***status:*** *completed*

Business Problem

***Business Owner:*** *Marsha Palmer*

**Abstract:** A lot of people waste their time waiting in bank queues. I want to create a mobile app where every customer sends a request one day ahead and the app will decide which customer goes to which branch at which time of the day. That will make the service instantaneous and no one will wait in the bank anymore.

Problem

* Customers waste a lot of time waiting in bank queues as there are different congestion levels at different bank branches at different times throughout the day.

Objective

* Designing an app that eliminates the waiting time of customers at the branches by doing the scheduling given the requests of the customer one day ahead.
* The app would produce for each customer the branch and the time slot they are assigned to to fulfill their request.

Input & Output

* **Input**
  + List of Branches
    - Branch
      * Location (x,y)
      * List of services provided
        + Service Id
        + Time needed in slots
      * Available Slots per day
      * Capacity per slot (number of employees)
  + List of Requests
    - Request
      * Customer Id
      * Service Id
  + Customer Info
    - Customer
      * Location (x,y)
      * Priority (not now)
* **Output**
  + List of matching pairs: (R,B,T) → Request R should be handled at branch B at time slot T

Features

* The criteria (upper bound) for assigning a customer to a specific branch
* Limitations: No slots available that day for the nearby branches.

Key Metrics

* Maximum Customer Satisfaction:
  + The maximum number of requests have been handled (under the given conditions)
  + The distance between the customer and the branch is minimized
  + Requests of customers with higher priorities are satisfied first.