Design Document - DD

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Chapter 1

INTRODUCTION

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1.3.1 Definitions

- Click Customer : The customer has the required technology to access the store. I.e a smartphone. They can use the customer terminal software.
- Brick Customer : The customer doesn't have the required technology to access the store, they have to hand out "tickets" on the spot.
- Store Manager : They have to manage the Store System, include the software and hardware.
- Ticket: The ticket is a document which contains three key information: QR Code, the estimated departure time, the queue number, and the Store Planned Roadmap. To the click customer, it's **E-ticket** but to the brick customer,it's **Paper Ticket**,and doesn't contain the estimated departure time, and just a General Store Map without the Planned Road.
- QR Code : When customer booked a visit, they will received a QR Code.

- QR Code Scanned Machine : A hardware, the Click Customer can use this machine scan their QR code.
- Tickets Hand-Out Machine : A hardware, the Brick Customer can use it retrieve their Ticket.
- Store Planned Roadmap: A store map that includes a finer way which is recommended form Store System.
- Digital Counterpart : A hardware, it with show the queue number.
- Store Back-End System : A software, as the back-end manages all stuffs.
- On-Time Store Data : A dataset that includes the store's on-time date.
  - The current queue
  - The customers in the store
  - The maximum number of people in the store.
- Long-Term Customers: The Click Customer who visited the store more than one time by the CLup mobile application.

1.3.2 Acronyms

- RASD - Requirement Analysis and Specification Document
- DD - Design Document
- CLup - Customers Line-up
- UI - User Interface
- IOS - iPhone OS
- PC - Personal Computer
- IaaS - Infrastructure as a Service
- CRM - Customer Relationship Management
- LAN - Local Area Network

1.3.3 Abbreviations

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1.4 Revision history

1.5 Document Structure

Chapter 2

ARCHITECTURAL DESIGN

In this chapter, we will describe the architectural design of our system.

We will use the Top-down design approach, design the very high-level structure first, and then gradually work down to detailed decisions about low-level constructs. Finally, arrive at detailed decisions. [4] Let us start with the High-level components and their interaction.

2.1 Overview: High-level components and their interaction

We chose **3-Tiered architecture** with the **Thin Client** strategy for our system. As shown in Fig.2.1.[1]

Tier-1 is the presentation layer. This layer will deploy the Click Client's mobile application, Store Manager's Management Web Page, and even Digital Counterpart and Ticket Hand-Out Machine's presentation.

Tier-2 is the logic application layer. This layer will deploy our Back-End System component.

Tier-3 is the data access layer. This layer includes our DBMS and the Data Base.

We have a web page as the Management page for the Store Manager but considered this page a static page, and the traffic will be minimal, so we did not use the 5-Tiered Architecture with the Web Server and the Script Engine Server to general the Dynamic Page.

Finally, our high-level architecture is shown in Fig.2.2. The Store Manager's PC and other hardware will connect with an Ethernet cable. The Click Customer's Mobile App communicates with our Back-End System with the Internet.

More detailed components will be introduced in the next section.

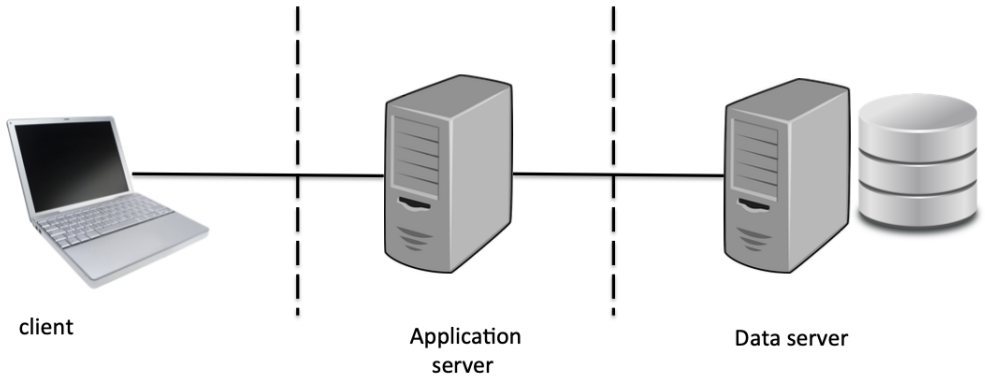

Figure 2.1: 3-Tiered architecture

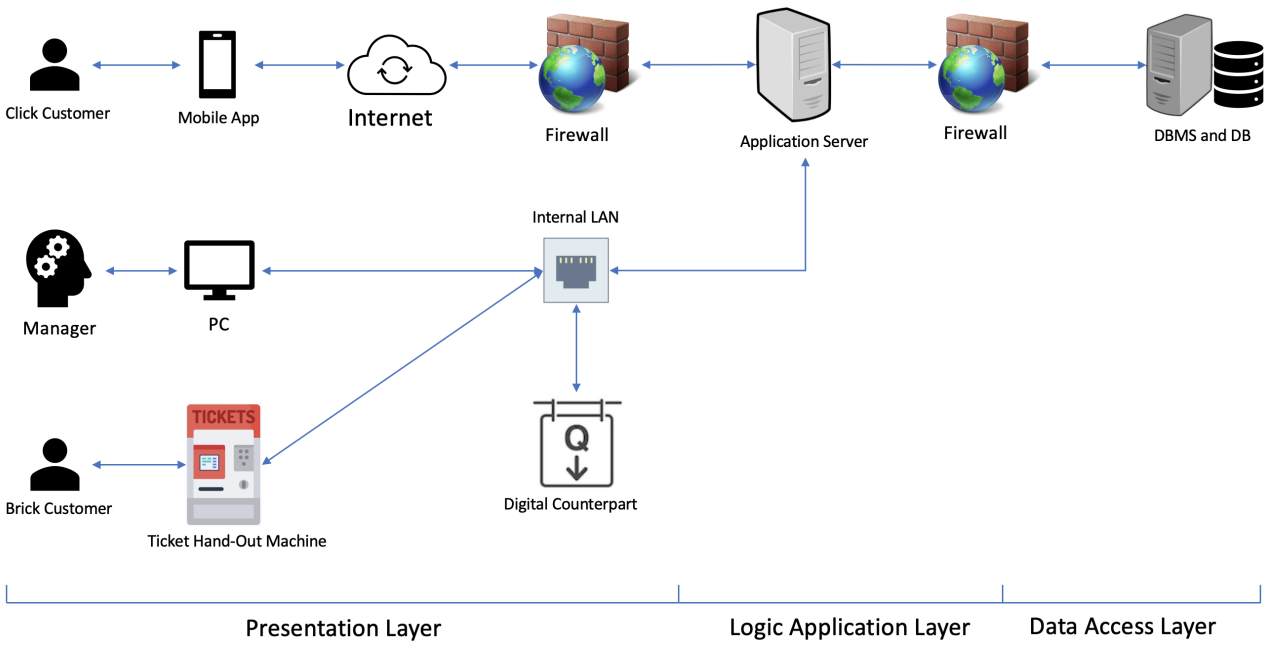

Figure 2.2: High level architecture

2.2 Component View

2.3 Deployment View

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2.5 Component Interfaces

2.6 Selected Architectural Styles and Patterns

2.7 Other Design Decisions

Chapter 3

USER INTERFACE DESIGN

Chapter 4

REQUIREMENTS TRACEABILITY

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IMPLEMENTATION, INTEGRATION AND TEST PLAN

Chapter 6

Effort Spent

- **Kong XiangYi**

Date	Task	Hours
2021/01/02	Group discussion and task assignment	2h

- **Zhang YueDong**

Date	Task	Hours
2021/01/01	Launch DD	2h
2021/01/02	Group discussion and task assignment	2h
2021/01/03	Did S.2.2.1 and S.2.2.2 Component Diagram	3h

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