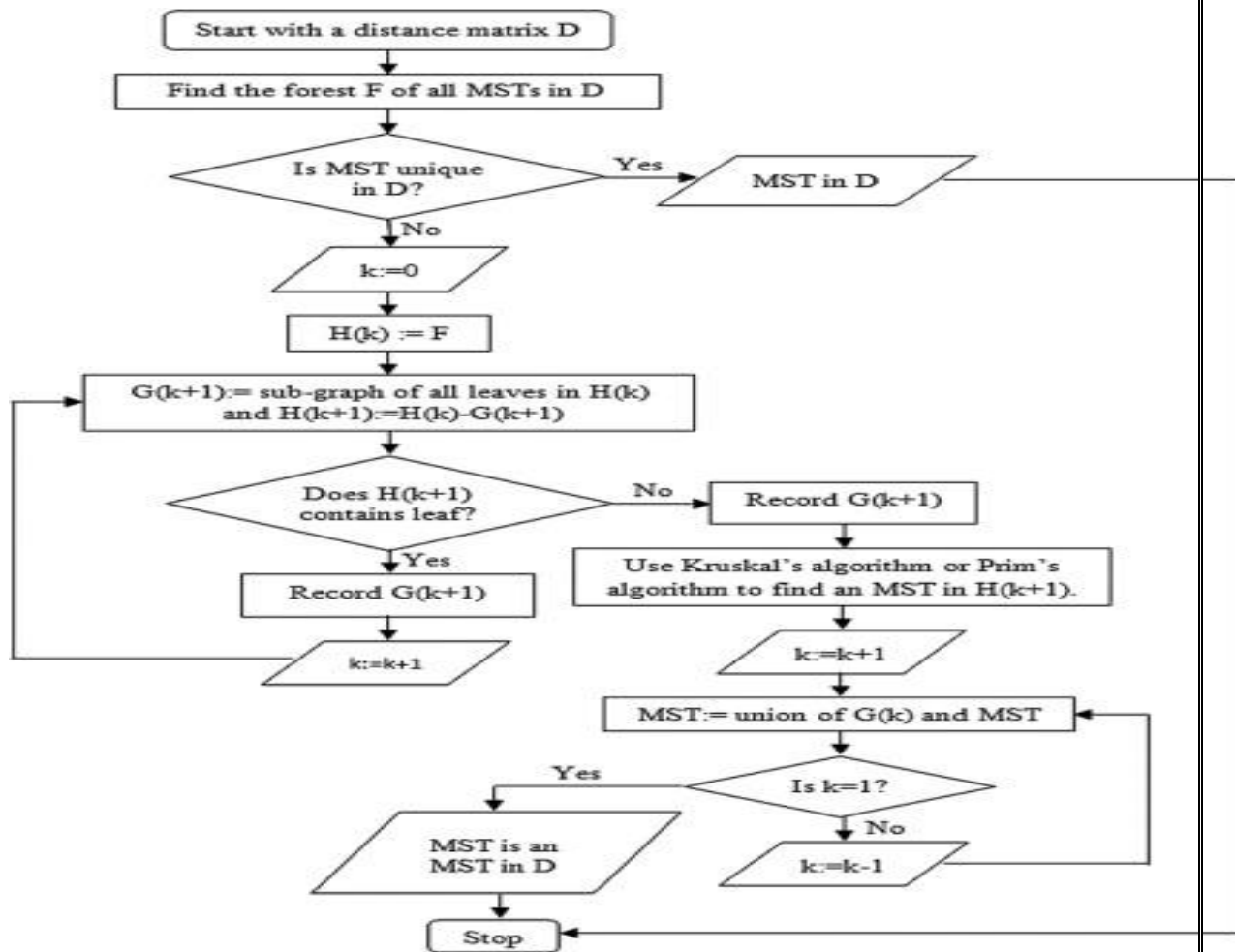
What number of edges does a base spreading over tree has?

A base spreading over tree has $(V - 1)$ edges where V is the quantity of vertices in the given diagram.

The following are the means for discovering MST utilizing Kruskal's calculation

1. Sort all the edges in non-diminishing request of their weight.
2. Pick the littlest edge. Check on the off chance that it shapes a cycle with the traversing tree framed up until now. On the off chance that cycle isn't framed, incorporate this edge. Else, dispose of it.
3. Rehash step#2 until there are $(V-1)$ edges in the spreading over tree.

FLOW CHART:



2) DIJKSTRA'S ALGORITHM:

Dijkstra's calculation (or Dijkstra's Shortest Path First calculation, SPF calculation) is a calculation for finding the most limited ways between hubs in a chart, which may speak to, for instance, street organizations. It was brought about by PC researcher Edsger W. Dijkstra in 1956 and distributed three years after the fact.

The calculation exists in numerous variations. Dijkstra's unique calculation found the most brief way between two given hubs, yet a more normal variation fixes a solitary hub as the "source" hub and finds most brief ways from the source to all different hubs in the diagram, creating a most limited way tree.

For a given source hub in the chart, the calculation finds the most brief way between that hub and each other. It can likewise be utilized for finding the most brief ways from a solitary hub to a solitary objective hub by halting the calculation once the most brief way to the objective hub has been resolved. For instance, if the hubs of

the diagram speak to urban areas and edge way costs speak to driving separations between sets of urban areas associated by an immediate street (for straightforwardness, overlook red lights, stop signs, expressways and different impediments), Dijkstra's calculation can be utilized to locate the most brief course between one city and every other city. A broadly utilized utilization of briefest way calculation is network directing conventions, most eminently IS-IS (Intermediate System to Intermediate System) and Open Shortest Path First (OSPF). It is additionally utilized as a subroutine in different calculations, for example, Johnson's.

The Dijkstra calculation utilizes marks that are positive numbers or genuine numbers, which are completely requested. It tends to be summed up to utilize any names that are halfway arranged, gave the ensuing marks (a resulting name is delivered while crossing an edge) are monotonically non-diminishing. This speculation is known as the conventional Dijkstra most brief way calculation.

DESCRIPTION:

Assume you might want to locate the briefest way between two convergences on a city map: a beginning stage and an objective. Dijkstra's calculation at first denotes the good ways (from the beginning stage) to each other convergence on the guide with endlessness. This is done not to infer that there is an endless separation, however to take note of that those crossing points have not been visited at this point. A few variations of this technique leave the convergences' separations unlabeled. Presently select the current convergence at every emphasis. For the principal emphasis, the current convergence will be the beginning stage, and the separation to it (the crossing point's name) will be zero. For ensuing emphasess (after the primary), the current convergence will be a nearest unvisited crossing point to the beginning stage (this will be anything but difficult to track down).

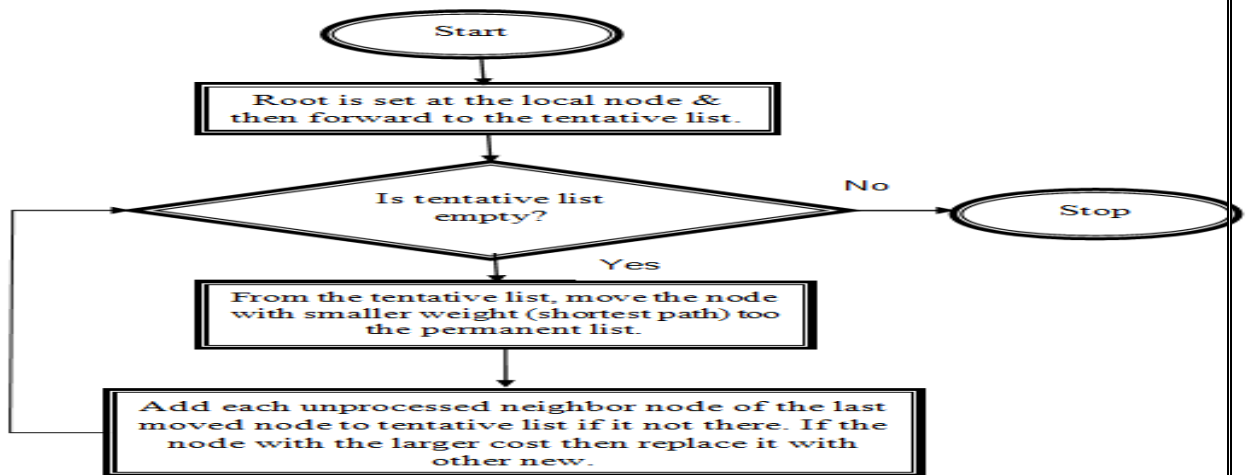
From the current convergence, update the separation to each unvisited crossing point that is legitimately associated with it. This is finished by deciding the total of the separation between an unvisited crossing point and the estimation of the current convergence and afterward relabeling the unvisited convergence with this worth (the aggregate) on the off chance that it is not exactly the unvisited convergence's present worth. In actuality, the convergence is relabeled if the way to it through the current crossing point is more limited than the recently known ways. To encourage briefest way ID, in pencil, mark the street with a bolt highlighting the relabeled

convergence on the off chance that you name/re name it, and delete all others highlighting it. After you have refreshed the separations to each neighboring convergence, mark the current convergence as visited and select an unvisited convergence with insignificant good ways (from the beginning stage) or the most reduced label as the current crossing point. Convergences set apart as visited are marked with the briefest way from the beginning stage to it and won't be returned to or gotten back to.

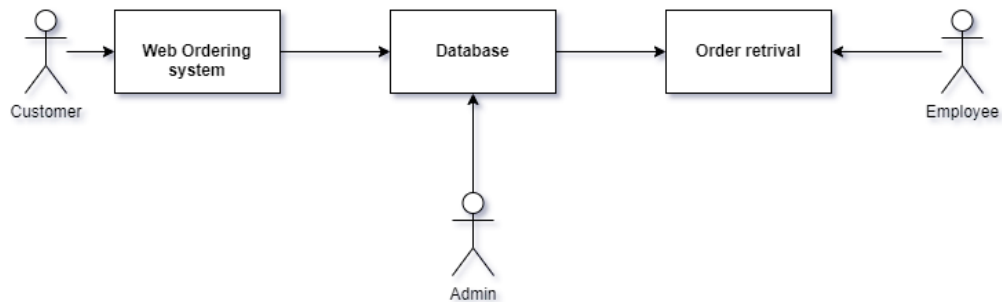
Proceed with this cycle of refreshing the neighboring convergences with the most limited separations, denoting the current crossing point as visited, and moving onto a nearest unvisited convergence until you have denoted the objective as visited. Whenever you have denoted the objective as visited (just like the case with any visited convergence), you have decided the most brief way to it from the beginning stage and can follow your way back after the bolts backward. In the calculation's usage, this is typically done (after the calculation has arrived at the objective hub) by following the hubs' folks from the objective hub up to the beginning hub; that is the reason we additionally monitor every hub's parent.

This calculation makes no endeavor of direct "investigation" towards the objective as one may anticipate. Or maybe, the sole thought in deciding the following "current" convergence is its good ways from the beginning stage. This calculation consequently extends outward from the beginning stage, intelligently considering each hub that is nearer as far as most limited way separation until it arrives at the objective. At the point when perceived thusly, it is clear how the calculation essentially finds the most limited way. In any case, it might likewise uncover one of the calculation's shortcomings: its overall gradualness in certain geographies.

FLOW CHART:



Architecture Diagram:



6. RESULTS AND DISCUSSION:

- We developed different modules as all are included in website to get all the inputs and perform the scheduling and least distance (cost) algorithms.
- Modules are home page, signup, registration, login, profile, service modules (patient, doctor, pharmacies), clinic, log out, database.
- Next, we can perform the scheduling algorithms based on the exported csv file of ordered medicines.
- For delivery we have used GEOPY to find out the order location with latitude and longitude.
- And also, we used NETWORKX to perform the distance between the locations, and also implementing the KRUSHKALS and DIJKSTRAS algorithms to find out the least distance between the each and every location mentioned in the orders list

- The result will be the directions that the delivery boy should follow to deliver the products or medicines with less effort and in less time.

7. CONCLUSION AND FUTURE WORK:

- From this project we can conclude that using FIFO and priority scheduling algorithms are used to deliver the medicines on first ordered one and priority based. Kruskal's and Dijkstra's algorithms are used to deliver the medicines with least cost on distance. The medicines will be delivered accordingly based on the customer choice. The delivery of the products will be faster with less effort and in less time.
- Anyone can solve their medical problems or diseases in this website whether it is minor or major.
- And also, anyone can order the medicines from our website and we can deliver to any locations.
- This project resolves the social issue to deliver the medicines in less time with less effort.

8. REFERENCES

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APPENDIX

SAMPLE CODE:

```
import numpy as np
import pandas as pd

df=pd.read_csv("/content/ordermedic.csv")
df['DATE']=pd.to_datetime(df['DATE'], infer_datetime_format=True)

df.sort_values(by=['DATE'])

df.sort_values(by=['PRIORITY'],ascending=False)

df.sort_values(by=['DATE','PRIORITY'])

!pip install geopandas
!pip install geopy
import pandas as pd
import geopandas as gpd
import geopy
from geopy.geocoders import Nominatim
from geopy.extra.rate_limiter import RateLimiter
import matplotlib.pyplot as plt
import folium
from folium.plugins import FastMarkerCluster

from geopy.extra.rate_limiter import RateLimiter
locator = Nominatim(user_agent="myGeocoder")
geocode = RateLimiter(locator.geocode, min_delay_seconds=1)
df['location'] = df['ADDRESS'].apply(geocode)
df['point'] = df['location'].apply(lambda loc: tuple(loc.point) if loc else None)

df.head()
```

```

# split point column into latitude, longitude and altitude columns
df[['latitude', 'longitude', 'altitude']] = pd.DataFrame(df['point'].tolist(), index=df.index)
df.head()

df.head()

df.latitude.isnull().sum()

df = df[pd.notnull(df["latitude"])]

map1 = folium.Map(
    location=[28.640971,77.044717],
    tiles='cartodbpositron',
    zoom_start=12,
)

df.apply(lambda row:folium.CircleMarker(location=[row["latitude"],
row["longitude"]]).add_to(map1), axis=1)
map1

df

df.shape

len(df)

df.to_csv('orders.csv')

df1=pd.read_csv('/content/orders.csv')
df1

```



```
!pip install Dijkstra
```

```
from dijkstar import Graph, find_path  
graph=Graph()
```

```
n=df1.shape[0]+1  
n
```

```
from geopy.distance import geodesic  
geodesic((df1['latitude'][0],df1['longitude'][0]),(df1['latitude'][1],df1['longitude'][1])).  
km
```

```
for i in range(n-1):  
    for j in range(n-1):
```

```
graph.add_edge(i,j,geodesic((df1['latitude'][i],df1['longitude'][i]),(df1['latitude'][j],df1  
['longitude'][j])).km)
```

```
find_path(graph,0,16)
```

```
!pip install networkx
```

```
import networkx as nx  
g=nx.Graph()
```

```
m=[]
```

```
for i in range(n-1):  
    for j in range(n-1):
```

```
m.append((i,j,geodesic((df1['latitude'][i],df1['longitude'][i]),(df1['latitude'][j],df1['long  
itude'][j])).km))
```

```
g.add_weighted_edges_from(m)
```

```

print(nx.dijkstra_path(g,1,16))

from collections import defaultdict

class Graph:

    def __init__(self, vertices):
        self.V = vertices
        self.graph = []

    def addEdge(self, u, v, w):
        self.graph.append([u, v, w])

    def find(self, parent, x1):
        if parent[x1] == x1:
            return x1
        return self.find(parent, parent[x1])

    def union(self, parent, rank, x, y):
        xroot = self.find(parent, x)
        yroot = self.find(parent, y)

        if rank[xroot] < rank[yroot]:
            parent[xroot] = yroot
        elif rank[xroot] > rank[yroot]:
            parent[yroot] = xroot

        else:
            parent[yroot] = xroot
            rank[xroot] += 1

    def KruskalMST(self):

        result = []

```

```

i = 0

e = 0

self.graph = sorted(self.graph,
                    key=lambda item: item[2])

parent = []
rank = []

for node in range(self.V):
    parent.append(node)
    rank.append(0)

while e < self.V - 1:

    u, v, w = self.graph[i]
    i = i + 1
    x = self.find(parent, u)
    y = self.find(parent, v)

    if x != y:
        e = e + 1
        result.append([u, v, w])
        self.union(parent, rank, x, y)

minimumCost = 0
print ("Edges in the constructed MST")
for u, v, weight in result:
    minimumCost += weight
    print("%d -- %d == %d" % (u, v, weight))

```

```
print("Minimum Distance to deliver" , minimumCost)

g1 = Graph(n-1)
for i in range(n-1):
    for j in range(n-1):

g1.addEdge(i,j,geodesic((df1['latitude'][i],df1['longitude'][i]),(df1['latitude'][j],df1['longitude'][j])).km)

g1.KruskalMST()

nx.draw(g)
```

SNAPSHOTS (OUTPUT SCREENSHOTS):

The image displays three screenshots of a medical application's sign-up forms, each overlaid on a background image related to healthcare.

PHARMACY SIGN UP FORM

Who are you ?

Name
Enter Pharmacy Name

Phone number
+33 6 99 99 99 99

Email
solletyketankumar@gmail.com

Address
Enter your address

Duty Hours
--:-- --:--

Password

Sign up !

Patient SignUp Form

SignUp to your account

Name

Email
solletyketankumar@gmail.com

Telephone

Address

dd-mm-yyyy

☐ Male ☐ Female

☐ Remember Me ? [Forgot Password?](#)

SIGN UP

DOCTOR SIGN UP FORM

Who are you ?

Mr. First name Last name

Email
solletyketankumar@gmail.com

Address
Enter your address

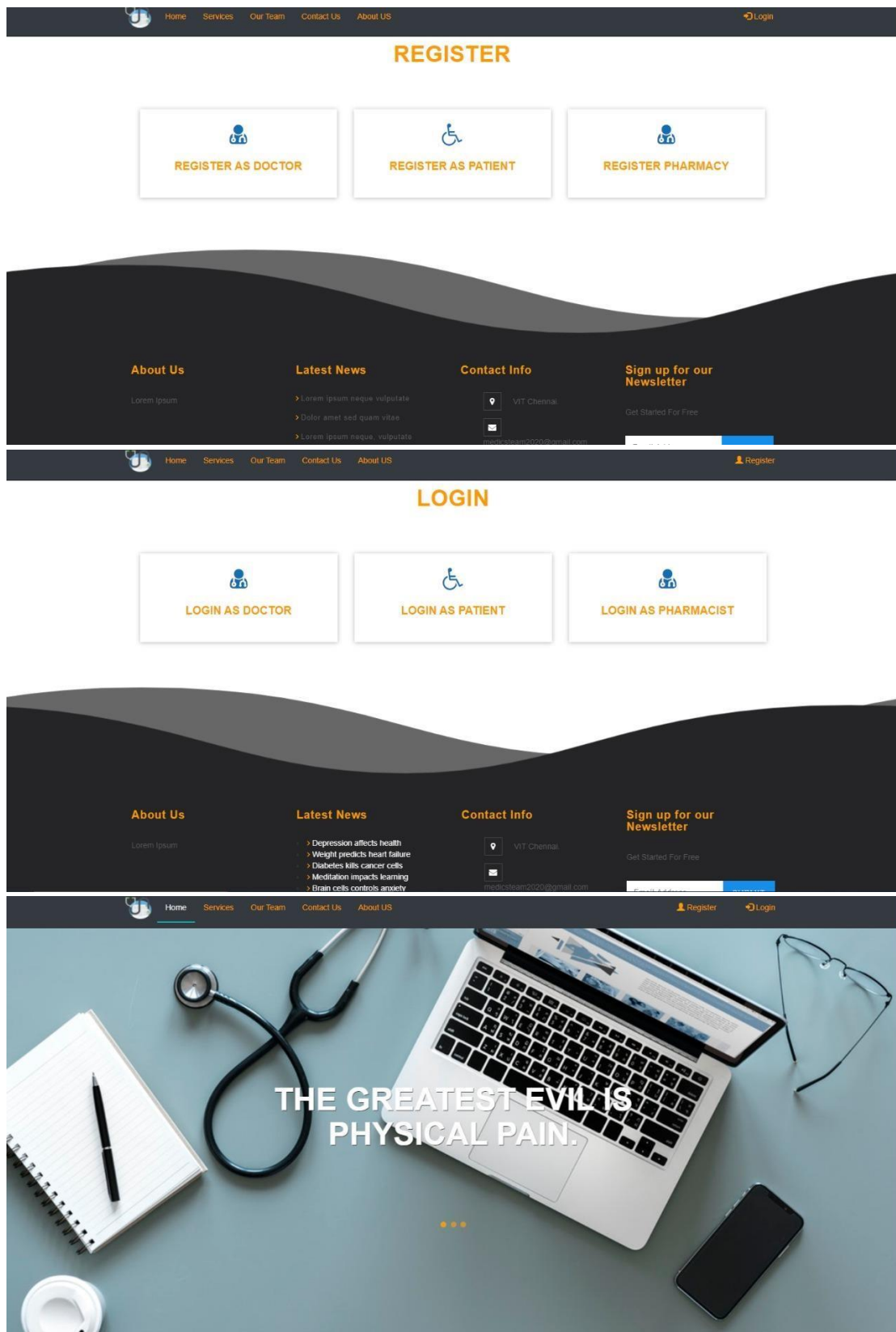
Phone number
+33 6 99 99 99 99

Specialization
Your Specialization ?

Duty Hours
--:-- --:--

Password

Sign up !



phpMyAdmin

Server: 127.0.0.1 Database: teammedico Table: pharmacy

Showing rows 0 - 1 (2 total. Query took 0.0007 seconds)

SELECT * FROM 'pharmacy'

Options

	Phar_Name	Phar_Id	Phar_Location	StartingHours	EndingHours	PhoneNumber	Password	Email
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	Walgreen	1	14 Street Lake View Park,UK	00:00:00	11:59:00	234112321	\$2y\$10\$znECGWx0ma3cQ7mia8AuY0ZFdLs0ZKgtURMc...	pharmacy@gmail.com
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	Sukesh solisty	2	VIT university	10:00:00	22:00:00	2147483647	\$2y\$10\$ncDh61B8ogacG.77wNwJDu6P4kTz08ecBY46y4f4R B...	solistyketankumar@gmail.com

Query results operations

Print Copy to clipboard Export Display chart Create view

Bookmark this SQL query

Label: ☐ Let every user access this bookmark

Bookmark this SQL query

phpMyAdmin

Server: 127.0.0.1 Database: teammedico Table: orders

Showing rows 0 - 11 (12 total. Query took 0.0064 seconds)

SELECT * FROM 'medicine'

Options

	ord_id	Name	Address	Phone_No	Gmail	Date	priority
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	1	sukesh	Kamla Nagar,Delhi,India	8497997380	suk123@gmail.com	01-11-2020 02:45	5
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2	kiran	Shiva Road,Delhi,India	8428128985	kir123@gmail.com	01-11-2020 02:47	4
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	3	vishwa	Falz Road,Delhi,India	8496531278	vish123@gmail.com	02-11-2020 18:54	3
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	4	hemant	Chandan Market,Delhi,India	8674593218	hem567@gmail.com	01-11-2020 12:02	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	5	sirfam	Lajpat Nagar,Delhi,India	9674581238	sir1528@gmail.com	02-11-2020 19:06	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	6	hathik	Rakhi,Delhi,India	9812367468	hathik@gmail.com	02-11-2020 22:22	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	7	yassen	Pashpa Market,Delhi,India	9534698712	shahk124@gmail.com	02-11-2020 17:12	5
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	8	bhagat	Palika Bazar,Delhi,India	9163248579	singh143@gmail.com	01-11-2020 15:12	5
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	9	pavan	Rk Singh Marg,Delhi,India	9566148832	pavan369@gmail.com	01-11-2020 06:03	4
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	10	karthik	Lal Kuan,Delhi,India	9996622333	karthik111@gmail.com	01-11-2020 06:36	4
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	11	manoj	Uttam nagar,Delhi,India	9450613278	mano555@gmail.com	02-11-2020 14:15	3
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	12	manideep	Wazirpur Industrial Area,Delhi,India	9490651238	mani@gmail.com	02-11-2020 16:18	3
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13	hathik	New Arya Samaj Road,Delhi,India	9562317823	hathik143@gmail.com	01-11-2020 16:19	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	14	venky	Gurgaon,Delhi,India	9890986235	venky143@gmail.com	01-11-2020 19:20	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	15	naveen	Chiranjiv Tower,Delhi,India	9933641267	naveenblock@gmail.com	02-11-2020 01:14	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	16	narendra	Sadh Nagar,Delhi,India	8865412398	nani@gmail.com	02-11-2020 16:16	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	17	mali	Laxmi Nagar,Delhi,India	7846951238	malkot@gmail.com	02-11-2020 21:06	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	18	surya	Devil Road,Delhi,India	8428128953	suryam@gmail.com	01-11-2020 22:19	2
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	19	sheel	Wazirpur Industrial Area,Delhi,India	6001265439	sheelhasa@gmail.com	01-11-2020 17:16	4
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	20	sadik	Devil Road,Delhi,India	9652447816	sadiksabu@gmail.com	01-11-2020 07:07	1

Query results operations

Print Copy to clipboard Export Display chart Create view

Bookmark this SQL query

Label: ☐ Let every user access this bookmark

Bookmark this SQL query

phpMyAdmin

Server: 127.0.0.1 Database: teammedico Table: medicine

Showing rows 0 - 11 (12 total. Query took 0.0064 seconds)

SELECT * FROM 'medicine'

Options

	Medic_Id	Medic_Name	Description	Price	Potency	ExpiryDate	Phar_Id
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	1			0		0000-00-00	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2	Panadol	Pain Killer	20	100mg	2018-11-14	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	3	Panadol	Pain Killer	20	100mg	2018-11-14	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	4	Panadol	Pain Killer	20	100mg	2018-11-14	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	5	Panadol	Pain Killer	20	100mg	2018-11-14	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	6	Panadol	Pain Killer	20	100mg	2018-11-14	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	7	PPasd	asdkasj	0		2018-12-11	0
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	8	Brufen	Pain Killer	20	100mg	2017-10-16	6
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	9	Brufen	Pain Killer	200	50mg	2020-12-31	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	10	Panadol	Pain Killer	201	200mg	2019-12-31	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	11	Sofin	Anti Allergic	1000	1000mg	2020-12-01	1
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	12	Dolo	For headache	10	100mg	2020-10-07	2

Query results operations

Print Copy to clipboard Export Display chart Create view

phpMyAdmin

Server: 127.0.0.1 Database: teammedics Table: clinic

Showing rows 0 - 2 (3 total. Query took 0.0079 seconds)

SELECT * FROM `clinic`

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Options

	Clinic_Id	Clinic_Name	phone	Starting_Hours	Ending_Hours	Location	city	c_long	c_lat
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	4	Chughtal Clinic	+923428577868	23:20:00	23:20:00	H-12, Islamabad, Islamabad Capital Territory, Paki...	Islamabad	72.98575579999999	33.6427424
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	5	Chennai	06381635536	17:56:00	19:59:00		Chennai	13.0827	80.2707
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	6	Namw	06381635536	19:00:00	20:00:00		Chennai	0	0

☐ Check all | With selected: ☐ Edit ☐ Copy ☐ Delete ☐ Export

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

☐ Print ☐ Copy to clipboard ☐ Export ☐ Display chart ☐ Create view

☐ Bookmark this SQL query

Label: ☐ Let every user access this bookmark

teammedics

- New
- clinic
- hospital
- medicine
- news
- orders
- pharmacy
- registerdoctor
- registerpatient
- remedies

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OUR SERVICES

We Offer Extensive Medical Procedures To Outbound And Inbound Patients.

FIND A CLINIC

Lorem ipsum dolor sit amet, Sed ut perspiciatis unde omnis iste natus error sit voluptatem

FIND A DISEASE

Lorem ipsum dolor sit amet, Sed ut perspiciatis unde omnis iste natus error sit voluptatem

PHARMACY

Lorem ipsum dolor sit amet, Sed ut perspiciatis unde omnis iste natus error sit voluptatem

FIND A HOSPITAL

Lorem ipsum dolor sit amet, Sed ut perspiciatis unde omnis iste natus error sit voluptatem

	ORDER_ID	NAME	ADDRESS	PH_NO	GMAIL	DATE	PRIORITY
0	1	sukesh	Kamia Nagar,Delhi,India	8497997380	suk123@gmail.com	2020-01-11 02:45:00	5
1	2	kiran	Shiva Road,Delhi,India	8428128985	kir123@gmail.com	2020-01-11 02:47:00	4
8	9	pavan	Rk Singh Marg,Delhi,India	9566148832	pavan369@gmail.com	2020-01-11 06:03:00	4
9	10	karthik	Lal Kuan,Delhi,India	9966622333	karthik111@gmail.com	2020-01-11 06:36:00	4
19	20	sadik	Devli Road,Delhi,India	9652447816	sadiksaiibu@gmail.com	2020-01-11 07:07:00	1
3	4	hemanth	Chandan Market,Delhi,India	8674593218	hem5678@gmail.com	2020-01-11 12:02:00	2
7	8	bhagat	Palika Bazar,Delhi,India	9163248579	singh143@gmail.com	2020-01-11 15:12:00	5
12	13	harthik	New Arya Samaj Road,Delhi,India	9562317823	harthik143@gmail.com	2020-01-11 16:19:00	2
18	19	sohel	Wazirpur Industrial Area,Delhi,India	6001285439	sohelbhasa@gmail.com	2020-01-11 17:16:00	4
13	14	venky	Gurgaon,Delhi,India	9898986235	venky143@gmail.com	2020-01-11 19:20:00	1
17	18	surya	Devli Road,Delhi,India	8428128653	suryamr@gmail.com	2020-01-11 22:19:00	2
14	15	naveen	Chiranjiv Tower,Delhi,India	9933641287	naveenblock@gmail.com	2020-02-11 01:14:00	0

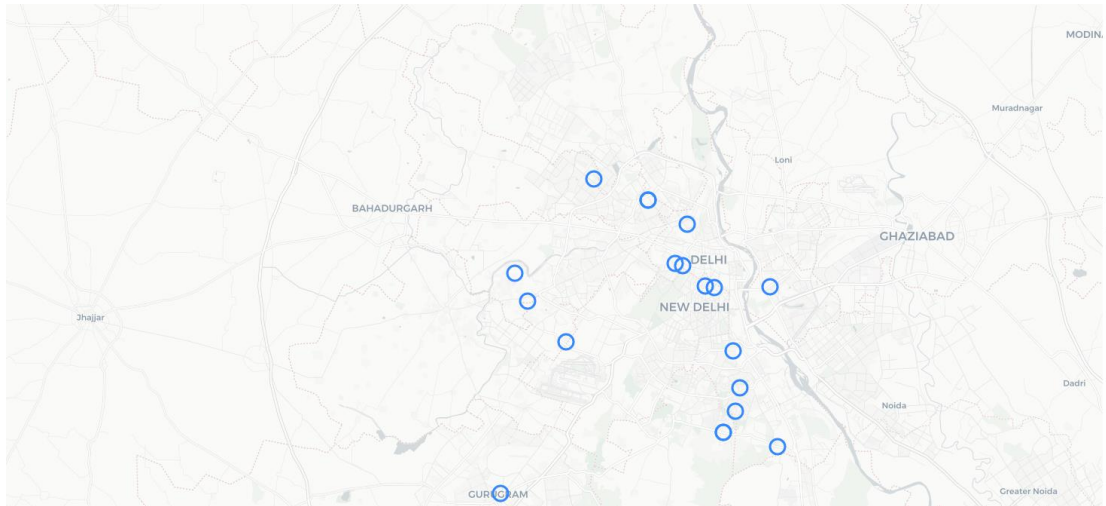
```
df.sort_values(by=['PRIORITY'],ascending=False)
```

	ORDER_ID	NAME	ADDRESS	PH_NO	GMAIL	DATE	PRIORITY
0	1	sukesh	Kamia Nagar,Delhi,India	8497997380	suk123@gmail.com	2020-01-11 02:45:00	5
6	7	yaseen	Pushpa Market,Delhi,India	9534698712	sheik124@gmail.com	2020-02-11 17:12:00	5
7	8	bhagat	Palika Bazar,Delhi,India	9163248579	singh143@gmail.com	2020-01-11 15:12:00	5
8	9	pavan	Rk Singh Marg,Delhi,India	9566148832	pavan369@gmail.com	2020-01-11 06:03:00	4
18	19	sohel	Wazirpur Industrial Area,Delhi,India	6001285439	sohelbhasa@gmail.com	2020-01-11 17:16:00	4
1	2	kiran	Shiva Road,Delhi,India	8428128985	kir123@gmail.com	2020-01-11 02:47:00	4
9	10	karthik	Lal Kuan,Delhi,India	9966622333	karthik111@gmail.com	2020-01-11 06:36:00	4
11	12	manideep	Wazirpur Industrial Area,Delhi,India	9490651238	mani@gmail.com	2020-02-11 16:18:00	3
10	11	manoj	Uttam nagar,Delhi,India	9458613278	manoj555@gmail.com	2020-02-11 14:15:00	3
2	3	vishwa	Faiz Road,Delhi,India	8496531278	vish123@gmail.com	2020-02-11 18:54:00	3

```
df.sort_values(by=['DATE','PRIORITY'])
```

	ORDER_ID	NAME	ADDRESS	PH_NO	GMAIL	DATE	PRIORITY
0	1	sukesh	Kamia Nagar,Delhi,India	8497997380	suk123@gmail.com	2020-01-11 02:45:00	5
1	2	kiran	Shiva Road,Delhi,India	8428128985	kir123@gmail.com	2020-01-11 02:47:00	4
8	9	pavan	Rk Singh Marg,Delhi,India	9566148832	pavan369@gmail.com	2020-01-11 06:03:00	4
9	10	karthik	Lal Kuan,Delhi,India	9966622333	karthik111@gmail.com	2020-01-11 06:36:00	4
19	20	sadik	Devli Road,Delhi,India	9652447816	sadiksaiibu@gmail.com	2020-01-11 07:07:00	1
3	4	hemanth	Chandan Market,Delhi,India	8674593218	hem5678@gmail.com	2020-01-11 12:02:00	2
7	8	bhagat	Palika Bazar,Delhi,India	9163248579	singh143@gmail.com	2020-01-11 15:12:00	5
12	13	harthik	New Arya Samaj Road,Delhi,India	9562317823	harthik143@gmail.com	2020-01-11 16:19:00	2
18	19	sohel	Wazirpur Industrial Area,Delhi,India	6001285439	sohelbhasa@gmail.com	2020-01-11 17:16:00	4
13	14	venky	Gurgaon,Delhi,India	9898986235	venky143@gmail.com	2020-01-11 19:20:00	1
17	18	surya	Devli Road,Delhi,India	8428128653	suryamr@gmail.com	2020-01-11 22:19:00	2

	ORDER_ID	NAME	ADDRESS	PH_NO	GMAIL	DATE	PRIORITY	location	point	latitude	longitude	altitude
0	1	sukesh	Kamia Nagar,Delhi,India	8497997380	suk123@gmail.com	2020-01-11 02:45:00	5	(Kamia Nagar, Civil Lines Tehsil, Central Delh...	(28.680344249999997, 77.20212920033055, 0.0)	28.680344	77.202129	0.0
1	2	kiran	Shiva Road,Delhi,India	8428128985	kir123@gmail.com	2020-01-11 02:47:00	4	(Shiva Enclave West, Patel Nagar Tehsil, West ...	(28.64097145, 77.04471671211414, 0.0)	28.640971	77.044717	0.0
2	3	vishwa	Faiz Road,Delhi,India	8496531278	vish123@gmail.com	2020-02-11 18:54:00	3	(Faiz Road, Karol Bagh, Karol Bagh Tehsil, Cen...	(28.6472665, 77.1982147, 0.0)	28.647267	77.198215	0.0
3	4	hemanth	Chandan Market,Delhi,India	8674593218	hem5678@gmail.com	2020-01-11 12:02:00	2	(Chandan Market, Greater Kailash II, Kalkaji T...	(28.53074695, 77.24596265669813, 0.0)	28.530747	77.245963	0.0
4	5	sriram	Lajpat Nagar,Delhi,India	9674581238	srir1528@gmail.com	2020-02-11 19:06:00	1	(Lajpat Nagar, Shiv Mandir Marg, Lajpat Nagar ...	(28.5792615, 77.2440325, 0.0)	28.579262	77.244033	0.0



Edges in the constructed MST

10 -- 17 == 0

16 -- 18 == 0

2 -- 11 == 0

6 -- 7 == 0

3 -- 13 == 2

3 -- 16 == 2

1 -- 9 == 2

2 -- 6 == 2

4 -- 13 == 3

0 -- 11 == 3

0 -- 10 == 4

3 -- 8 == 4

7 -- 15 == 4

9 -- 14 == 4

5 -- 10 == 5

4 -- 7 == 5

1 -- 5 == 10

12 -- 14 == 14

Minimum Distance to deliver 73.64771896615031

