**Proposed System**

The proposed application is web-based, developed on Wamp 2.2e using php and sql requires internet connection and will provide a platform for donors and seekers after they successfully register into the system. If a user wishes to donate a wastage of food, he/she can send a message in application. This message will be shown as notification in donations tab to other users. This message will be stored in backend in the database. Once a notification is sent, the orphanages who wish to claim the donations can reply to the donor and contact him/her. The user interface of this system will be simple and user-friendly, and the targeted system is web. At present, we are aiming to avoid the major wastage that usually happens in India and that is foodstuffs. Also the application will be beneficial if donors and seekers are located near each other. The use case diagram shown above describes 3 actors – Donor, Agent and Admin. The Donor performs operations like Registration and Login into the System. He can also put up items for donation and view all donation requests (items required by organizations). The Admin and Donor both can view the Agents’s location. The Admin can also monitor and update the database. The Admin and Agent both can view the Donor’s location. The Agent can also perform operations like requesting for items, viewing requested items and claiming donations.



This is the way our system will work.

**Algorithms**

**Floyd- Warshall algorithm**

The Floyd- Warshall algorithm is applied to . This algorithm was chosen due to the fact that we are using metric system and there the negative values of edges are not used. The algorithm (Floyd-Warshall) also computes straight the vertices distance, which is less time consuming than i.e. Dijkstra Algorithm (which computes distances always for each vertex)

**Heuristic Algorithm for Routing Optimization**

Heuristics algorithm is based on the model of undirected weighted graph. The constructive heuristics algorithm is applied in the developed system and uses nearest-neighbor (NN) approach. The algorithm that is used to solve TSP has several iterations, which are [9,10]:

1) Salesman is in initial point as the current vertex.

2) Search the edge that has the least weight between the current vertex and the unvisited vertex V.

3) V is set as the current vertex.

4) Mark V as visited vertex.

5) Repeat step 2.

6) If all vertices have been visited, stop the iteration and go back to initial point.

A simple web-based application was developed to test the heuristic algorithm for routing optimization. This testing application also utilizes Google Maps API. In this application, user can input several locations/addresses, and then Google Maps API will return the coordinate of those locations. This function can be seen in Fig 4.

