honestbee

About honestbee

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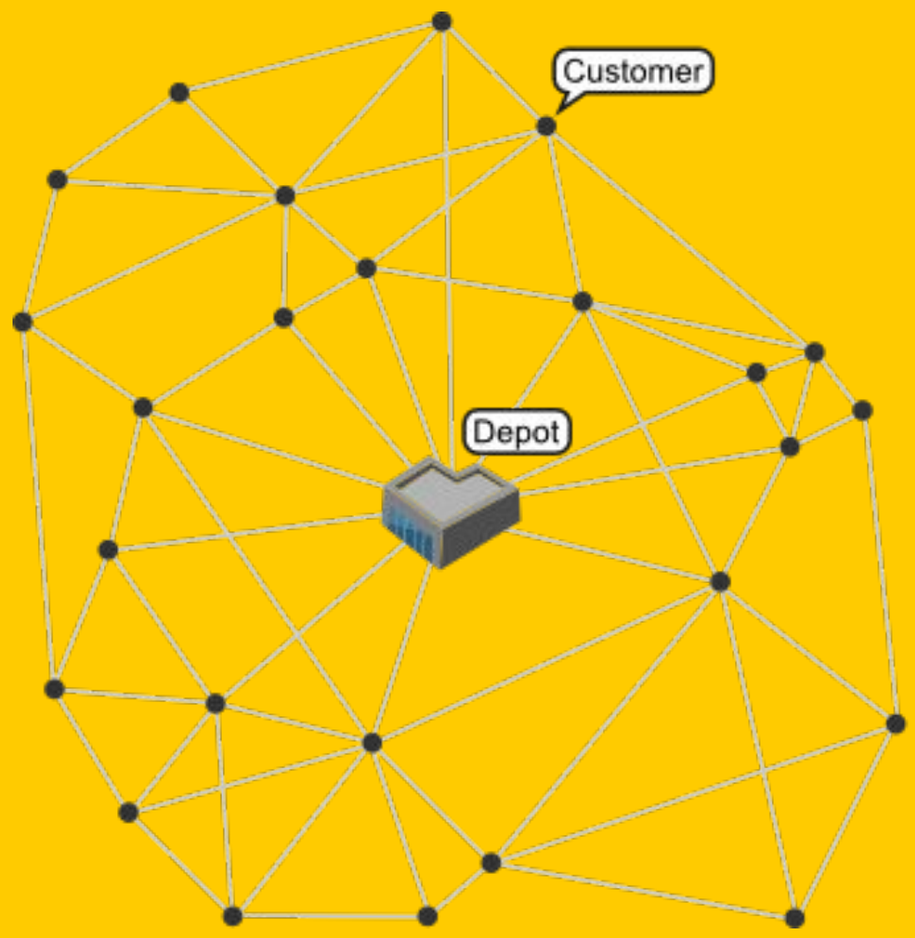
What is honestbee?

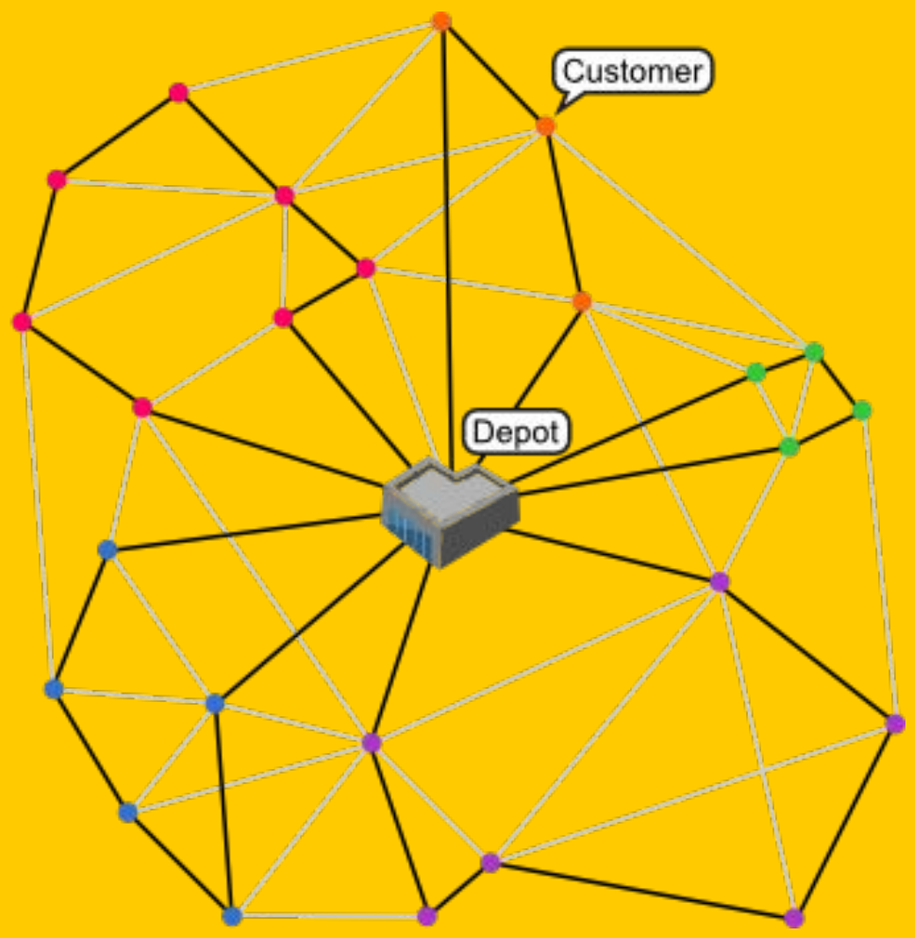
- Full service online platform for convenient services: grocery, laundry and etc
- Singapore - Hong Kong - Taiwan - Japan - Thailand - Indonesia - Philippines - Malaysia
- Offer varieties of products and services from many partners

Vehicle Routing Problem Introduction

Next hour delivery



VRP



General Rules

Solution Approach

General rules

- Team of 3-4 members.
- The teams will be tasked to develop a solver for variations of Vehicle Routing Problem.
- The team will be required to develop the REST service which takes in the inputs as - specified and required to return the most optimal solution to the problem.
- The REST service will be packaged as a Docker image and pushed to a Docker registry.
- The submission will be scored & updated in real time in our leaderboard dashboard

Solution Approach

General Rules

- There are 2 rounds:

1. Round 1

There are 2 questions & you need to finish it in 3 hours

2. Round 2

Top 3 teams from Round 1 will go to Round 2

There is 1 question for 2 hours

Solution Approach

LEADERBOARD - FIRSTROUND

1	ngoc	Sat Nov 26 2016 00:11:03 GMT+0700 (ICT)	**122474.63799999999**
2	ngoc	Sat Nov 26 2016 00:11:17 GMT+0700 (ICT)	**122474.63799999999**

Solution Approach

Challenge objectives

- Ability to build a web service during a short period of time to meet all the API requirements
- Ability to learn about the problem & research on various tools / libraries
- Ability to customize the library to solve a customized solution
- We don’t care how you do it, as long as the solution is generated

Solution Approach

Next hour delivery

Steps to develop a VRP solver:

1. Write the functions to check for the constraints of the problem
2. Generation of potential solutions: grouping of customers, filter those groupings which satisfy the constraints. Add them to a pool
3. Ways to generate new solutions from the current solution

Some heuristics approach we can take when we try to generate a solution:

1. Group customers which are nearer to each other. So probably having an calculation of the 3 nearest customers for any customer we need to deliver to would be useful

FirstRound

Vehicle Routing Problem Variations

CAPACITATED VEHICLE ROUTING PROBLEM

Problem Statement

- Vehicle has a certain capacity
- Deliveries for customers are at certain size
- Only one depot to deliver from

Application

- The simplest & most common VRP application

Vehicle Routing Problem Variations

MULTI-DEPOT CAPACITATED VEHICLE ROUTING PROBLEM

Problem Statement

- Vehicle has a certain capacity
- Deliveries for customers are at certain size
- There are multiple depots to deliver from (Select the depot which is nearer to the group of customers would be better)

Application

- Honestbee works with large supermarket chains where there are multiple stores across Singapore island

Vehicle Routing Problem Variations

GET READY??

- Request an account to Docker Saigon slack group: http://dockersaigon.herokuapp.com/

- Join the #honestbee-challenge channel for discussions / questions

FinalRound