Acceptance Criteria:

- As a **Minimum Viable Product** *(MVP)*, the system should be able to cover sections *Q-LESS Transport Card Definitions (see Section A)* and *Q-LESS Discount Definitions (see Section B)* sections in this document.
- Any additional sections (*see Section C and D*), beyond the MVP definition, you complete will be given merit
- The appendix is for reference only

Machine Problem:

With the ever-increasing problem of Metro Manila's transport system, The DOTC *(Department of Transportation and Communication)* is trying to maximize the use of Metro Manila Transit System *(MRT)*. One of the initiatives that the department is undertaking is to ensure that the commuter's queue system is as efficient as it can be with the use of modern technology. You were asked to create a computer system that would support a new version of their pre-paid travel cards or Stored Value Tickets.

The new computer system is named Q-LESS Transport *(Quick Line and Efficient Service System)* which aims to lessen the time and cost that a commuter will spend in using the public MRT transport system. The new system should support the existing fair matrix with additional rules that are outlined below.

Section A: Q-LESS Transport Card Definitions

- The new system should respect the existing cost matrix indicated in this document (*see Appendix A: MRT Fare Matrix*)
- Q-LESS Transport Card is valid up to 5 years after the last used date
- Q-LESS Transport Cards will have an initial load of P100
- Transport costs are based on the Q-LESS Transport Card Type:
    - **Regular**
        - regular rates applied
    - **Discounted**
        - discounts are based on the discount definitions
        - Requires registration *(see Section B: Q-LESS Discount Definitions)*

Section B: Q-LESS Discount Definitions

- Discounted Card Types should apply 20% discounts.
- For every additional use of the transport system using the Q-LESS Transport card, an additional 3% discount will be applied with a maximum of 4 discounts applied for the day. This applies to all card types.
- When the maximum number of discounts use has been reached, regular rates for the card type are applied.
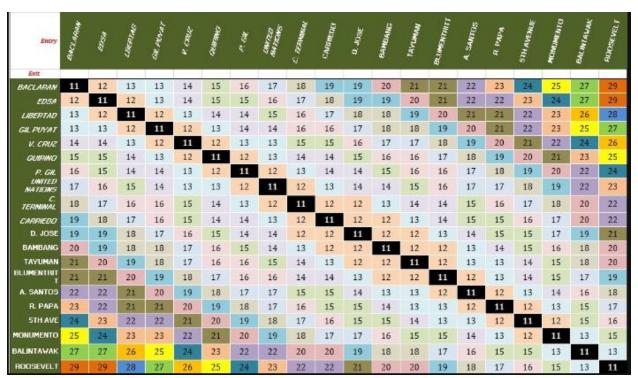
Section C: Q-LESS Transport Card Reloading

- Q-LESS Transport Cardholder should be able to load their card with a starting value of P100 up to P10,000.
- The Card Loading interface should provide the user with an interface that enables them to provide an amount to load and cash value fields. Their change should be computed and displayed based on the difference of the cash value and amount to load.

Section D: Discounted Card Registration

- The new computer system should provide a facility where commuters should be able to register their Q-LESS Transport Card to **Discounted Type.**
- All Q-LESS Transport Cards are considered **Regular Type** unless registered.
- The commuter would have to provide either a Senior Citizen Control Number or PWD ID Number together with the Q-LESS Transport Card Serial Number when registering a card.
    - Senior Citizen Control Number is a 10-character length string with "##-####-####" format
    - PWD ID Number is a 12-character length string with "####-####-####" format
- A Q-LESS Transport Card can only be registered once and non-reversible.
- A Q-LESS Transport Card can be registered within 6 months upon purchase.

Appendix: MRT Fare Matrix

Entry / Exit	BACLARAN	EDSA	LIBERTAD	GIL PUYAT	V. CRUZ	QUIRINO	P. GIL	UNITED NATIONS	C. TERMINAL	CARRIEDO	D. JOSE	BAMBANG	TAYUMAN	BLUMENTRITT	A. SANTOS	R. PAPA	5TH AVENUE	MONUMENTO	BALINTAWAK	ROOSEVELT
BACLARAN	11	12	13	13	14	15	16	17	18	19	19	20	21	21	22	23	24	25	27	29
EDSA	12	11	12	13	14	15	15	16	17	18	19	19	20	21	22	22	23	24	27	29
LIBERTAD	13	12	11	12	13	14	14	15	16	17	18	18	19	20	21	21	22	23	26	28
GIL PUYAT	13	13	12	11	12	13	14	14	16	16	17	18	18	19	20	21	22	23	25	27
V. CRUZ	14	14	13	12	11	12	13	13	15	15	16	17	17	18	19	20	21	22	24	26
QUIRINO	15	15	14	13	12	11	12	13	14	14	15	16	16	17	18	19	20	21	23	25
P. GIL	16	15	14	14	13	12	11	12	13	14	14	15	16	16	17	18	19	20	22	24
UNITED NATIONS	17	16	15	14	13	13	12	11	12	13	14	14	15	16	17	17	18	19	22	23
C. TERMINAL	18	17	16	16	15	14	13	12	11	12	12	13	14	14	15	16	17	18	20	22
CARRIEDO	19	18	17	16	15	14	14	13	12	11	12	12	13	14	15	15	16	17	20	22
D. JOSE	19	19	18	17	16	15	14	14	12	12	11	12	12	13	14	15	15	17	19	21
BAMBANG	20	19	18	18	17	16	15	14	13	12	12	11	12	12	13	14	15	16	18	20
TAYUMAN	21	20	19	18	17	16	16	15	14	13	12	12	11	12	13	13	14	15	18	20
BLUMENTRITT	21	21	20	19	18	17	16	16	14	14	13	12	12	11	12	13	14	15	17	19
A. SANTOS	22	22	21	20	19	18	17	17	15	15	14	13	13	12	11	12	13	14	16	18
R. PAPA	23	22	21	21	20	19	18	17	16	15	15	14	13	13	12	11	12	13	15	17
5TH AVE	24	23	22	22	21	20	19	18	17	16	15	15	14	13	13	12	11	12	15	16
MONUMENTO	25	24	23	23	22	21	20	19	18	17	17	16	15	15	14	13	12	11	13	15
BALINTAWAK	27	27	26	25	24	23	22	22	20	20	19	18	18	17	16	15	15	13	11	13
ROOSEVELT	29	29	28	27	26	25	24	23	22	22	21	20	20	19	18	17	16	15	13	11

MRT Line 1

Entry → / Exit ↓	RECTO	LEGARDA	PUREZA	V.MAPA	J.RUIZ	GILMORE	BETTY-GO	CUBAO	ANONAS	KATIPUNAN	SANTOLAN
RECTO	11	12	14	15	16	17	18	19	21	22	24
LEGARDA	12	11	13	14	15	16	17	18	20	21	23
PUREZA	14	13	11	13	14	15	16	17	19	20	22
V.MAPA	15	14	13	11	13	14	15	16	18	19	21
J.RUIZ	16	15	14	13	11	12	13	14	16	17	19
GILMORE	17	16	15	14	12	11	12	13	15	16	18
BETTY-GO	18	17	16	15	13	12	11	12	14	15	17
CUBAO	19	18	17	16	14	13	12	11	12	13	15
ANONAS	21	20	19	18	16	15	14	12	11	12	14
KATIPUNAN	22	21	20	19	17	16	15	13	12	11	13
SANTOLAN	24	23	22	21	19	18	17	15	14	13	11

MRT Line 2