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Specification of business processes

1. Business goals of the organization

“METRO” is the underground train that transports people. It operates only one subway line.
We would like to measure the total number of passengers riding on the metro at a given time and to know if we have enough capacity at this time to allow comfortable travel.
The main goal of introducing new monitoring systems to METRO is to decrease congestion during most busy hours (running more trains) and increase the number of users of monthly passes by 5%.

The most essential aspects of the METRO include monitoring the occupancy of the trains and selling tickets. There are three available types of tickets:

a) 40min timed

b) 20min timed

c) monthly ticket

To get on the station, one must pass through a ticket gate, which logs each ticket with a given number,
hour, date and type of ticket.
To get off at the station, one must pass through a gate, logging the same information.
Gates allow only one person to pass at a time.

2. Business processes

Occupancy monitor

a. A general description of the business process and a description of the performance metrics generated by this process, and possible current analytical problems.

   The process looks as follows:
   1. The passenger goes through a gate and scans a ticket
   2. Ticket information with the entry gate and entry time is submitted to the system
   3. Passenger uses the metro and then leaves the train
   4. Passenger leaves through a gate, scanning the ticket again
   5. Ticket information in the database is updated with the exit gate and exit time
   6. Using entry and exit times and gates, we can measure occupancy of metro line at certain points in time with high accuracy
   7. Then, we can figure out if metro has enough throughput for comfortable travel

b. Typical questions

   What is the occupancy of the train at midnight?

   Is the train overloaded during peak hours?

   How many times does the train ride empty per week?

   How many stops does one ride on average?

   What is the average time of the ride?

c. Data

   All data are kept in a database.
   After one, scans a ticket at entry gate, ticket information is submitted to the database.
   After, one scans the ticket at exit gate, relevant entry is updated with exit information.

   GOAL:

   Less than 70 people per train should be forced to stand on 90% of rides in one year's time.

Tickets sale

a. A general description of the business process and a description of the performance metrics generated by this process, and possible current analytical problems.

The process looks as follows:

1. Passenger selects ticket type
2. Passenger selects ticket activation date if it is a monthly ticket, if it is not, one selects number of tickets to buy.
3. One pays with change or credit card.

b. Typical questions

What percentage of people buy multiple tickets at once?

What percentage of people pay with credit card?

Which ticket is more popular, 20min or 40min?

What percentage of people buy multiple monthly tickets at once?

How many monthly tickets are sold at each day of the week?

c. Data

Information about bought tickets is submitted to the database and associated with the receipt number.

GOAL:

Increase monthly ticket sales by 10% in one year’s time.