

# Crabfood Technical Report

Tutorial group 4  
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## Group Member

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## Task & Requirement

For the data structure group assignment, our group get the Crabfood task, basically, it can be divided to these parts.

1<sup>st</sup>

To read the input file and get the information of location of restaurant / order of customers / time of preparation and delivery /...

2<sup>nd</sup>

To set up the map of the branches of restaurants.

3<sup>rd</sup>

To process the order of customers and distribute them to different branch of restaurants.

4<sup>th</sup>

To calculate the preparation and delivery time for each order.

## Solution of the Task

To solve the tasks on the list above, we developed a Java program using several different command and data structure.

We used bufferedreader to get the information from the input file, split the location input to get the location parameters (x , y) in 2D and then we set up the map by using an array of char.

As for the dishes, we used an arraylist to represent the restaurant and in each element of this arraylist, is another arraylist which represent the dishes and the preparation time.

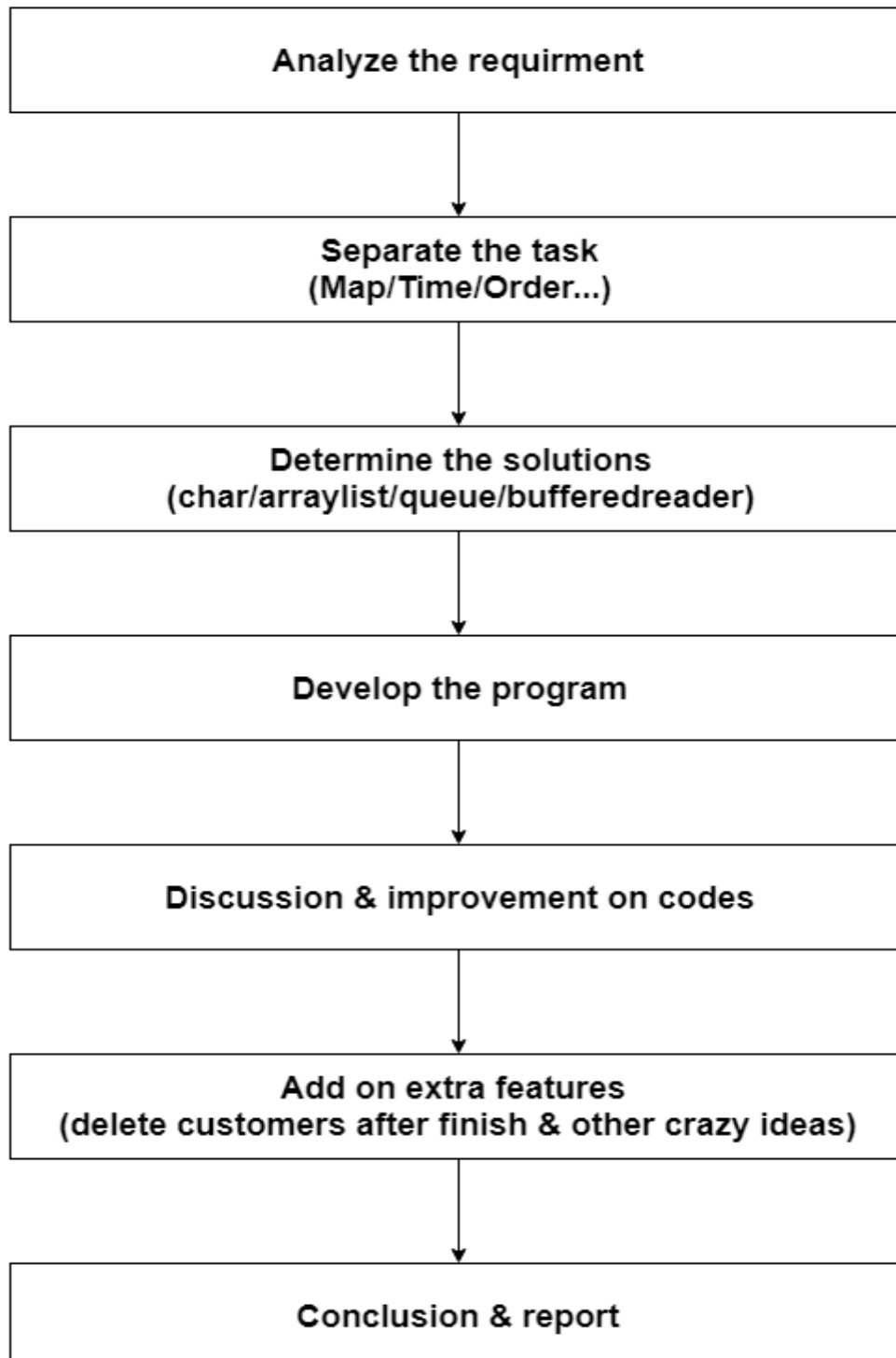
Moving on to customers, we still used arraylist to solve the problem. But there is a slight difference between this arraylist and the others, because every time we finished

with one customer, we delete the information about him, this means we don't need to go over on him again, and that makes our program more efficient.

We also made a program to find out the least busy restaurant for a certain order of dish, which means the customers can get their dishes faster. And this is not the only extra features, we developed some other crazy ideas by using queue and arraylist.

Finally we calculate the time by adding the preparation time and delivery time (calculated from the distance from the restaurant to (0 , 0) ).

## Flow-chart



# Output Sample

```
"C:\Program Files\Java\jdk-12\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA
2019.1\lib\idea_rt.jar=6436:C:\Program Files\JetBrains\IntelliJ IDEA 2019.1\bin" -Dfile.encoding=UTF-8
-classpath F:\IdeaProjects\CrabFood2\TestCrab\out\production\TestCrab testcrab.TestCrab
0 B 0 0 0 K 0 0 0 0
0 K 0 P B 0 0 0 0 0
C 0 P 0 0 0 S 0 0 0
S 0 0 C 0 0 0 0 0 0
B P 0 0 C 0 0 S 0 K
0 0 0 P 0 C 0 0 0 0
0 0 C 0 K 0 0 0 0 0
0 0 0 B 0 K 0 0 P 0
0 0 S 0 0 0 0 0 B
0 0 0 0 0 0 S 0 0
0: a new day has started!
0: Customer 1 wants to order [The Klogger, Fish Sandwich] with Extra cheese special requirement from
Burger Krusty
0: The nearest branch of Burger Krusty at (4, 0) takes the order.
WARNING : Traffic jam is happening!! Changing to the another branch..
0: Branch of Burger Krusty at (1, 4) takes the order.
13: Customer 2 wants to order [Crabby Patty, Crabby Meal, Sailors Surprise] with None special
requirement from Crusty Crab
13: The nearest branch of Crusty Crab at (3, 3) takes the order.
15: Customer 3 wants to order [Crabby Meal] with Extra veges special requirement from Crusty Crab
15: The nearest branch of Crusty Crab at (2, 0) takes the order.
WARNING : Traffic jam is happening!! Changing to the another branch..
15: Branch of Crusty Crab at (4, 4) takes the order.
15: Customer 4 wants to order [Green Tea Latte] with No Sugar special requirement from Starbucks
15: The nearest branch of Starbucks at (3, 0) takes the order.
WARNING : Traffic jam is happening!! Changing to the another branch..
15: Branch of Starbucks at (2, 6) takes the order.
18: Customer 5 wants to order [Colonel Burger, Wedges] with Extra ketchup special requirement from KFC
18: The nearest branch of KFC at (1, 1) takes the order.
WARNING : Traffic jam is happening!! Changing to the another branch..
18: Branch of KFC at (0, 5) takes the order.
20: Branch of Burger Krusty at (1, 4) finished the order and delivering food to customer 1
Deliveryhero PewDiePie will deliver your order 1
25: The food has been delivered to customer 1 by DeliveryHero PewDiePie
33: Branch of Crusty Crab at (3, 3) finished the order and delivering food to customer 2
Deliveryhero PewDiePie will deliver your order 2
35: Branch of Crusty Crab at (4, 4) finished the order and delivering food to customer 3
Deliveryhero Brad will deliver your order 3
35: Branch of Starbucks at (2, 6) finished the order and delivering food to customer 4
Sorry customer 4 your order is delayed due to limited deliveryboy.
38: Branch of KFC at (0, 5) finished the order and delivering food to customer 5
Sorry customer 5 your order is delayed due to limited deliveryboy.
39: The food has been delivered to customer 2 by DeliveryHero PewDiePie
The next delayed order of 4 is delivering..
43: The food has been delivered to customer 3 by DeliveryHero Brad
49: The food has been delivered to customer 4 by DeliveryHero PewDiePie
The next delayed order of 5 is delivering..
49: The food has been delivered to customer 5 by DeliveryHero PewDiePie

Process finished with exit code 0
```

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