

**ONLINE MUSICAL INSTRUMENT RENTAL SHOP
MANAGEMENT SYSTEM**

A PROJECT REPORT

submitted By

**ELTON D ARUJA
TVE21MCA2032**

to

the APJ Abdul Kalam Technological University
in partial fullfilment of the requirements for the award of the degree

of

Master of Computer Applications



**Department of Computer Applications
College of Engineering
Trivandrum-695016**

NOVEMBER 2022

Declaration

I undersigned hereby declare that the project report titled "**Online Musical Instrument Rental Shop Management System**" submitted for partial fulfillment of the requirements for the award of degree of Master of Computer Applications of the APJ Abdul Kalam Technological University, Kerala is a bonafide work done by me under supervision of Smt. Sabeena, Asst.Professor. This submission represents my ideas in my words and where ideas or words of others have been included. I have adequately and accurately cited and referenced the original sources. I also declare that I have adhered to ethics of academic honesty and integrity as directed in the ethics policy of the college and have not misrepresented or fabricated any data or idea or fact or source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the Institute and/or University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been obtained. This report has not been previously formed the basis for the award of any degree, diploma or similar title.

Place : Trivandrum

Elton D Aruja

Date : 23/11/2022

DEPARTMENT OF COMPUTER APPLICATIONS
COLLEGE OF ENGINEERING
TRIVANDRUM



CERTIFICATE

This is to certify that the report entitled **Online Musical Instrument Rental Shop Management System** submitted by **Elton D Aruja** to the APJ Abdul Kalam Technological University in partial fulfillment of the requirements for the award of the Degree of Master of Computer Applications is a bonafide record of the project work carried out by him under my guidance and supervision. This report in any form has not been submitted to any University or Institute for any purpose.

Internal Supervisor

External Supervisor

Head of the Dept

Acknowledgement

First and for most I thank **GOD** almighty and to my parents for the success of this project. I owe a sincere gratitude and heart full thanks to everyone who shared their precious time and knowledge for the successful completion of my project.

I am extremely thankful to **Dr. Suresh Babu V**, Principal, College of Engineering Trivandrum for providing me with the best facilities and atmosphere which was necessary for the successful completion of this project.

I am extremely grateful to **Smt. Deepa S S**, HOD, Dept of Computer Applications, for providing me with best facilities and atmosphere for the creative work guidance and encouragement.

I express our sincere thanks to **Smt. Sabeena**, Asst. Professor, Department of Computer Applications, College of Engineering Trivandrum for her valuable guidance, support and advice that aided in the successful completion of my project.

I profusely thank other Asst. Professors in the department and all other staffs of CET, for their guidance and inspirations throughout my course of study.

I owe my thanks to my friends and all others who have directly or indirectly helped me in the successful completion of this project. No words can express my humble gratitude to my beloved parents and relatives who have been guiding me in all walks of my journey.

Elton D Aruja

Abstract

Most of the today's basic services have shifted into a subscription based model. So is the case for owning a musical instrument. Musicians nowadays find it easier to rent an instrument just for the time it is needed than to spend lots of money to own one. Thus a rental system for musical instruments have become of much help. Although some rental systems for musical instruments exist, it is mostly or completely a manual system which involves keeping records in books. All data entry is performed by writing data into the book, paper documents. Even tasks such as payment, stock and staff management are done manually. This presents lots of challenges such as high maintenance, data loss, higher man power, etc. Online Musical Instrument Rental Shop Management System is the fittest solution to the conventional manual process of renting instruments. The project is an interactive platform where customers can scroll through the available stock and choose one's of their liking. The System implements online booking of instruments (for rent) and manages online payments. The Rental shop receives the online booking from customers and takes orders. Later customers will receive the instruments from the shop and return them by the return date issued to them. The system is implemented using html, php and sql.

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Chapter 1

Introduction

1.1 Project Overview

The Online Musical instrument rental shop management system aimed at solving the various problems in ordering the instruments. This project establishes a systematic and reliable distributing service along with a well maintained stock management. Using this system, one can order instruments through internet and have to receive it from the shop. The project is computerizing musical instrument rental shop management system that has a vast collection of items and deals with its various transactions. The customer can avoid delay by using the system. It is very smooth, efficient and fast system. The current states of the system can be understood by using the report form. It is very helpful for the administrator. For the staff, the dealings of the workers can handle very easily. The manual system had many difficulties and limitations. Through the process of computerization, the manual system overcomes the difficulties and limitations.

1.2 Objectives

The major objectives of the system are

- Prepare a database of all the stocks in the rental shop : An exhaustive database organized based on various criteria category, brand and variety of the musical instrument
- Facilitate order management : Once the order is placed the staff or admin can issue the instrument, receive an advanced payment. On Returning of the instruments the remaining amount is collected.

Chapter 2

System Analysis

2.1 Introduction

System analysis is the most critical process of information development. In system analysis, the problem is identified, alternative solutions are evaluated and the most feasible solution is recommended. An initial investigation is performed to identify the current problems and solutions for the smooth functioning of the organization. Each module thoroughly studies and all the recommended for the project are gathered. The problem is split into module and is viewed at various angles .this lead to the evolution of project.

2.2 Existing System

The existing system used to manage the Rental Shop is a manual system. In this system all the activities are performed manually. All data entry is performed by writing data into the book, paper documents. Thus there stands a chance of human errors occurring and calculations going wrong. Retrieving the data is a tedious task where one has to search entire records and books of data page-by-page.

Therefore the existing system is neither convenient nor efficient.

2.2.1 Drawbacks of Existing System

- Time consuming and improper planning and scheduling.
- High storage space.

- Less interactive.
- Requires more man power.
- High Maintenance.

2.3 Proposed System

The proposed system is interactive, highly user friendly and designed exclusively for the Rental Shop. The system covers almost all the functional areas of the shop. The database of the system stores information regarding staff, item, payment, sales and billing details etc. All the operations and activities related to The Online Musical Instruments Rental Shop Management System can be carried out efficiently. The system manages a well-organized database for storing the resources that they are providing by the Rental Shop. This help us to eliminate the entering of invalid data. Most problems of manual system can be solved by this system. The computerization of the system allows the easy maintenance of the details. Large amount of data can be stored easily. In addition, updating and other changes can be done easily. The information can be retrieved with high speed and accuracy. The use of GUI oriented software makes the system user friendly. The project proposes to generate reports on customers, staff, stock, and order details for further analysis of data.

2.3.1 Advantages of Proposed System

- High processing speed.
- User friendly.
- Better analysis of data.
- Database backup capabilities.
- Minimal errors.
- Reduced workload.
- Easy maintenance.

2.4 Feasibility Study

A preliminary investigation examines project feasibility. Feasibility study is a small scale system analysis. It's both necessary and evaluate the feasibility of a project at the earliest possible time.

2.4.1 Operational Feasibility

The purpose of the operational feasibility study is to determine whether the new system will be used if it is developed and installed.

The system is user friendly and better than the existing system. Implementation of this system makes it easy for the users of any kind to operate with. It provides a simple way to provide personal details and to search for data. It is a better and efficient solution for the issues in the existing system. So it can be considered as operationally feasible.

2.4.2 Technical Feasibility

The technical feasibility study is a study of function, performances and constraints and improves the ability to create an acceptable system.

Technical feasibility is the study of proposed system covering the hardware as well as the software requirements. The scope was whether the work for the project is done with the current equipment and the existing software technology has to be examined in the feasibility study. The outcome was found to be positive.

2.4.3 Economic Feasibility

Here an evaluation of development cost is weighted against the ultimate income or benefit derived from the developed system. The cost for the development of the project has been evaluated and we want to check that the cost does not exceed beneficial cost of the system. The economic and financial analysis is used for evaluating the effectiveness of the candidate system.

This project has also undergone economic feasibility study and found that it is feasible. So the cost for development does not exceed its beneficial cost. This brought to as the conclusion that the system is economically feasible in the context.

Chapter 3

System Environment

3.1 Hardware Requirements

The web server can be implemented in a rental space. However the optimum requirements for a separate server machine to install and run the portal is given below.

- **Processor :** Any x86/x64 based microprocessor
- **Hard disk drive :** Minimum of 80GB
- **Web Server :** Apache
- **Memory :** 512MB or Greater

3.1.2 Client Requirements

Any PC with internet connectivity will serve the client side operations.

3.2 Software Requirements

3.2.1 Server Requirements

- **Operation System :** Any Operating System microprocessor
- **Database :** MySQL

- **Web server :** Phpmyadmin
- **Browser :** Any Web Browser
- **Server side scripting language :** PHP

3.2.2 Client Requirements

Any PC with internet connectivity will serve the client side operations.

3.3 Development Tools

3.3.1 Front End

HTML

Hypertext markup language (HTML) is a Hypertext markup language, the standard markup language for documents designed to displayed and viewed on the online during a browser also helps to create the structure of the web page. because it is a markup language, it consists of many tags. There are tags to display text, tables, ordered lists and unordered lists, etc. There are two main sections on the HTML page: head and body section. The data that describes the page also termed as metadata is inside the head section while the body section includes all the tags that are necessary to represent the visible content of the web page HTML is a platform-independent language so that can be made in use in any platform like Windows, Linux, Macintosh, etc.

There are various HTML versions. The newest version is HTML 5. it's more advanced features like Geo-location, native audio, and video support, Canvas, web socket, etc. Usually, HTML is a simple language to find out and use. A programmer can create an HTML file employing a simple text editor and execute it employing a browser.

Cascading Style Sheets (CSS)

CSS is a style sheet language used for describing the look and formatting of a document written in a markup language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is a cornerstone specification of the web and almost all web pages use CSS style sheets to describe their presentation.

CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple pages to share formatting, and reduce complexity and repetition in the structural content (such as by allowing for table less web design). CSS can also allow the same markup page to be presented in different styles for different rendering methods, such as on-screen, in print, by voice (when read out by a speech-based or screen reader) and on Braille-based, tactile devices. It can also be used to allow the web page to display differently depending on the screen size or device on which it is being viewed. While the author of a document typically links that document to a CSS file, readers can use a different style sheet, perhaps one on their own computer, to override the one of the author has specified. However if the author or the reader did not link the document to a specific style sheet the default style of the browser will be applied. CSS specifies a priority scheme to determine which style rules apply if more than one rule matches against a particular element.

In this so-called cascade, priorities or weights are calculated and assigned to rules, so that the results are predictable

JAVA SCRIPT (JS)

JavaScript (JS) is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It is also being Used in server-side Programming, game development and the creation of desktop and mobile applications. JavaScript is a prototype-based scripting language with dynamic typing and has first class functions. Its syntax was influenced by C.

JavaScript copies many names and naming conventions from Java, but the two languages are otherwise unrelated and have very different semantics. The key design principles within JavaScript are taken from the self and scheme programming languages. It is a multi -paradigm language, supporting object-oriented, imperative, and functional programming styles. The application of JavaScript to use outside of web pages—for example, in PDF documents, site-specific browsers, and desktop widgets—is also significant. Newer and faster JavaScript VMs and platforms built upon them (notably Node.js) have also increased the popularity of JavaScript for server-side web applications. On the client side, JavaScript was traditionally implemented as

an interpreted language but just-in-time compilation is now performed by recent (post-2018) browsers.

3.3.2 Back End

PHP

PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP is now installed on more than 244 million websites and 2.1 million web servers. Originally created by Rasmus Lerdorf in 1995, the reference implementation of PHP is now produced by The PHP Group. While PHP originally stood for Personal Home Page, it now stands for PHP: Hypertext Pre-processor, a recursive acronym. PHP code is interpreted by a web server with a PHP processor module, which generates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data. It has also evolved to include a command-line interface capability and can be used in standalone graphical applications. PHP is free software released under the PHP License. PHP can be deployed on most web servers and also as a standalone shell on almost every operating system and platform, free of charge.

PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages. PHP is a widely-used, free, and efficient alternative to competitors such as Microsoft's ASP. PHP is a script language and interpreter that is freely available and used primarily on Linux Web servers. PHP is an alternative to Microsoft's Active Server Page (ASP) technology. As with ASP, the PHP script is embedded within a Web page along with its HTML. Before the page is sent to a user that has requested it, the Web server calls PHP to interpret and perform the operations called for in the PHP script.

An HTML page that includes a PHP script is typically given a file name suffix of ".php" ".php3," or ".phtml". Like ASP, PHP can be thought of as "dynamic HTML pages," since content will vary based on the results of interpreting the script. PHP is free and offered under an open source license.

Advantages of PHP

- **Open source :** It is developed and maintained by a large group of PHP developers, this will help in creating a support community, abundant extension library.

- **Speed** : It is relatively fast since it uses much system resource.
- **Easy to use** : It uses C-like syntax, so for those who are familiar with C, it's very easy for them to pick up and it is very easy to create website scripts.
- **Can be run on many platforms** : including Windows, Linux and Mac, it's easy for users to find hosting service providers.

MySQL

Relational database systems are the most important database systems used in the software industry today. One of the most outstanding systems is MySQL. MySQL is a database management system developed and marketed by Microsoft. The most important aspects of MySQL are,

- MySQL is easy to use.
- MySQL scales from a mobile laptop to symmetric multiprocessor system.
- MySQL provides data warehousing features that until now have only been available in Oracle and other more expensive DBMS.

MySQL is relatively easy to manage through the use of graphical computing environment for almost every task of the system and database administration. MySQL uses services of Linux or Windows to offer new or extended database capabilities, such as sending and receiving messages and managing login security. The MySQL administrator's primary tool for interacting with the system is Enterprise Manager. The Enterprise Manager has two main purposes: Administration of the database server and Management of database objects.

MySQL Query Analyzer provides a graphical presentation of the execution plan of a query and an automatic component that suggests which index should be used for a selected query. This interactive component of MySQL performs the task like:

- Generating and executing Transact-SQL statements.
- Storing the generated Transact-SQL statement in a file.
- Analyzing execution plans for generated queries.
- Graphically illustrating the execution plan for a selected query.

MySQL supports stored procedures and system procedures. Stored procedures can be used for the following purposes: to control access authorization, to create an audit trial of activities in database tables, to separate. Data definition and data manipulation statements concerning a database and all corresponding applications. The database object view can be used for:

- Restricting the use of particular columns and rows of the tables—that is to control access to a particular part of one or more tables.
- To hide the details of complicated queries, to restrict inserted and updated values to certain ranges. Indices are used to access data more efficiently. The Query Optimizer is the part of MySQL that decides how to perform a query in a better way. It generates several query Execution plans for the given query and selects the plan with the lowest cost.
- Declaration integrity constraints define using CREATE and ALTER TABLE statements.
- Procedural integrity constraints handled by triggers.

Apache Server

Wamp Server 7.0 is a collection of web development tools and software's. It provides an environment for developing web pages and applications. It contains Apache Web Server, MySQL Database Management System and PHP Programming Language. So now you can develop your applications locally on your home PC and once you have developed your applications you can upload it to your web host. Wamp Server 7.0 also provides some nice little tools for easy management of your databases; phpmyadmin and SQL Lite Manager are already installed. Interface of Wamp Server 2.0 is neat and clean. Most of the settings of this software can be accessed using a menu. You can directly access these settings right from the taskbar. It is available in around 20+ languages.

You can also update it automatically using the menu from the taskbar. Apache and MySQL are the most popular software used in web development and if you use PHP as your language for developing web application then this software is a must.

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- Graphically illustrating the execution plan for a selected query.

Chapter 4

System Design

4.1 Introduction

System design is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development. Design is the first step in the development phase of any system. It may be defined as a new process of applying various techniques and principles for the purpose of defining device, a process or a system in sufficient detail to permit its physical realization. The design steps are:

System Design

System Design is the most creative and challenging phase in the system life cycle. Design is the first step into the development phase for any engineered product or system. Design is a creative process. A good design is the key to effective system. System design is a solution how to approach the creation of a new system. System design transforms a logic representation of what is required to do into the physical specification. The specification is converted into physical reality during development.

Input Design

The input design is the process of converting the user-oriented inputs in to the computer based format. The data is fed into the system using simple interactive forms. The forms have been supplied with message so that user can enter data without facing any difficulty. The data is validated wherever it requires in the project. This ensures that only the correct data have been

incorporated into the system. Easy data input and selection features are adopted. The input design requirement such as friendliness, consistent format and interactive dialogue for giving the right message and help for the user at right time are also considered for the development of this project.

Output Design

Efficient and intelligent output design improves the system's relationship with the user and helps in decision making. The objective of the output design is to convey the information of all the past activities, current status and to emphasize important events. The output generally refers to the results and information that is generated from the system. Outputs from computers are required primarily to communicate the result of processing to the user. They are also used to provide a permanent copy of these results for later consideration.

4.2 Process Design

4.2.1 Modules and descriptions

Staff Management

This module deals with the managing the staffs working in the Rental Shop. Staff Management module also deals with adding new staff to the system, updating the details of the existing staff, searching for a particular staff and maintaining the status of the staff being registered to the system. The personal details of the staff are also being added to the system.

Customer Management

This module contains the details about the customer in the Rental Shop. It also contains the application for the registration of new customer, editing customer details and deleting of customer details.

Product Management

This module deals with the category, variety, brand of the item. In this module we can perform the following task like add, edit and delete.

Order Management

Customers can choose to order their instruments using this module. We add, edit or search the order details. In this module we can perform the following task such as add order, update existing order records and also search the order details.

Payment Management

This module deals with payment of a fixed price for instruments and also deals with the acceptance of electronic payment for online transaction. We can add payment, edit payment and search payment.

4.3 Data Flow Diagram

A data flow diagram shortly termed as DFD has the purpose of clarifying system requirements and identifying major transformations that will become programs in system design. So it is a design phase that functionally decomposes the requirements specifications down to the lowest level of detail. The DFD is also known as Data Flow Graph or Bubble Chart. It is the starting point of the design phase that functionally decomposes the requirements specifications down to the level of details.

The merit of the DFD is that it can provide an overview of the data to be processed by the system, the data to be transformed, the files to be used and the flow of data along the system. It has illustrating the essential component of a process and the way of interaction

4.3.1 Level 0 DFD

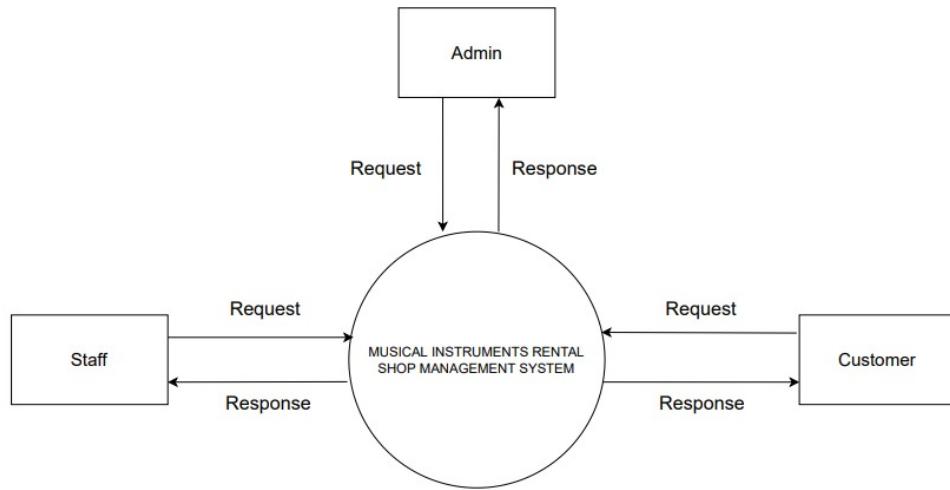
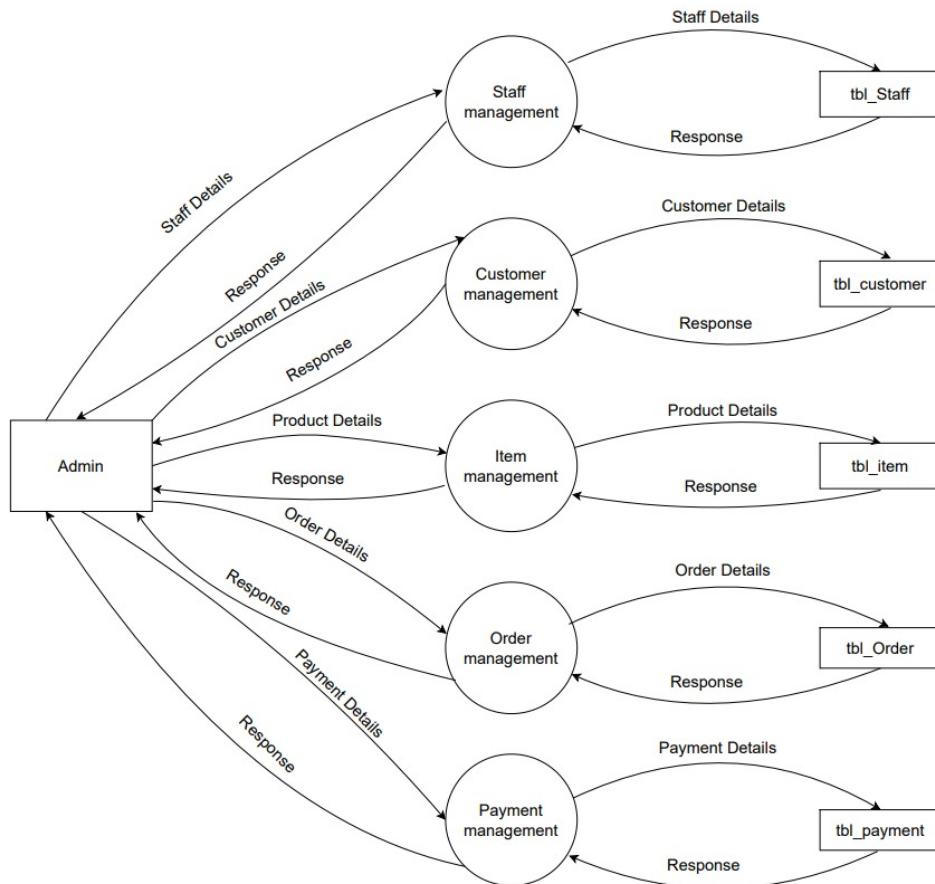


Figure 4.1: Level 0 DFD

4.3.2 Level 1 DFD



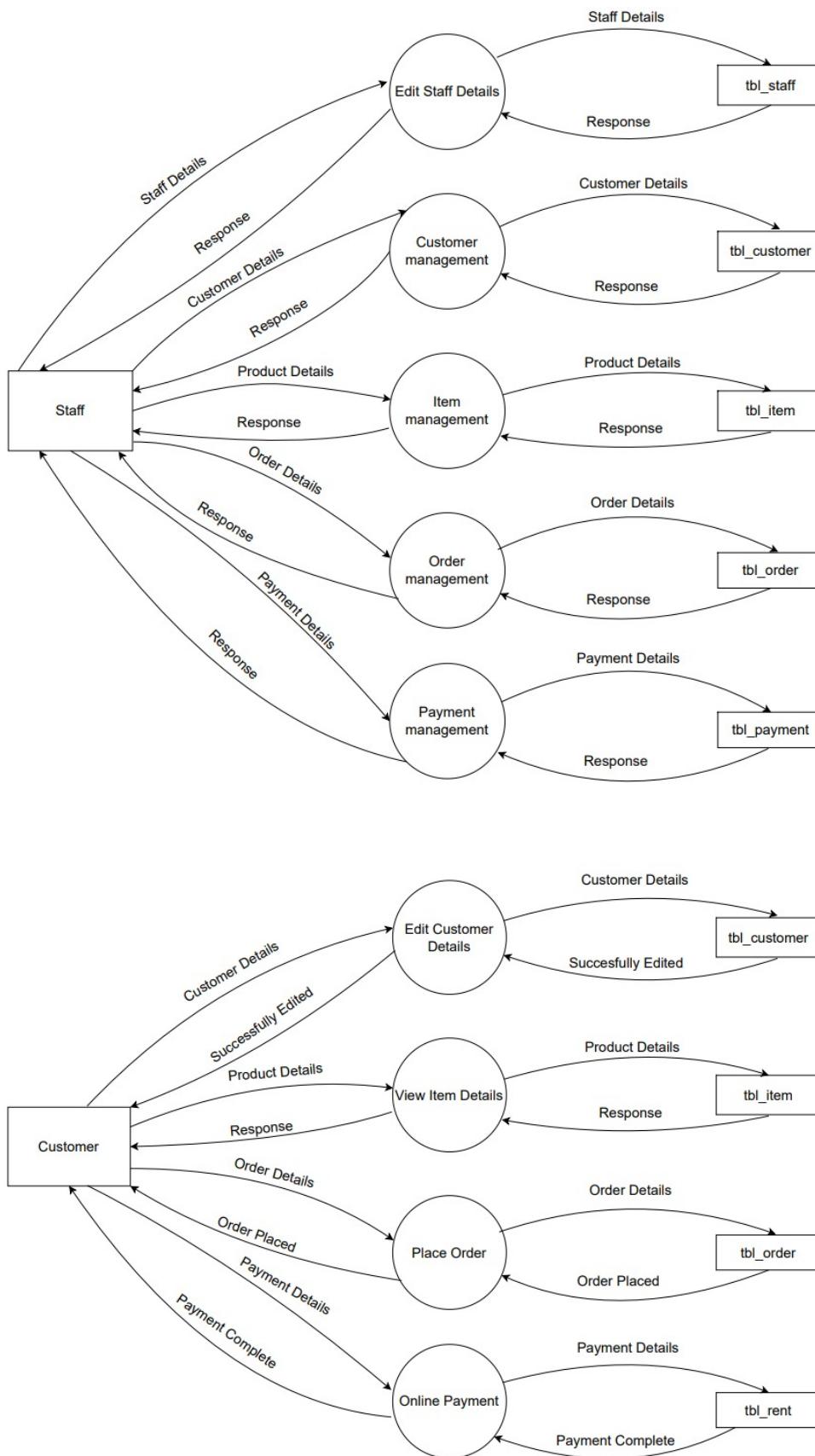


Figure 4.2: Level 1 DFD

4.3.3 Level 2 DFD

Staff Management

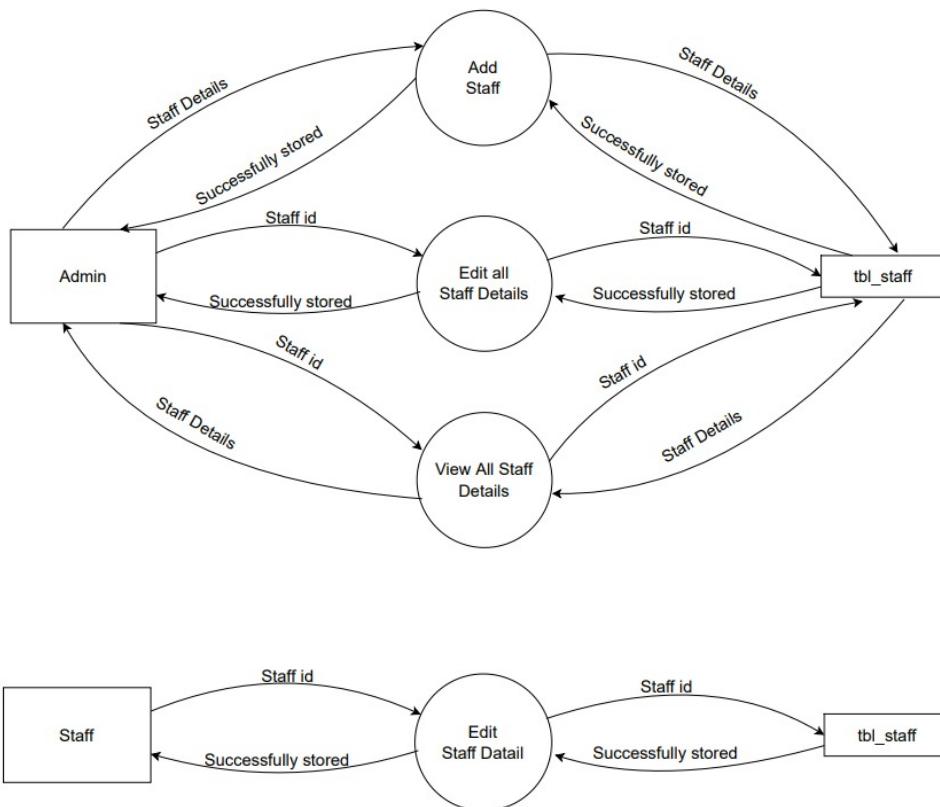
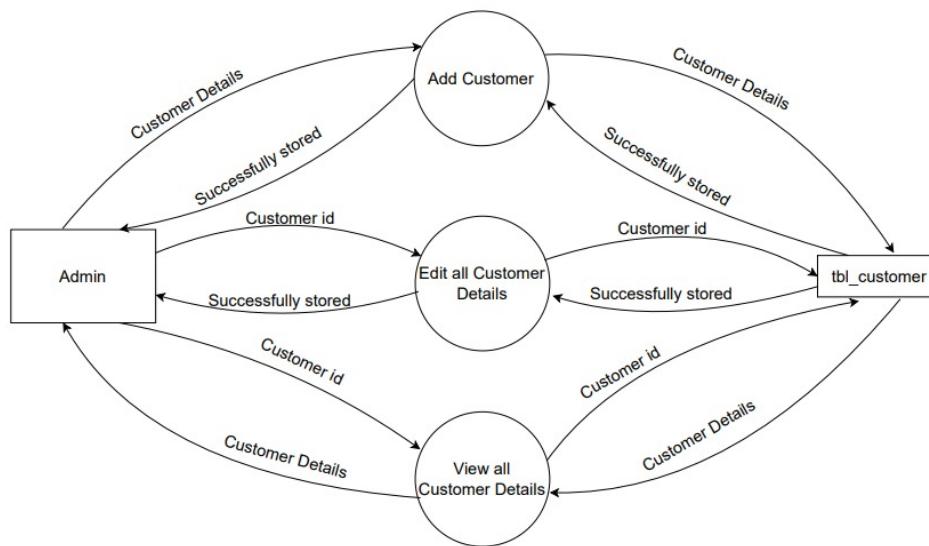


Figure 4.3: Level 2 DFD showing Staff Management

Customer Management



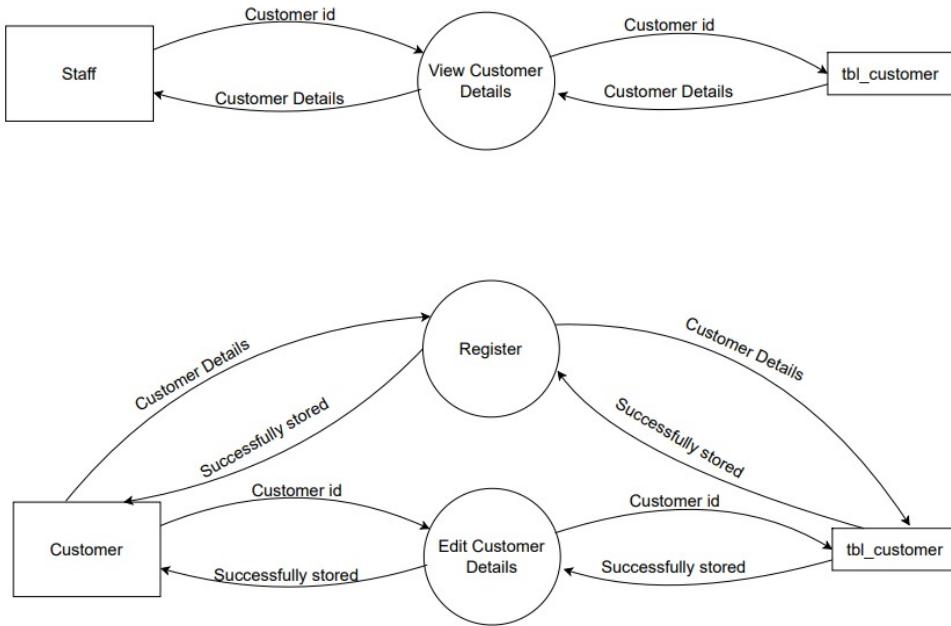
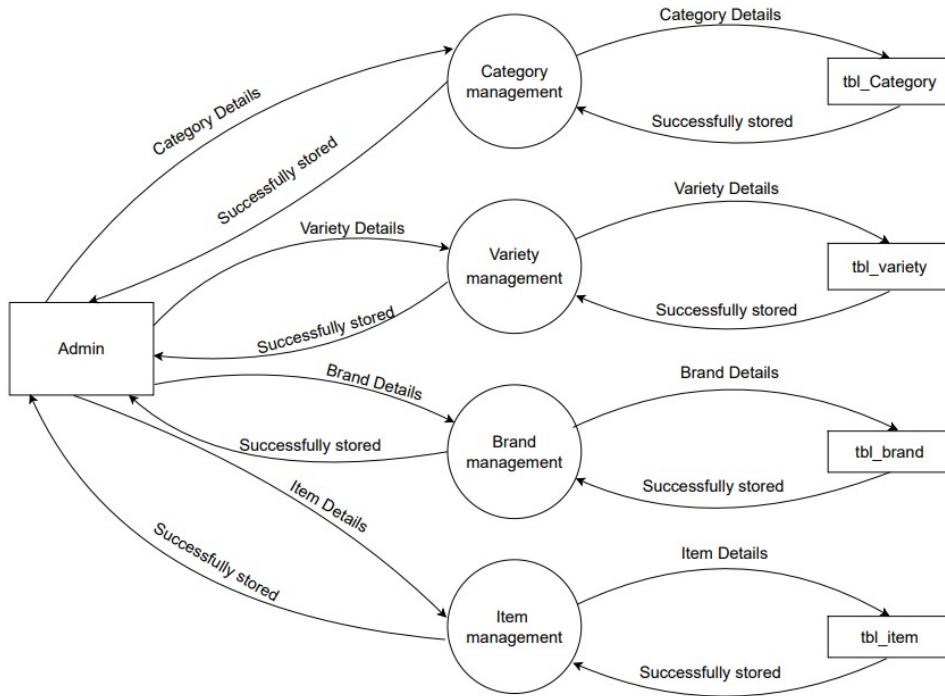


Figure 4.4: Level 2 DFD showing Customer Management

Item Management



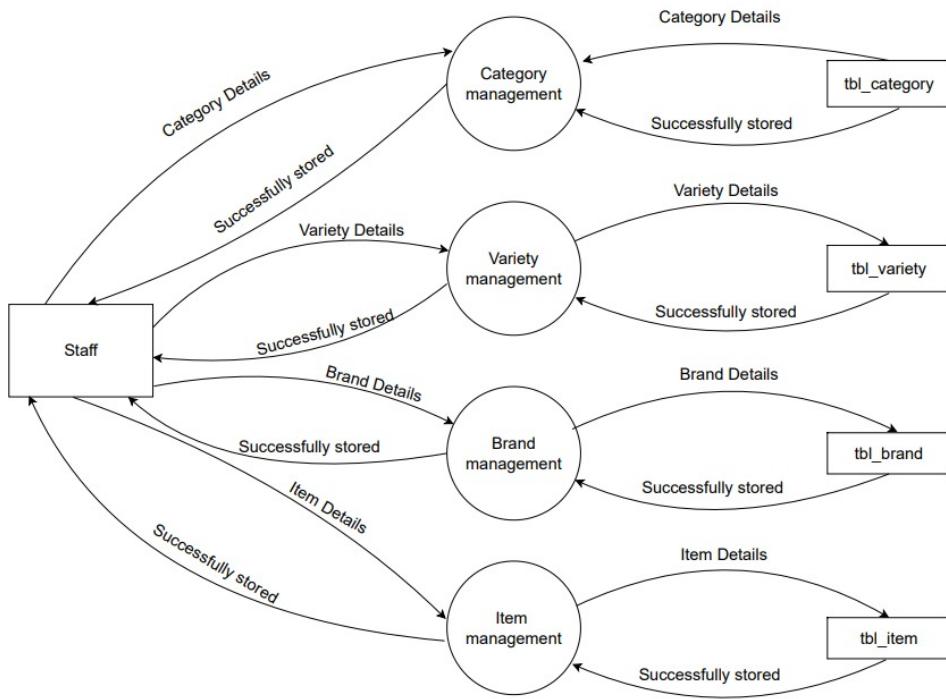
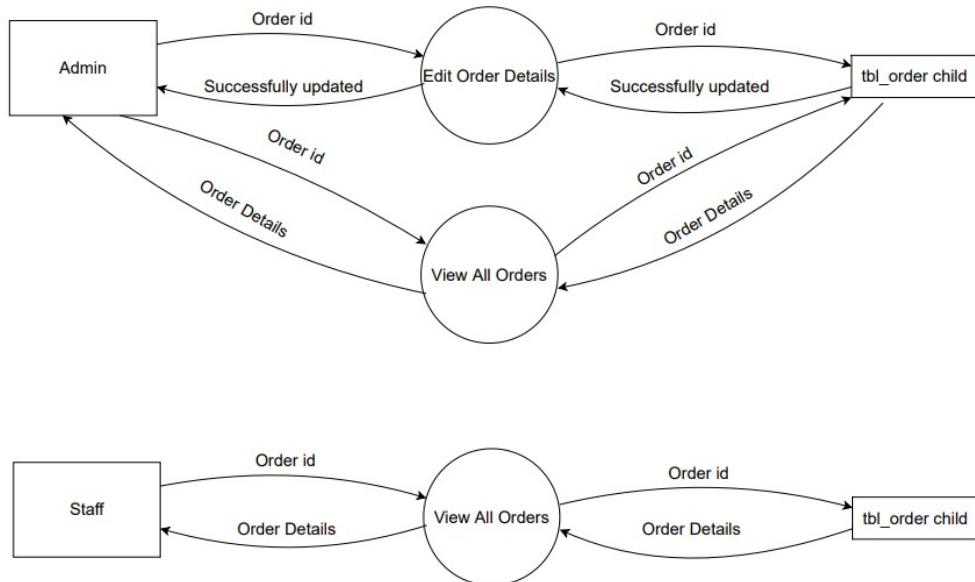


Figure 4.5: Level 2 DFD showing Item Management

Order Management



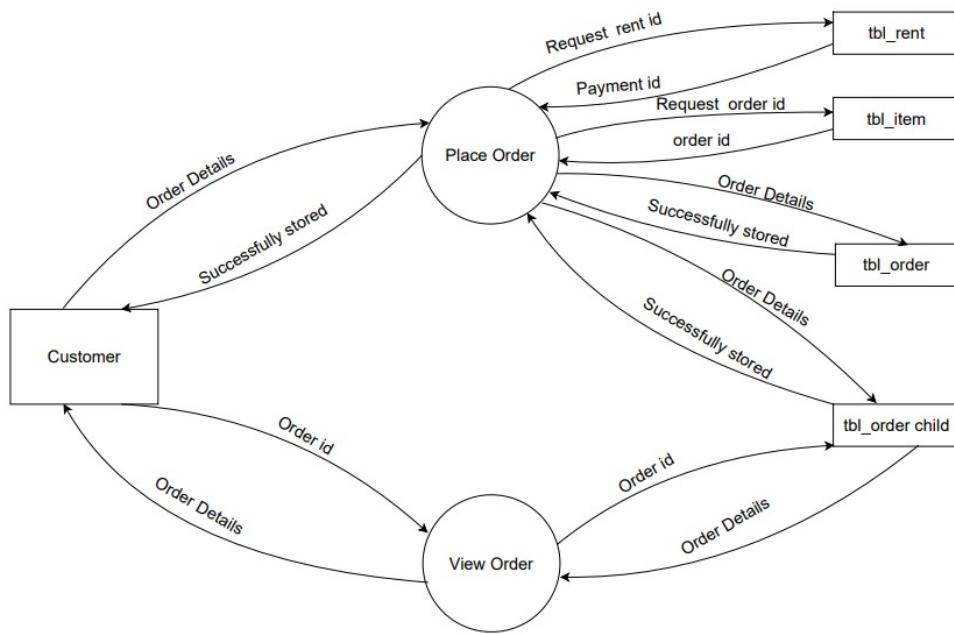
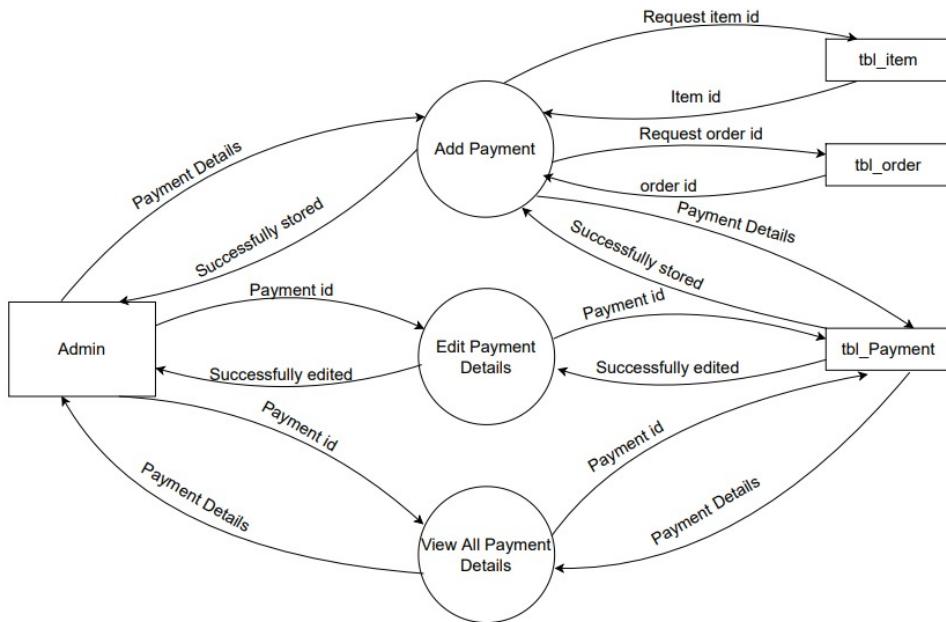


Figure 4.6: Level 2 DFD showing Order Management

Payment Management



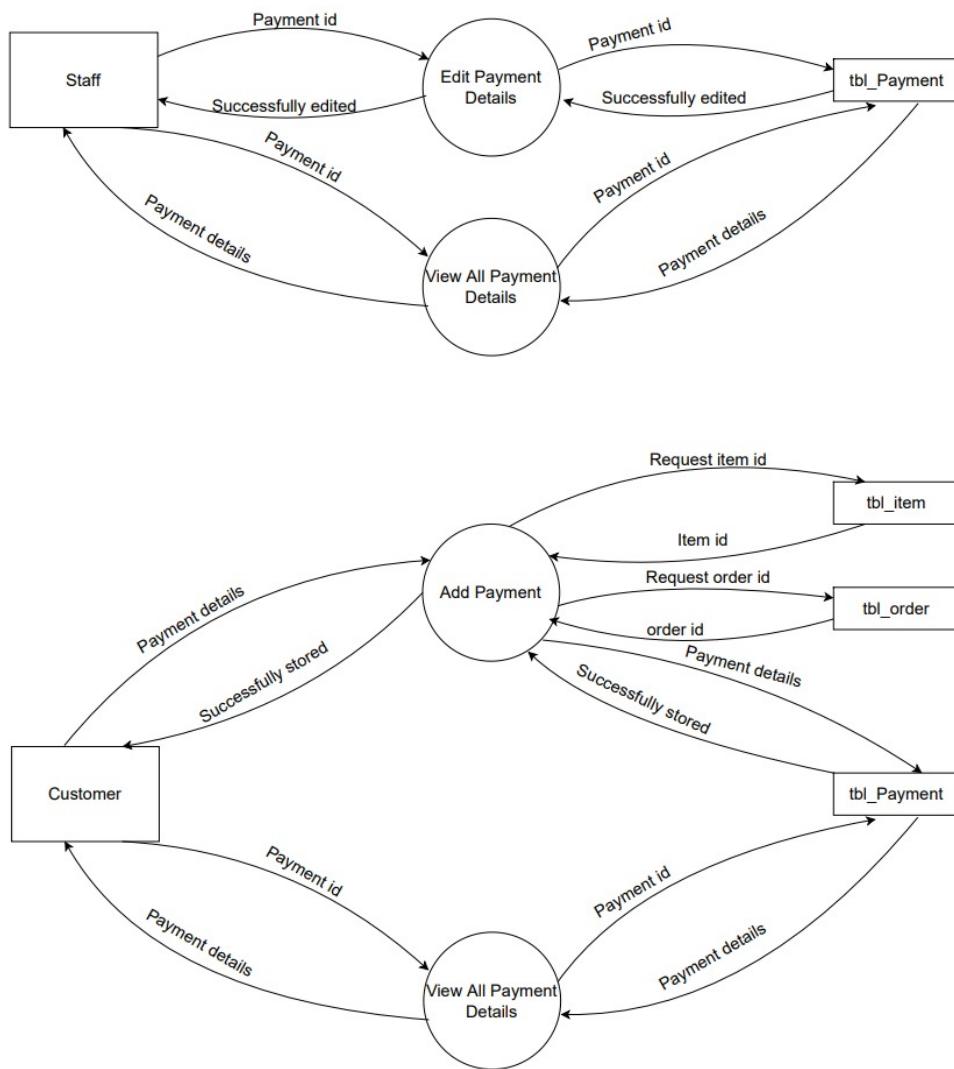


Figure 4.7: Level 2 DFD showing Payment Management

4.3.4 Level 3 DFD

Category Management

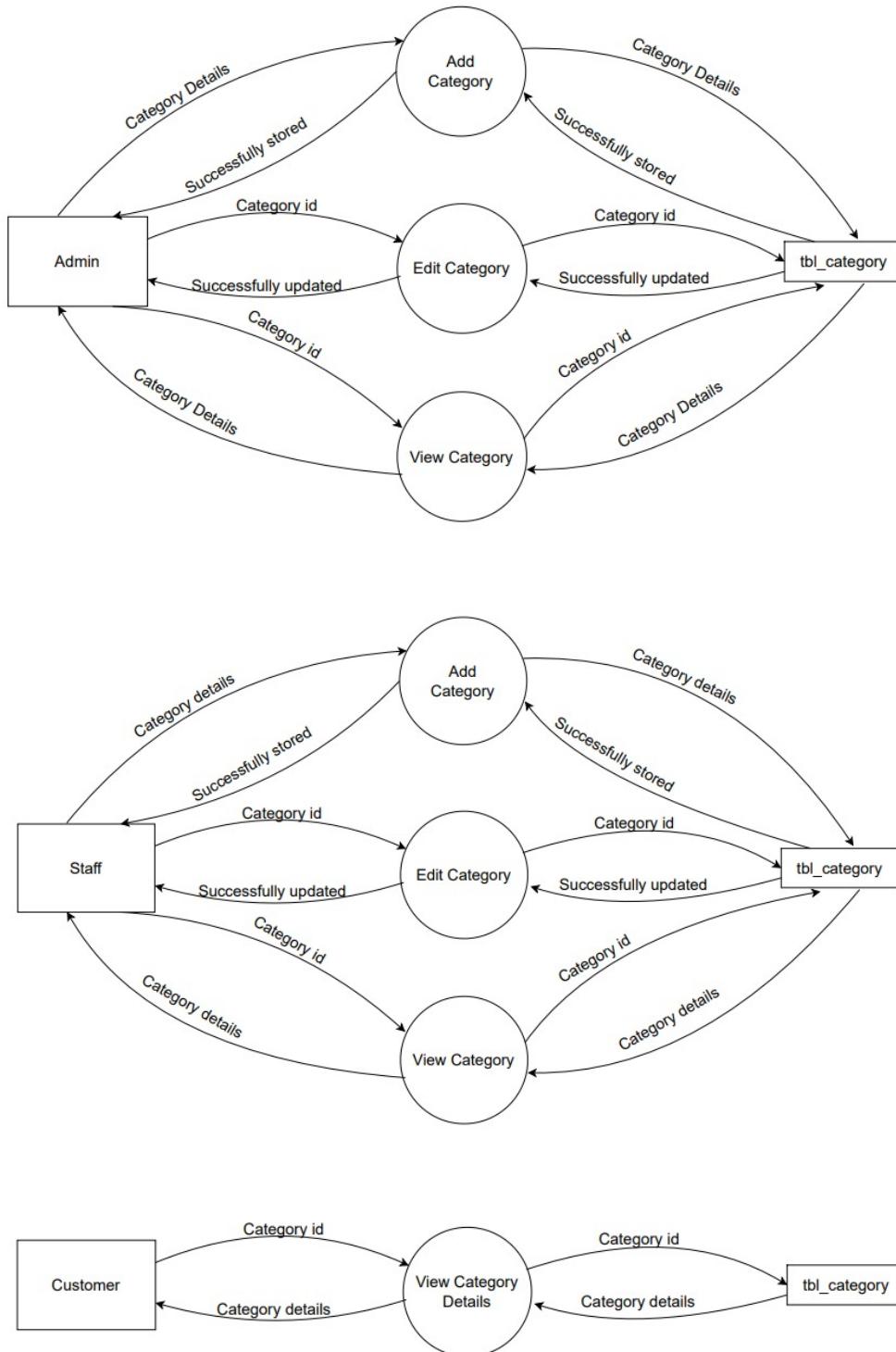


Figure 4.8: Level 3 DFD showing Category Management

Variety Management

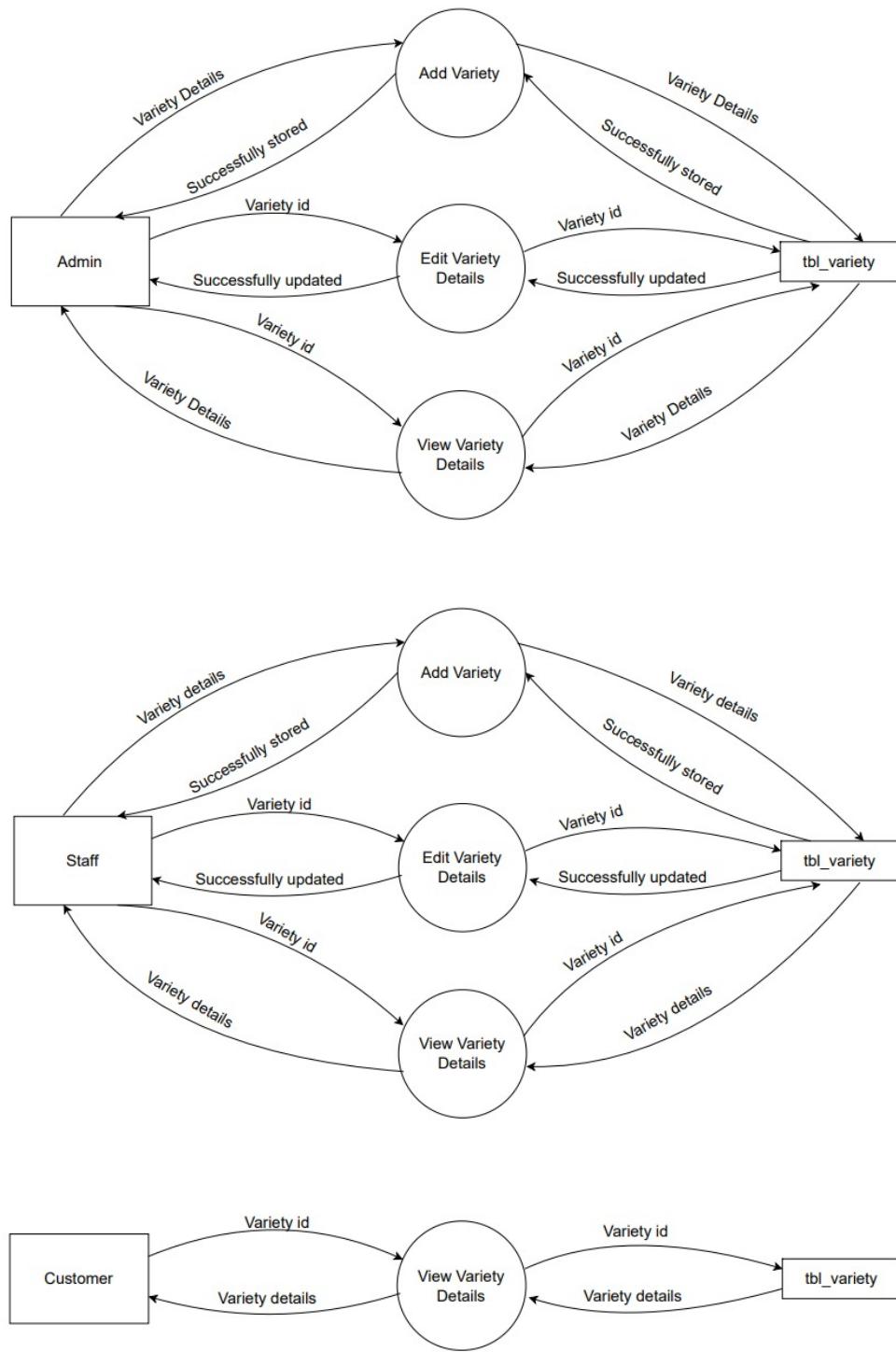


Figure 4.9: Level 3 DFD showing Variety Management

Brand Management

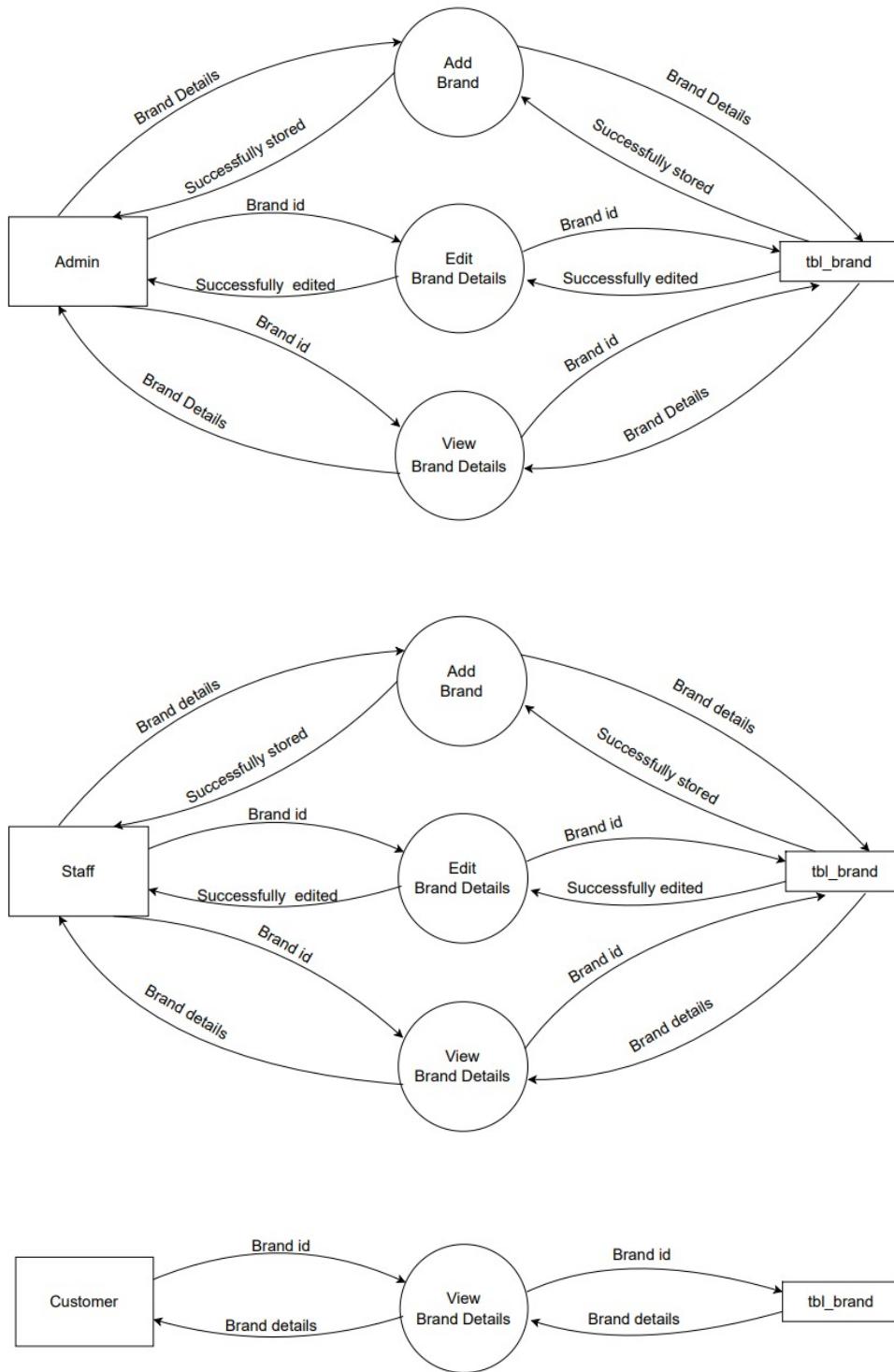


Figure 4.10: Level 3 DFD showing Brand Management

Item Management

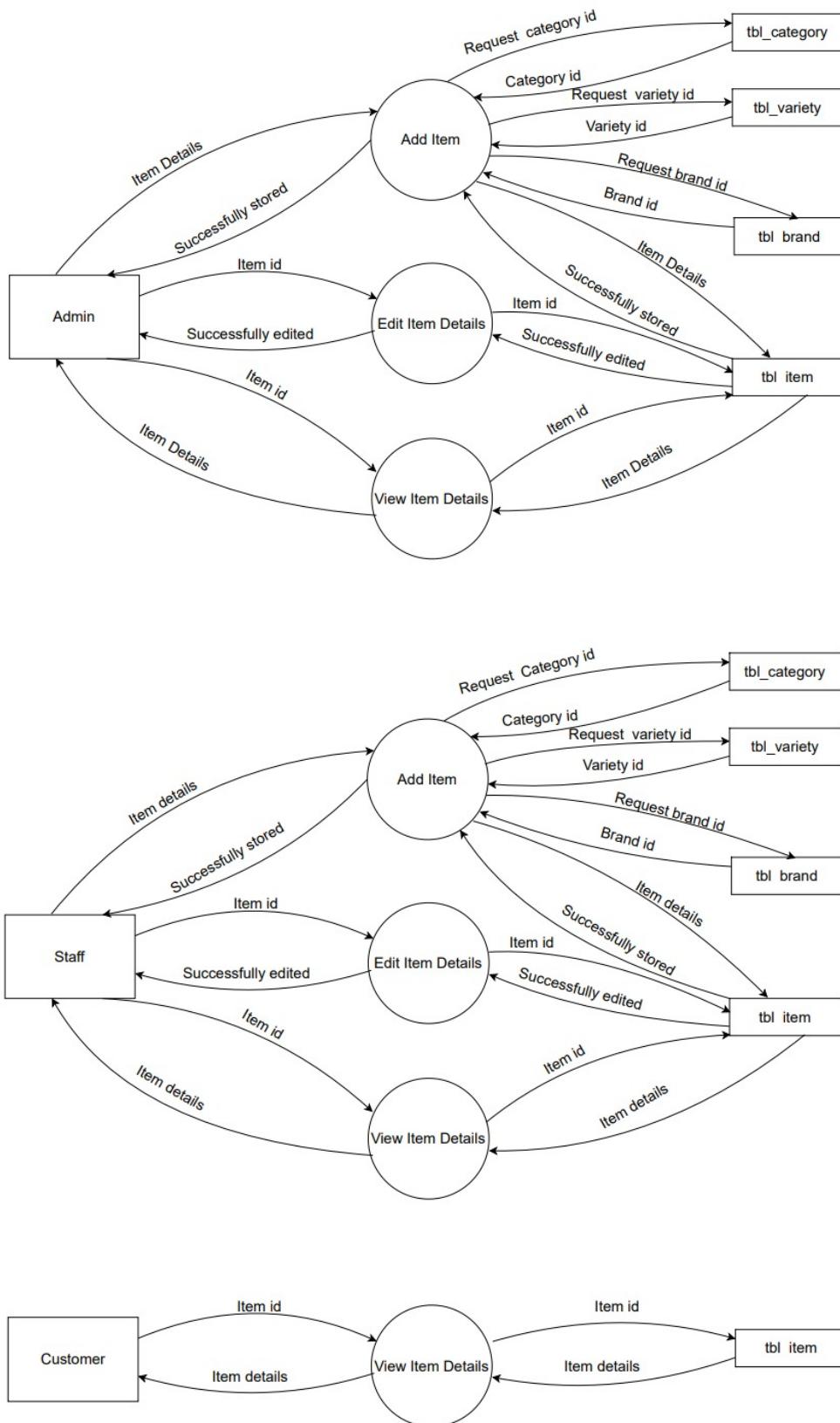


Figure 4.11: Level 3 DFD showing Item Management

4.4 Database Design

Database design is a collection of processes that facilitate the designing, development, implementation and maintenance of enterprise data management systems. The data they store must be organized according to the user requirement. A well designed database is essential for the good performance of the system. Properly designed database are easy to maintain, improves data consistency and are cost effective in terms of disk storage space.

4.4.1 Data Normalization

Normalization is a database design technique which organizes tables in a manner that reduces redundancy and dependency of data. The data they store must be according to the user requirement. A database table is known as a relation that provides information related to specific entity. All relations in a relational database are required to satisfy the following conditions.

Data in First Normal Form

- Remove repeating data from table.
- From the removed data, create one or more tables and relationships.

Data in Second Normal Form

- Identify tables and relationships one or more than key.
- Remove data that depends on only one part of the key.
- From the removed data, create one or more tables and relationships.

Data in Third Normal Form

- Remove that depends on other hand in the table or relationships.
- From the removed data, create one or more tables and relationships.

Advantages of Normalization

- Reduction of redundant data.

- Data consistency.
- Better performance.
- Database table compaction.
- Reduce insertion, deletion, updating anomalies.

4.4.2 Database tables

The table is responsible for storing data in the database. it is important to realize that the design of the system is totally interrelated and so table design cannot really be consider in isolation from inputs, outputs, procedures, codes and security requirements.

Table Showing Login Details

Field name	Data Type	Constraints	Description
uname	varchar(30)	Primary key	Username
uid	int(11)	Foreign Key	User ID
upass	varchar(30)	notnull	Password
utype	varchar (20)	sad	User type

Table 4.1: Login Table

Table Showing Staff Details

Field name	Data Type	Constraints	Description
sid	int(11)	Primary key	Unique id for Staff
sname	varchar(50)	notnull	Staff Name
sadr	varchar(300)	notnull	Staff Address
scity	varchar(20)	notnull	Staff Address City
sstate	varchar(20)	notnull	Staff Address State
spincode	int(11)	notnull	Staff Pincode
sem	varchar(50)	notnull	Staff Email
sphn	varchar(12)	notnull	Staff mobile no.

Table 4.2: Staff Table

Table Showing Customer Details

Field name	Data Type	Constraints	Description
rid	int(11)	Primary key	Unique id for Customer
name	varchar(50)	notnull	Customer Name
adr	varchar(300)	notnull	Customer Address
city	varchar(20)	notnull	Customer Address City
state	varchar(20)	notnull	Customer Address State
pincode	int(11)	notnull	Customer Pincode
em	varchar(50)	notnull	Customer Email
phn	varchar(12)	notnull	Customer mobile no.

Table 4.3: Customer Table

Table Showing Category Details

Field name	Data Type	Constraints	Description
ccode	varchar(20)	Primary key	Unique id for Catagory
cname	varchar(20)	notnull	Catagory Name
cdesc	varchar(100)		Catagory Description

Table 4.4: Category Table

Table Showing Variety Details

Field name	Data Type	Constraints	Description
vcode	varchar(20)	Primary key	Unique id for Variety
vname	varchar(20)	notnull	notnull
vdesc	varchar(100)		Variety Description

Table 4.5: Variety Table

Table Showing Brand Details

Field name	Data Type	Constraints	Description
Bcode	varchar(20)	Primary key	Unique id for Brand
Bname	varchar(20)	notnull	Brand Name
bdesc	varchar(100)		Brand Description

Table 4.6: Brand table

Table Showing Item Master Details

Field name	Data Type	Constraints	Description
icode	varchar(20)	Primary key	Unique id for Item Master
iname	varchar(20)	notnull	Item name
ccode	varchar(20)	Foreign Key	Unique id for Catagory
bcode	varchar(20)	Foreign Key	Unique id for Brand
vcode	varchar(20)	Foreign Key	Unique id for Variety
amt	varchar(20)	notnull	Item Rent Amount
img	varchar(100)		Item Image Path
idesc	varchar(300)	notnull	Item Description

Table 4.7: Item Master Table

Table Showing Item Child Details

Field name	Data Type	Constraints	Description
icid	int(11)	Primary key	Item Number
ino	varchar(20)	notnull	Unique id for Item Child
icode	varchar(20)	Foreign Key	Unique id for Item Master
color	varchar(20)		Sub Item Color
condn	varchar(100)	notnull	Item Condition
imgpath	varchar(100)	hjk	Sub Item Image Path

Table 4.8: Item Child Table

Table Showing Order Master Details

Field name	Data Type	Constraints	Constraints
oid	varchar(20)	Primary key	Unique id for Rent Order
odate	date	notnull	Order Date
uid	varchar(20)	Foreign Key	Unique id for Customer
tqty	int(11)	notnull	Total Quantity
trent	int(11)	notnull	Total Rent Amount
ostatus	varchar(20)	notnull	Order Status
pstatus	varchar(20)	notnull	Payment Status

Table 4.9: Order Master Table

Table Showing Order Child Details

Field name	Data Type	Constraints	Description
ocid	varchar(20)	Primary key	Unique id for Order Child
oid	varchar(20)	Foreign Key	Unique id for Order Master
ino	varchar(20)	Foreign Key	Unique id for Item Child
qty	int(11)	notnull	Item Quantity
nod	int(11)	notnull	Number of Days
idate	date		Issue Date
rdate	date		Return Date
status	varchar(20)		Item Return Condition

Table 4.10: Order Child Table

Table Showing Payment Details

Field name	Data Type	Constraints	Description
payid	varchar(20)	Primary key	Unique id for Payment
oid	varchar(20)	Foreign Key	Unique id for Order Master
uid	varchar(20)	Foreign Key	Unique id for Customer
trent	int(11)	notnull	Total Rent Amount

Table 4.11: Payment Table

4.5 Input Design

Input design is the process of converting a user-oriented description of the inputs to a computer-based business system into a programmer-oriented specification. The quality of system input determines the quality of system output. Input specification describes the manner in which data enter the system for processing. Input design features can ensure the reliability of the system and produce result from accurate data or they can result in the production of errors. The input design also determines whether the user can interact efficiently with the system.

Input design requires consideration of the needs of the data entry operator. Three data entry considerations are:

- The field length must be documented.
- The sequence of fields must match the sequence of the fields on the source document.
- The data format must be identified to the data entry operator.

In our system almost all inputs are being taken from the databases. To provide adequate inputs we have to select necessary values from the databases and arrange it to the appropriate controls.

Inaccurate input data are the most common cause of errors in data processing. Errors entered by data entry can be controlled by input design. Input design is the process of converting user-oriented inputs to a computer-based format. There are three major approaches for entering data into the computer. They are menus, formatted forms and prompts. A menu is a selection list that simplifies computer data access or entry. Instead of remembering what to enter, the user

choices from a list of option. A formatted form is a preprinted form or a template that request the user to enter data in appropriate location. It is a fill-in-the-blank type form. The form is flashed on the screen as a unit. In prompt the system displays one enquiry at a time, asking the user for a response.

Login Form

Description : This form shows login page for all users.

The screenshot shows a login interface for 'InstruRental'. At the top, there's a dark header bar with 'HOME' and 'REGISTER HERE' buttons. Below the header is a large teal button labeled 'INSTRU RENTAL'. The main area features a large, faint background image of a person playing a guitar. Centered in this area is a large, bold 'LOGIN HERE' button. Below the background image, the word 'Login' is centered above a form. The form consists of three rows: 'Username' with an input field, 'Password' with an input field, and a 'Login' button at the bottom. The entire form is set against a white background. At the very bottom of the page, there's a dark footer bar with 'Copyright 2020, InstruRental' on the left and 'All Rights Reserved.' on the right.

Staff Form

Description : This form is used to add new staff to the rental shop.

The screenshot shows a dark-themed web page for 'INSTRU RENTAL'. At the top, there are navigation links: 'HOME' (in white), 'INSTRU RENTAL' (in white on a teal background), and 'REGISTER HERE' (in white). Below these, a large button labeled 'LOGIN HERE' is visible. The main content area contains a 'Login' form with three fields: 'Username' (text input), 'Password' (text input), and a 'Login' button. At the bottom of the page, a dark footer bar displays the copyright information 'Copyright 2020, InstruRental' and 'All Rights Reserved.'

Customer Form

Description : This form shows the registration page for new customers.

The screenshot shows a dark-themed web page for 'INSTRU RENTAL'. At the top, there are navigation links: 'HOME' (in white), 'INSTRU RENTAL' (in white on a teal background), and 'REGISTER HERE' (in white). Below these, a large button labeled 'LOGIN HERE' is visible. The main content area contains a 'Login' form with three fields: 'Username' (text input), 'Password' (text input), and a 'Login' button. At the bottom of the page, a dark footer bar displays the copyright information 'Copyright 2020, InstruRental' and 'All Rights Reserved.'

Category Form

Description : This form is used to add new category of instrument in the rental shop

Category Code	Category Name	Description	Action
C101	Acoustic	Acoustic Instruments. Category of Instruments that are unplugged.	Edit Delete
C102	Electric	Electric Instruments. Category of Instruments that are plugged.	Edit Delete

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Variety Form

Description : This form is used to add new variety of instrument in the rental shop.

Variety Code	Variety Name	Description	Action
V101	Pianos	Variety of Pianos and Keyboards.	Edit Delete
V102	Guitars	Variety Of Guitars ranging from Acoustic, Electric, to Bass Guitars	Edit Delete
V103	Woodwind	Variety of Woodwind Instruments such as Flutes, Saxophones, etc.	Edit Delete
V104	Percussion	Variety of Percussive Instruments Ranging from drum kits, Cymbals and Ethnic Percussions	Edit Delete
V105	Strings	Variety of Stringed Instruments such as Violins, Cellos, etc.	Edit Delete

Brand Form

Description : This form is used to add new brand of instrument in the rental shop.

Brand Code	Brand Name	Description	Action
B101	Yamaha	Yamaha Music India Pvt. Ltd. is part of the Yamaha Corporation worldwide group of companies and offers full line of Yamaha musical instruments, Pro audio and Audio Visual equipments to India market.	Edit Delete
B102	Roland	Roland is best known for manufacturing, marketing, importing and exporting of electronic musical instruments, electronic equipment and software	Edit Delete
B103	Fender	The Fender Musical Instruments Corporation (FMIC, or simply Fender) is an American manufacturer of stringed instruments and amplifiers.	Edit Delete
B104	Keilworth	Keilworth is German brand that has been producing saxophones since 1925, Keilworth horns are known for their bold and distinctive sound, durability and consistent performance.	Edit Delete

Item Form

Description : This form is used to add new instrument of instrument in the rental shop.

Item Code	<input type="text"/>
Item Name	<input type="text"/>
Description	
Category	<input type="text" value="Acoustic"/>
Variety	<input type="text" value="Pianos"/>

Sub Item Form

Description : This form is used to add new sub instrument of instrument in the rental shop.

The screenshot shows a dark-themed web application for instrument rental. At the top, there's a navigation bar with links for HOME, REPORTS, CUSTOMERS, STAFF, INSTRU RENTAL (highlighted in blue), ITEM TAGS, ITEMS, ORDERS, and LOGOUT. Below the navigation is a large banner with the text "SUB ITEM VIEW". On the left, there's a form for adding a new item:

Item Code	IN101
Item Number	
Color	
Condition	
Upload an image	<input type="button" value="Choose file"/> No file chosen
ADD	

On the right, there's a table listing existing sub items:

Item Code	Item No	Color	Condition	Action
IN101	IC1011	Black	Great	Edit Delete

Payment Form

Description : This form is used for the payment of the instrument.

The screenshot shows a dark-themed web application for instrument rental. At the top, there's a navigation bar with links for HOME, EDIT PROFILE, INSTRUMENTS, FILTER, INSTRU RENTAL (highlighted in blue), MY CART, MY ORDERS, ABOUT US, and LOGOUT. Below the navigation is a banner with the text "PAYMENT". On the right, there's a form for entering payment details:

Card Number	
CVV	
Total Amount	1500
Advance Amount	750
Pay & Confirm Order	

Order Report Form

Description : This form is used get the order report of a particular period of time.

Odate	Customer	Customer Address	Contact no	Total Qty	Total Rent	Amount Paid	Balance	Order Status	Pay Status	Items Ordered
2020-11-27	Dipin	Green Villa, Aluva	9865324175	1	1797	1797	0	Returned	Full Paid	View Items
2020-12-01	Dipin	Green Villa, Aluva	9865324175	1	399	399	0	Pending	Full Paid	View Items
2020-12-01	Dipin	Green Villa, Aluva	9865324175	1	2000	2000	0	Pending	Full Paid	View Items
2020-11-22	Elton D Aruja	Emil Dale, Thoppumpady	6282685510	1	500	500	0	Returned	Full Paid	View Items
2020-11-24	Elton D Aruja	Emil Dale, Thoppumpady	6282685510	1	500	500	0	Returned	Full Paid	View Items
2020-11-24	Elton D Aruja	Emil Dale, Thoppumpady	6282685510	1	500	500	0	Returned	Full Paid	View Items

4.6 Output Design

One of the important features of an information system for users is the output it produces. Output is the information delivered to users through the information system. Without quality output, the entire system appears to be unnecessary that users will avoid using it. Uses generally merit the system solely by its output. In order to create the most useful output possible. One works closely with the user through an interactive process, until the result is considered to be satisfactory.

Output design has been an ongoing activity almost from the beginning of the project. In the study phase, outputs were identified and described general in the project directive. A tentative output medium was then selected and sketches made for each output. In the feasibility analysis, a “best” new system was selected; its description identified the input and output media. In the design phase the system has included an evaluation and selection of specific equipment for the system.

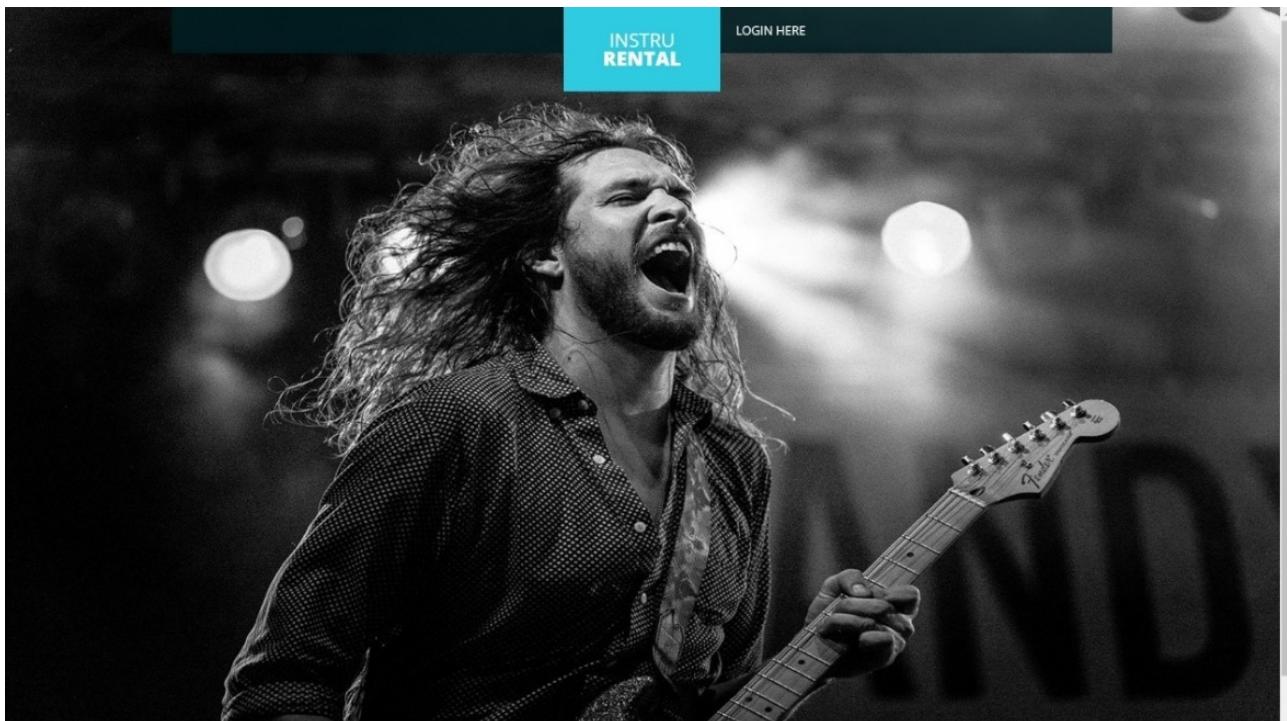
Output design generally deals with the results generated by the system i.e., reports. These

reports can be generated from stored or calculated values. Reports are displayed either as screen window preview or printed form. Most end users will not actually operate the information system or enter data through workstation, but they will use the output from the system.

Outputs from computer systems are required primarily to communicate the results of processing to the user. They are also used to provide a permanent copy of these results for later consultation.

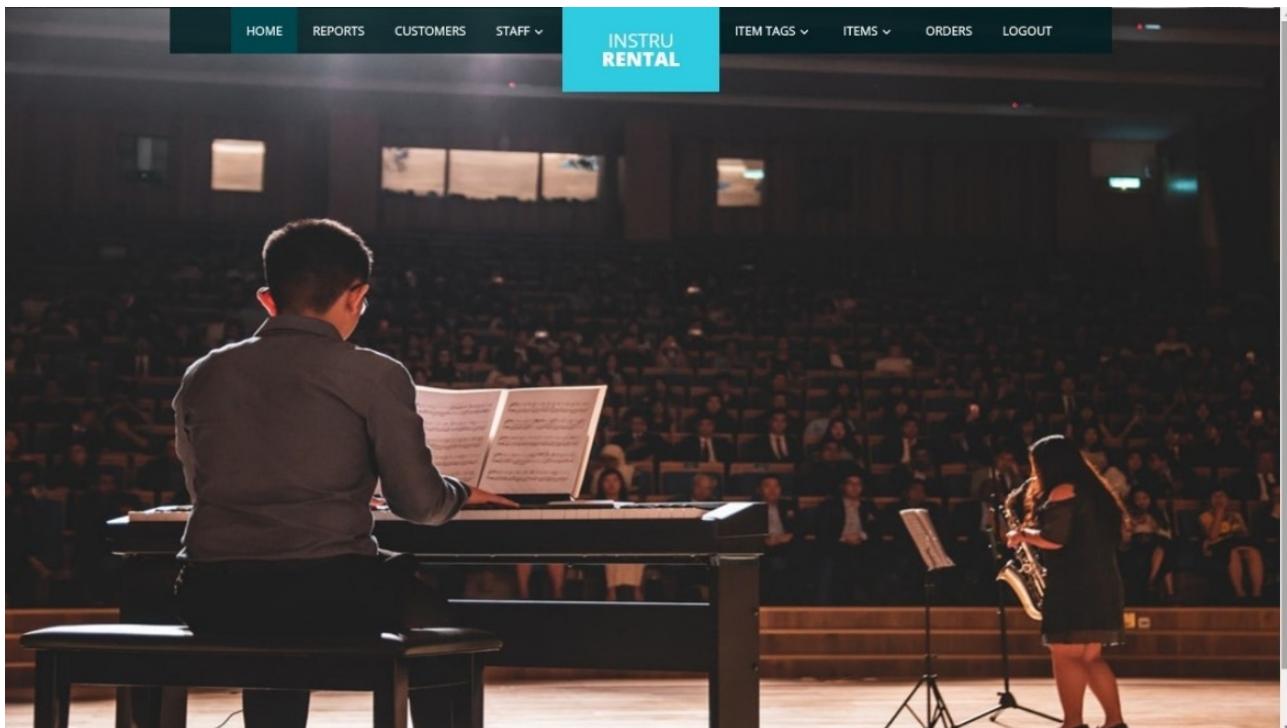
Home Page

Description : This is the main Home page for all the users.



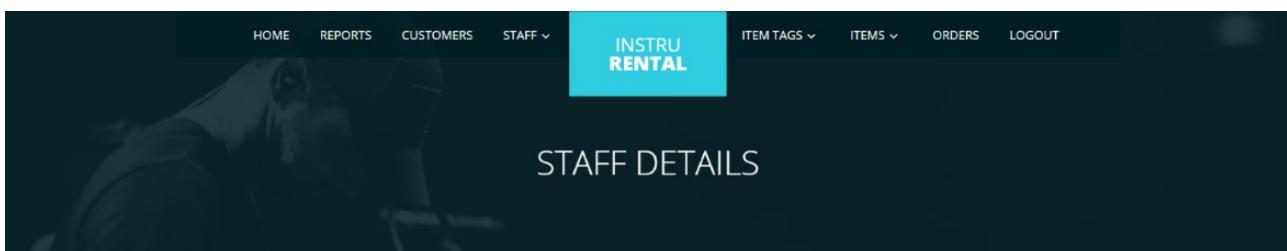
Admin Home Page

Description : This is the Home page for the Admin.



View Staff Page

Description : This page shows the details of Staff working in the rental shop.



Staff ID	Name	Address	City	State	Pin Code	Phone	Email
102	Raj	Aluva	Kochi	Kerala	682005	9895788271	raj@gmail.com
101	staff	Blue Villa	Kochi	Kerala	682005	9895788271	staff@gmail.com
105	akshay	rose cottage	kollam	kerala	683517	9897654455	akshay1@gmail.com
106	amal	new villa	thrissur	kerala	683514	9597433456	amal65@gmail.com

View Customer Page

Description : This page shows the details of registered customers in the rental shop.

Reg ID	Name	Address	City	State	Pin Code	Phone	Email
3	Dipin	Green Villa, Aluva	Kochi	Kerala	689002	9865324175	dipin@gmail.com
4	Elton D Aruja	Emil Dale, Thoppumpady	Kochi	Kerala	682005	6282685510	elton.d.aruja@gmail.com
5	Yohan Sunil	Green Villa, Fort Kochi	Kochi	Kerala	682005	9898786789	yohan@gmail.com
6	bristow	new villa	palarivattam	kerala	683521	9862124234	bristow@gmail.com
7	manu	new villa	kochi	kerala	683512	6473632424	manu@gmail.com

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View Category Page

Description : This page shows the details of Category available in the rental shop.

Category Code	Category Name	Description	Action
			Add

DETAILS

Category Code	Category Name	Description	Action
C101	Acoustic	Acoustic Instruments. Category of Instruments that are unplugged.	Edit Delete
C102	Electric	Electric Instruments. Category of Instruments that are plugged.	Edit Delete

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View Variety Page

Description : This page shows the details of Variety available in the rental shop.

Variety Code	Variety Name	Description	Action
V101	Pianos	Variety of Pianos and Keyboards.	Edit Delete
V102	Guitars	Variety Of Guitars ranging from Acoustic, Electric, to Bass Guitars	Edit Delete
V103	Woodwind	Variety of Woodwind Instruments such as Flutes, Saxophones, etc.	Edit Delete
V104	Percussion	Variety of Percussive Instruments Ranging from drum kits, Cymbals and Ethnic Percussions	Edit Delete
V105	Strings	Variety of Stringed Instruments such as Violins, Cellos, etc.	Edit Delete

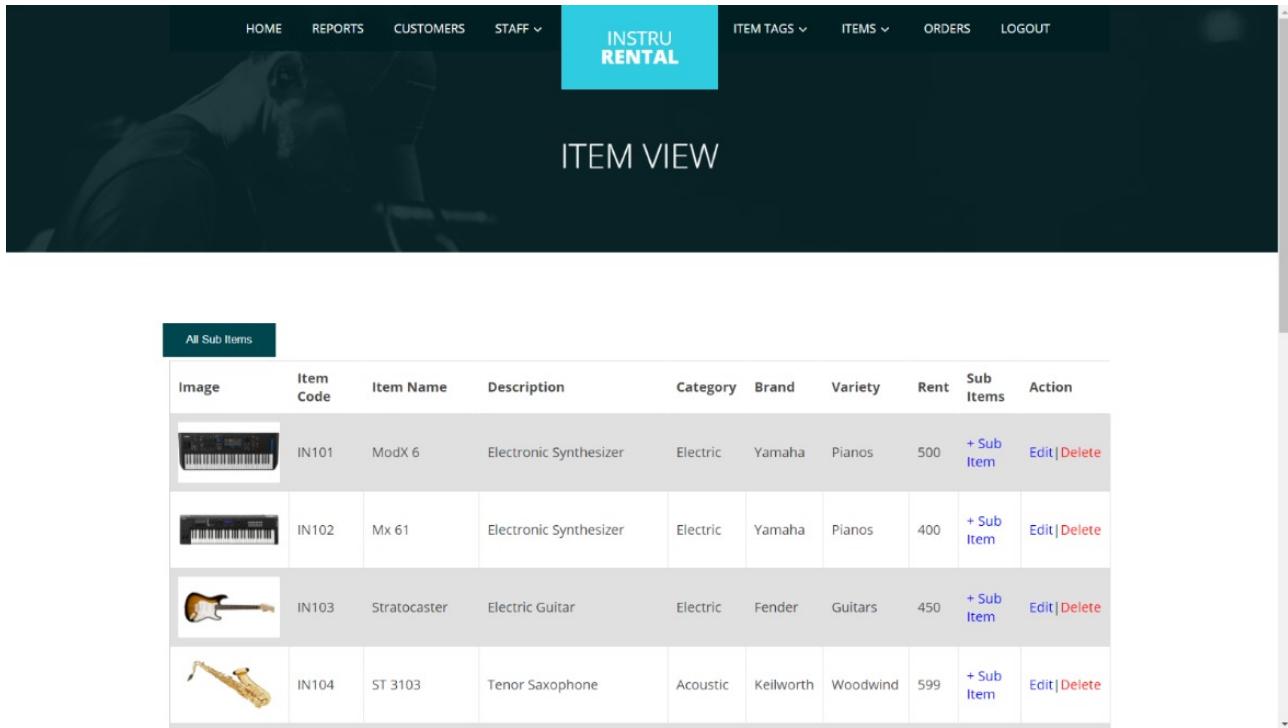
View Brand Page

Description : This page shows the details of Brands available in the rental shop.

Brand Code	Brand Name	Description	Action
B101	Yamaha	Yamaha Music India Pvt. Ltd. is part of the Yamaha Corporation worldwide group of companies and offers full line of Yamaha musical instruments, Pro audio and Audio Visual equipments to India market.	Edit Delete
B102	Roland	Roland is best known for manufacturing, marketing, importing and exporting of electronic musical instruments, electronic equipment and software	Edit Delete
B103	Fender	The Fender Musical Instruments Corporation (FMIC, or simply Fender) is an American manufacturer of stringed instruments and amplifiers.	Edit Delete
B104	Keilworth	Keilworth is German brand that has been producing saxophones since 1925, Keilworth horns are known for their bold and distinctive sound, durability and consistent performance.	Edit Delete

View Item Page

Description : This page shows the details of instruments available in the rental shop.

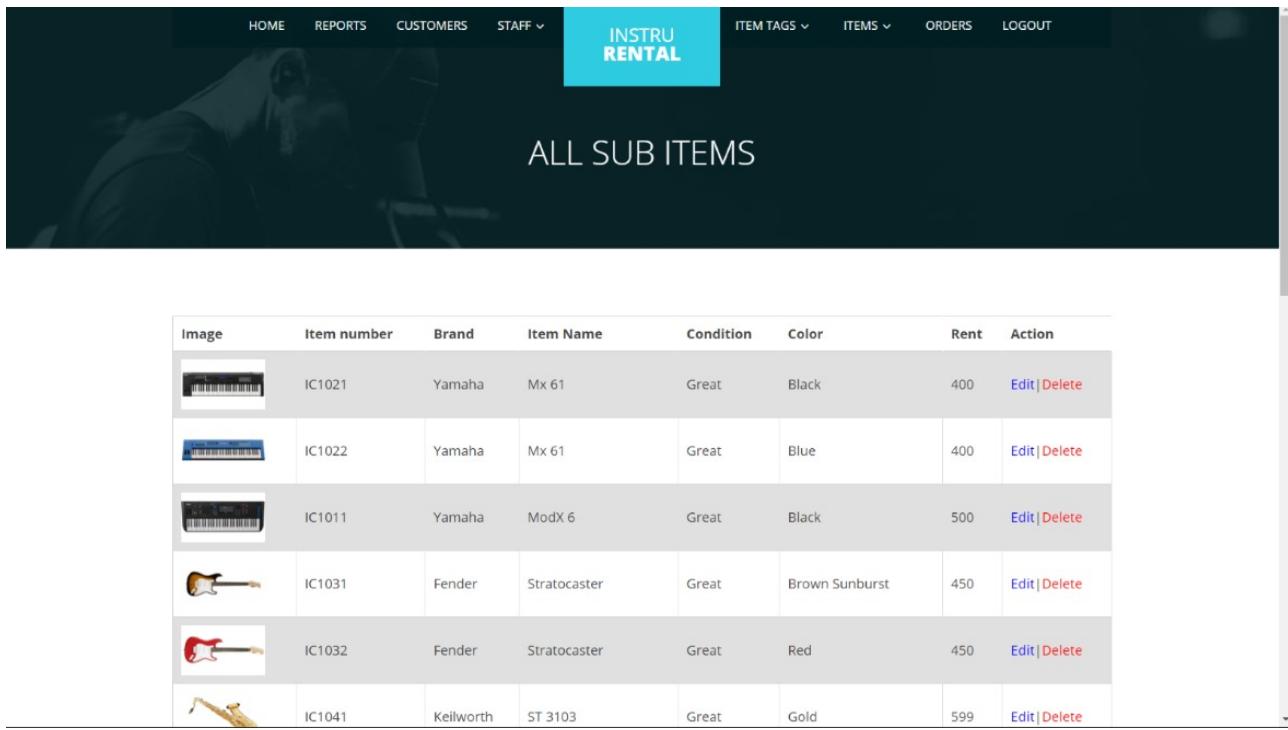


The screenshot shows a dark-themed web application interface for an instrument rental system. At the top, there is a navigation bar with links: HOME, REPORTS, CUSTOMERS, STAFF, INSTRU RENTAL (highlighted in blue), ITEM TAGS, ITEMS, ORDERS, and LOGOUT. Below the navigation bar, the title "ITEM VIEW" is displayed. The main content area contains a table titled "All Sub Items". The table has columns for Image, Item Code, Item Name, Description, Category, Brand, Variety, Rent, Sub Items, and Action. There are four rows of data:

Image	Item Code	Item Name	Description	Category	Brand	Variety	Rent	Sub Items	Action
	IN101	ModX 6	Electronic Synthesizer	Electric	Yamaha	Pianos	500	+ Sub Item	Edit Delete
	IN102	Mx 61	Electronic Synthesizer	Electric	Yamaha	Pianos	400	+ Sub Item	Edit Delete
	IN103	Stratocaster	Electric Guitar	Electric	Fender	Guitars	450	+ Sub Item	Edit Delete
	IN104	ST 3103	Tenor Saxophone	Acoustic	Keilworth	Woodwind	599	+ Sub Item	Edit Delete

View Sub Item Page

Description : This page shows the details of Sub Items available in the rental shop.



The screenshot shows a dark-themed web application interface for an instrument rental system. At the top, there is a navigation bar with links: HOME, REPORTS, CUSTOMERS, STAFF, INSTRU RENTAL (highlighted in blue), ITEM TAGS, ITEMS, ORDERS, and LOGOUT. Below the navigation bar, the title "ALL SUB ITEMS" is displayed. The main content area contains a table with columns for Image, Item number, Brand, Item Name, Condition, Color, Rent, and Action. There are six rows of data:

Image	Item number	Brand	Item Name	Condition	Color	Rent	Action
	IC1021	Yamaha	Mx 61	Great	Black	400	Edit Delete
	IC1022	Yamaha	Mx 61	Great	Blue	400	Edit Delete
	IC1011	Yamaha	ModX 6	Great	Black	500	Edit Delete
	IC1031	Fender	Stratocaster	Great	Brown Sunburst	450	Edit Delete
	IC1032	Fender	Stratocaster	Great	Red	450	Edit Delete
	IC1041	Keilworth	ST 3103	Great	Gold	599	Edit Delete

View Order Page

Description : This page shows the details of Order placed by the customer.

The screenshot shows a dark-themed web application interface. At the top, there is a navigation bar with links: HOME, REPORTS, CUSTOMERS, STAFF (with a dropdown arrow), INSTRU RENTAL (highlighted in blue), ITEM TAGS (with a dropdown arrow), ITEMS (with a dropdown arrow), ORDERS (highlighted in blue), and LOGOUT. Below the navigation bar, the title "ORDER DETAILS" is centered. A large, faint background image of a person playing a guitar is visible. The main content area contains a table with the following data:

Odate	Customer	Customer Address	Contact no	Total Qty	Total Rent	Amount Paid	Balance	Order Status	Pay Status	Items Ordered
2020-12-01	Dipin	Green Villa, Aluva	9865324175	1	2000	2000	0	Pending	Full Paid	View Items
2020-12-01	Dipin	Green Villa, Aluva	9865324175	1	399	399	0	Pending	Full Paid	View Items
2020-11-27	bristow	new villa	9862124234	1	1596	1596	0	Returned	Full Paid	View Items
2020-11-27	Dipin	Green Villa, Aluva	9865324175	1	1797	1797	0	Returned	Full Paid	View Items
2020-11-26	Elton D Aruja	Emil Dale, Thoppumpady	6282685510	2	1799	1799	0	Returned	Full Paid	View Items
2020-11-26	Elton D Aruja	Emil Dale, Thoppumpady	6282685510	1	1299	1299	0	Returned	Full Paid	View Items
2020-11-	Elton D	Emil Dale,	6282685510	1	450	450	0	Returned	Full Paid	View Items

Staff Report

Description : This page shows the Staff report.

The screenshot shows a dark-themed web application interface. At the top, there is a navigation bar with links: HOME, REPORTS (with a dropdown arrow), CUSTOMERS, STAFF (with a dropdown arrow), INSTRU RENTAL (highlighted in blue), ITEM TAGS (with a dropdown arrow), ITEMS (with a dropdown arrow), ORDERS, and LOGOUT. Below the navigation bar, the title "STAFF REPORT" is centered. A large, faint background image of a person playing a guitar is visible. The main content area contains a table with the following data:

Staff ID	Name	Address	City	State	Pin Code	Phone	Email
102	Raj	Aluva	Kochi	Kerala	682005	9895788271	raj@gmail.com
101	staff	Blue Villa	Kochi	Kerala	682005	9895788271	staff@gmail.com
105	akshay	new villa	kollam	kerala	683513	9752345678	akshay1@gmail.com
106	amal	kovil house	thrissur	kerala	683511	9356345678	amal23@gmail.com

[Print](#)

Order Report

Description : This page shows the Order report.

The screenshot shows a dark-themed web application interface. At the top, there is a navigation bar with links: HOME, REPORTS (with a dropdown arrow), CUSTOMERS, STAFF (with a dropdown arrow), INSTRU RENTAL (highlighted in a teal box), ITEM TAGS (with a dropdown arrow), ITEMS (with a dropdown arrow), ORDERS, and LOGOUT. Below the navigation bar, the title "ORDER REPORTS" is centered. Underneath the title are two date input fields labeled "From" and "To" with placeholder text "dd-mm-yyyy", and a "SHOW" button. The main content area displays a table of order history with the following columns: Date, Customer, Customer Address, Contact no, Total Qty, Total Rent, Amount Paid, Balance, Order Status, Pay Status, and Items Ordered. Each row in the table contains a "View Items" link under the "Items Ordered" column.

Date	Customer	Customer Address	Contact no	Total Qty	Total Rent	Amount Paid	Balance	Order Status	Pay Status	Items Ordered
2020-11-22	Elton D Aruja	Emil Dale, Thoppumpady	6282685510	1	500	500	0	Returned	Full Paid	View Items
2020-11-23	Yohan Sunil	Green Villa, Fort Kochi	9898786789	1	2000	2000	0	Returned	Full Paid	View Items
2020-11-24	Elton D Aruja	Emil Dale, Thoppumpady	6282685510	1	500	500	0	Returned	Full Paid	View Items
2020-11-24	Elton D Aruja	Emil Dale, Thoppumpady	6282685510	1	500	500	0	Returned	Full Paid	View Items
2020-11-25	Elton D Aruja	Emil Dale, Thoppumpady	6282685510	1	400	400	0	Returned	Full Paid	View Items

Customer Report

Description : This page shows the customer report.

The screenshot shows a dark-themed web application interface. At the top, there is a navigation bar with links: HOME, REPORTS (with a dropdown arrow), CUSTOMERS (highlighted in a teal box), STAFF (with a dropdown arrow), INSTRU RENTAL, ITEM TAGS (with a dropdown arrow), ITEMS (with a dropdown arrow), ORDERS, and LOGOUT. Below the navigation bar, the title "CUSTOMER DETAILS" is centered. At the bottom left, there is a button labeled "View Best Customers". The main content area displays a table of customer information with the following columns: Reg ID, Name, Address, City, State, Pin Code, Phone, and Email. Each row in the table contains a "Print" button at the bottom right.

Reg ID	Name	Address	City	State	Pin Code	Phone	Email
3	Dipin	Green Villa, Aluva	Kochi	Kerala	689002	9865324175	dipin@gmail.com
4	Elton D Aruja	Emil Dale, Thoppumpady	Kochi	Kerala	682005	6282685510	elton.d.aruja@gmail.com
5	Yohan Sunil	Green Villa, Fort Kochi	Kochi	Kerala	682005	9898786789	yohan@gmail.com
6	rahul	sudha nivas	kottayam	kerala	683516	9263456789	rahul@gmail.com

Customer Item Page

Description : This page shows the instruments available in the rental shop.

The screenshot shows a dark-themed web application for instrument rental. At the top, there's a navigation bar with links for HOME, EDIT PROFILE, INSTRUMENTS (with a dropdown arrow), FILTER, MY CART, MY ORDERS, ABOUT US, and LOGOUT. A teal-colored button labeled 'INSTRU RENTAL' is prominently displayed. Below the navigation, a large search bar is labeled 'SEARCH HERE'. Underneath it are three dropdown menus: 'Select Brand', 'Select Variety', and 'Select Category', followed by a 'SEARCH' button. The main content area features three images of electronic keyboards: a Yamaha ModX 6, a Yamaha Mx 61, and a Yamaha Montage 6. Each product has its name and rent per day price below it. The Yamaha ModX 6 is listed at ₹500, Yamaha Mx 61 at ₹400, and Yamaha Montage 6 at ₹999.

Product Details Page

Description : This page shows the details of the product.

The screenshot shows a product detail page for a Fender Squier SA-150 acoustic guitar. The top navigation bar and 'INSTRU RENTAL' button are identical to the previous page. The main title 'PRODUCT DETAIL' is centered above the product image. The guitar is shown from a side-on perspective, highlighting its natural wood finish and black pickguard. To the left of the guitar, there's a detailed description of the item:
Item Description : Acoustic Guitar
Color : Natural
Rent Per Day : 399/day
Tags : #Acoustic #Fender #Guitars

To the right of the guitar, there are input fields for 'Number of Days' (set to 1) and a 'Add to Cart' button.

Cart Page

Description : This page shows the cart of the customer.

The screenshot shows a dark-themed web application for instrument rental. At the top, there's a navigation bar with links: HOME, EDIT PROFILE, INSTRUMENTS (with a dropdown arrow), FILTER, INSTRU RENTAL (highlighted in a teal box), MY CART (selected), MY ORDERS, ABOUT US, and LOGOUT. Below the navigation is a large banner with the text "CART DETAILS". Underneath is a table with the following data:

Item Code	Item Name	Color	Rent Amt(per day)	No of Days	Action
IN114	Squier SA-150	Natural	399	3	Remove
IN104	ST 3103	Gold	599	4	Remove

At the bottom of the table is a teal-colored button labeled "Order Now".

Customer Order Details Page

Description : This page shows the order details of the customer.

The screenshot shows a dark-themed web application for instrument rental. At the top, there's a navigation bar with links: HOME, EDIT PROFILE, INSTRUMENTS (with a dropdown arrow), FILTER, INSTRU RENTAL (highlighted in a teal box), MY CART, MY ORDERS (selected), ABOUT US, and LOGOUT. Below the navigation is a large banner with the text "ORDER DETAILS". Underneath is a table with the following data:

Odate	Total Qty	Total Rent	Amount Paid	Balance	Order Status	Pay Status	Items Ordered										
2020-12-01	1	2000	2000	0	Returned	Full Paid	<table border="1"> <thead> <tr> <th>Item Code</th> <th>Item Name</th> <th>Color</th> <th>No of Days</th> <th>Return Date</th> </tr> </thead> <tbody> <tr> <td>IN102</td> <td>Mx 61</td> <td>Blue</td> <td>5</td> <td>2020-12-06</td> </tr> </tbody> </table>	Item Code	Item Name	Color	No of Days	Return Date	IN102	Mx 61	Blue	5	2020-12-06
Item Code	Item Name	Color	No of Days	Return Date													
IN102	Mx 61	Blue	5	2020-12-06													
2020-12-01	1	399	399	0	Returned	Full Paid	<table border="1"> <thead> <tr> <th>Item Code</th> <th>Item Name</th> <th>Color</th> <th>No of Days</th> <th>Return Date</th> </tr> </thead> <tbody> <tr> <td>IN114</td> <td>Squier SA-150</td> <td>Black</td> <td>1</td> <td>2020-12-02</td> </tr> </tbody> </table>	Item Code	Item Name	Color	No of Days	Return Date	IN114	Squier SA-150	Black	1	2020-12-02
Item Code	Item Name	Color	No of Days	Return Date													
IN114	Squier SA-150	Black	1	2020-12-02													
2020-11-27	1	1797	1797	0	Returned	Full Paid	<table border="1"> <thead> <tr> <th>Item Code</th> <th>Item Name</th> <th>Color</th> <th>No of Days</th> <th>Return Date</th> </tr> </thead> <tbody> <tr> <td>IN104</td> <td>ST 3103</td> <td>Gold</td> <td>3</td> <td>2020-11-30</td> </tr> </tbody> </table>	Item Code	Item Name	Color	No of Days	Return Date	IN104	ST 3103	Gold	3	2020-11-30
Item Code	Item Name	Color	No of Days	Return Date													
IN104	ST 3103	Gold	3	2020-11-30													

Chapter 5

System Implementation and Testing

5.1 Introduction

Implementation is the most difficult part of the stage and the key stage in achieving a successful system. Implementation is the stage in the project where the theoretical design is turned into a working system and is giving confidence on the new system for the users that it will work efficiently and effectively. The objective of the system is to put the tested system into operation while holding costs, risks and personal irritation to the minimum. Therefore it involves careful planning, design of methods to achieve the changeover, an evaluation of change over methods.

In order to implement a system, planning is very essential. Proper planning has been done to take care of the following issues

- Implication of the system environment.
- Stand-by facilities.
- Channels of communication.
- Staff selection and allocation for every data.
- Consultation with unions.

Throughout all phases of the project, the activities of the project, the activities of implementation were planned .Apart from planning, major task are education and training users. The

more complex system being implemented, the more involved will be the system analysts and the design effort required for implementation. Implementations the final and important phase. The most critical stage in achieving a successful new system and in giving the users confidence that the new system will work and be effective. The system can be implemented only after through testing. This method also offers the greatest security.

5.2 Testing

Software testing is an activity to check whether the actual results match the expected results and ensure that the software system is defect free. The testing phase involves the testing of the developed system using various test data. After preparing the test data, the system under study is tested using those data. While testing the system by using test data, errors were found and corrected. Thus a series of tests were performed for the proposed system. Before the system was ready for implementation various types of testing are done on the system.

5.2.1 Unit Testing

Unit testing focuses verification efforts even in the smallest unit of software design in each module. This is known as Module Testing. The modules of the system are tested separately. In this testing each module is focused to work satisfactorily as regard to expected output from the module. There are some validation checks for the fields.

5.2.2 Integration Testing

Integration testing is a level of software testing where individual units are combined and tested as a group. It is a systematic testing to uncover the errors within the interface. This testing is done with simple data and the developed system has run successfully with this simple data. The need for integrated system is to find the overall system performance.

5.2.3 System Testing

System testing deals with tests for the entire system. This is driven by the scenarios from the analysis team. System limits and features are tested here. The system must successfully execute all scenarios before it is ready. After all, the scenarios are a part of the requirement document

measure success. Application testing represents the bulk of testing done by industry. Unlike the internal and unit testing, which are programmed, these test are usually driven by scripts that run the system with a collection of parameters and collect results. In the past, these scripts may have been written by hand but in modern system this process can be automated.

Validation Testing

It is where requirements established as a part of software requirements analysis is validated against the software that has been constructed. This test provides the final assurance that the software meets all functional, behavioral and performance requirements. The errors, which are uncovered during integration testing, are corrected during this phase.

Output Testing

No system could be useful if it does not produce the required output in the specific format. Output testing is performed to ensure the correctness of the output and its format. The output generated or displayed by the system is tested asking the user about the format required by them.

5.3 Test Cases

A test plan documents the strategy that will be used to verify and ensure that a product or system meets its design specification and other requirements. A test plan is usually prepared by or with significant input from test Engineers. Depending on the product and the responsibility of the organization to which the test plan applies.

5.3.1 Unit Testing

Text Cases and Result

Sl No	Form	Expected result	Actual result	Pass or Fail
1	Login Form	Should validate user and provide link to user accounts	Got entry to accounts	Pass
2	Staff Form	Should validate all entered fields and flash a message indicating successful registration	Message indicating successful registration is shown	Pass
3	Customer Form	Should validate all entered fields and flash a message indicating successful registration	Message indicating successful registration is shown	Pass
4	Category Form	Should validate all entered fields and flash a message indicating successful registration	Message indicating successful registration is shown	Pass

Sl No	Form	Expected result	Actual result	Pass or Fail
5	Brand Form	Should validate all entered fields and flash a message indicating successful registration	Message indicating successful registration is shown	Pass
6	Variety Form	Should validate all entered fields and flash a message indicating successful registration	Message indicating successful registration is shown	Pass
7	Item Form	Should validate all entered fields and flash a message indicating successful registration	Message indicating successful registration is shown	Pass
8	Sub Item Form	Should validate all entered fields and flash a message indicating successful registration	Message indicating successful registration is shown	Pass
9	Payment Form	Should validate all entered fields and flash a message indicating successful registration	Message indicating successful registration is shown	Pass

Table 5.1: Unit test cases and results

5.3.2 Integration Testing

Text Cases and Result

Sl No	Form	Expected result	Actual result	Pass or Fail
1	Login and user account forms	Get entry to appropriate user page	Appropriate user page is displayed	Pass
2	Staff Form	Must add staff details successfully	Insertion is successful	Pass
3	Customer Form	Must add customer details successfully	Insertion is successful	Pass
4	Category Form	Must add category details successfully	Insertion is successful	Pass
5	Brand Form	Must add brand details successfully	Insertion is successful	Pass
6	Variety Form	Must add brand details successfully	Insertion is successful	Pass
7	Item Form	Must add item details successfully	Insertion is successful	Pass
8	Sub Item Form	Must add sub item details successfully	Insertion is successful	Pass
9	Payment Form	Must add payment details successfully	Insertion is successful	Pass

Table 5.2: Integration test cases and results

5.3.3 Validation Testing

Text Cases and Result

Sl No	Form	Expected result	Actual result	Pass or Fail
1	Create user	Check all mandatory fields and validate all entered data fields	If any error found display message and the same screen is displayed else record saved and confirmed	Pass
2	Edit User	Edit the row corresponding to the value entered	If the value entered is invalid error message is thrown otherwise message indicating successful deletion is flashed	Pass

Table 5.3: Validation test cases and results

5.4 Source Code

index.php

```
● ● ●

<!DOCTYPE html>
<html lang="en-US">
    <head>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0" />
        <title>InstruRental</title>
        <link rel="stylesheet" href="css/components.css">
        <link rel="stylesheet" href="css/responsee.css">
        <link rel="stylesheet" href="owl-carousel/owl.carousel.css">
        <link rel="stylesheet" href="owl-carousel/owl.theme.css">

        <link rel="stylesheet" href="css/template-style.css">
        <link href='http://fonts.googleapis.com/css?family=Open+Sans:400,300,600,700,800' rel='stylesheet' type='text/css'>
        <script type="text/javascript" src="js/jquery-1.8.3.min.js"></script>
        <script type="text/javascript" src="js/jquery-ui.min.js"></script>
        <script type="text/javascript" src="js/modernizr.js"></script>
        <script type="text/javascript" src="js/responsee.js"></script>

    </head>
    <body class="size-1140">

        <header>
            <nav>
                <div class="line">
                    <div class="top-nav">
                        <div class="logo hide-1">
                            <a href="index.html">Intru<br /><strong>Rental</strong></a>
                        </div>
                        <p class="nav-text">Custom menu text</p>
                        <div class="top-nav s-12 l-5">
                            <ul class="right top-ul chevron">
                                <li>
                                    <a>&ampnbsp</a>
                                </li>
                                <li>
                                    </li>
                                    <li>
                                    </li>
                                </ul>
                            </div>
                        </div>
                    </div>
                </div>
            </nav>
        </header>
```

```
    
```

```
        </div>
        <ul class="s-12 l-2">
            <li class="logo hide-s hide-m">
                <a href="index.html">Instru<br /><strong>Rental</strong>
            </li>
        </ul>
        <div class="top-nav s-12 l-5">
            <ul class="top-ul chevron">

                <li>
                    <a href="ulogin.php">Login Here</a>
                </li>
            </ul>
        </div>
    </div>
</nav>
</header>
<section>
    <!-- CAROUSEL -->
    <div id="carousel">
        <div id="owl-demo" class="owl-carousel owl-theme">
            <div class="item">
                
                <div class="carousel-text">
                    <div class="line">

                        </div>
                </div>
            </div>
            <div class="item">
                
                <div class="carousel-text">
                    <div class="line">

                        </div>
                </div>
            </div>
            <div class="item">
                
                <div class="carousel-text">
                    <div class="line">

                        </div>
                </div>
            </div>
        </div>
    </div>
</div>
```

```
● ○ ●
</section>
<!-- FOOTER -->
<footer>
    <div class="line">
        <div class="s-12 l-6">
            <p>Copyright 2015, Vision Design - graphic zoo
            </p>
        </div>
        <div class="s-12 l-6">
            <p class="right">
                <a class="right" href="http://www.myresponsee.com" title="Responsee - lightweight responsive framework">Design and coding by Responsee Team</a>
            </p>
        </div>
    </div>
</footer>
<script type="text/javascript" src="owl-carousel/owl.carousel.js"></script>
<script type="text/javascript">
    jQuery(document).ready(function($) {
        $("#owl-demo").owlCarousel({
            slideSpeed : 300,
            autoPlay : true,
            navigation : false,
            pagination : false,
            singleItem:true
        });
        $("#owl-demo2").owlCarousel({
            slideSpeed : 300,
            autoPlay : true,
            navigation : false,
            pagination : true,
            singleItem:true
        });
    });
</script>
</body>
</html>
```

adminhome.php

```
<!DOCTYPE html>
<html lang="en-US">
    <head>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0" />
        <title>InstruRental</title>
        <link rel="stylesheet" href="css/components.css">
        <link rel="stylesheet" href="css/respondee.css">
        <link rel="stylesheet" href="owl-carousel/owl.carousel.css">
        <link rel="stylesheet" href="owl-carousel/owl.theme.css">
        <!-- CUSTOM STYLE -->
        <link rel="stylesheet" href="css/template-style.css">
        <link href='http://fonts.googleapis.com/css?family=Open+Sans:400,300,600,700,800&subset=latin,latin-ext' rel='stylesheet' type='text/css'>
        <script type="text/javascript" src="js/jquery-1.8.3.min.js"></script>
        <script type="text/javascript" src="js/jquery-ui.min.js"></script>
        <script type="text/javascript" src="js/modernizr.js"></script>
        <script type="text/javascript" src="js/respondee.js"></script>

    </head>
    <body class="size-1140">
        <!-- TOP NAV WITH LOGO -->

        <?php include('includes/header.php');?>

        <section>
            <!-- CAROUSEL -->
            <div id="carousel">
                <div id="owl-demo" class="owl-carousel owl-theme">
                    <div class="item">
                        
                        <div class="carousel-text">
                            <div class="line">

                                </div>
                            </div>
                        </div>
                    <div class="item">
                        
                        <div class="carousel-text">
                            <div class="line">

                                </div>
                            </div>
                        </div>
                    </div>
                </div>
            </div>
        
```

```
</div>
<div class="item">
    
    <div class="carousel-text">
        <div class="line">

            </div>
        </div>
    </div>
</div>
<!-- FIRST BLOCK -->
<!-- GALLERY -->

</section>
<!-- FOOTER -->
<footer>
    <div class="line">
        <div class="s-12 l-6">
            <p>Copyright 2020, InstruRental
            </p>
        </div>
        <div class="s-12 l-6">
            <p class="right">
                <a class="right" href="#" title="Responsee - lightweight
                responsive framework">All Rights Reserved.</a>
            </p>
        </div>
    </div>
</footer>
<script type="text/javascript" src="owl-carousel/owl.carousel.js"></script>
<script type="text/javascript">
jQuery(document).ready(function($){
    $("#owl-demo").owlCarousel({
        slideSpeed : 300,
        autoPlay : true,
        navigation : false,
        pagination : false,
        singleItem:true
    });
    $("#owl-demo2").owlCarousel({
        slideSpeed : 300,
        autoPlay : true,
        navigation : false,
        pagination : true,
        singleItem:true
    });
});

</script>
</body>
</html>
```

Chapter 6

Conclusion

By completing the project Musical Instrument Rental Shop Management System, the customers can now have a better, more efficient and secure way of renting musical instruments. Customers can now keep track of their order history and payment details. And as for the rental shop, this project has become a very easy way for managing the stock of instruments in their shop, they also have a better way of managing customer and staff information, and a more efficient way of renting out instruments.

The application has been developed using XAMPP technologies. Since PHP and Javascript has been used as the server side and client side development tools respectively, the system is viable for upgradations. MySQL provides enough functionalities and features to accommodate the database even if the volume of data increases enormously. The previously manual system is now fully computerized and ready to be implemented. Thus we can conclude that the goal of this project has been obtained.

Chapter 7

Future Enhancements

The system has been developed with flexibility in mind. The requirement of the company is bound to change as and when new operations are included. Keeping in view advancements that are being made in technology it is necessary that the system be able to cope up with the changes that are bound to happen.

So, in today's world of mobile technology the software "Musical Instrument Rental shop management system" if integrated with the mobile will be an added advantage. The mobile users will get instant alerts from this site. The software if we create a mobile app or an alert system for more interaction with the user and also widening the reach of the system to its users.

The system entitled "Musical Instrument Rental shop management system" provides maximum user interaction and flexibility. The system users stored procedures on the database. This also can be enhanced in the future.

Chapter 8

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