System Analysis and Design

Project Paper

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Date: December 15, 1999.

East West University

Mohakhali, Dhaka
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Mr. Pijush K. Paul
Associate Professor
East West University

Reference: Letter of Transmittal

Dear Sir,

It gave us immense pleasure in presenting herewith the report paper, which was assigned to us as partial fulfillment of the MIS 402 report. Preparing this report give us the opportunity to have an insight view on *'System Analysis & Design'* of an organization. An attempt has been made in this report to analyze and design a system. We have tried our best to fulfill the requirements of this report.

This requirement was very much valuable to us to gain experience from practical field and we are grateful to you for providing us this opportunity of gaining such practical experience.

We must mention here that we are extremely grateful to you for your valuable guidance, tiresome effort and constant attention as and when required in accomplishing this report.

We will be pleased to answer any sort of query think necessary as now and when needed.

Thanking you,

Sincerely yours,

Sultana Afsari

Afroza Kabir

Rabeya Khandkar

A. K. Mazhharul Islam

Md. Emdadul Haque

Acknowledgement

We would like to thank Mr. Pijush K. Paul, Associate Professor of the Department of the Business Administration for giving us his valuable time and guidance in preparing this report on **"*System Analysis & Design*"**.

We would further like to show our gratitude to all the employees of '**Prodigy Computer Solutions**' for their support and, especially Mr. Munir, managing director of Prodigy for his valuable assistance.

Executive Summary

The purpose of conducting the study was to fulfill the partial requirement of the course on **_System Analysis & Design_**.

The systems analyst acts as an interface between the client, who has a need for new computer systems, and the programmer, who has the technical skills to produce such programs.

The `_Prodigy Computer Solutions_` was among the few companies in Bangladesh that conduct a large sale of hardware in the beginning of the 1998.

The company has several sections such as hardware selling, software developing, web page developing and provides computer training among the general people.

The _'Prodigy Computer Solutions'_ is now concentrating in the field of software developing and web page developing rather then selling hardware. Since hardware business is very competitive but less cost effective so, they are designing many demo for several software and taking preparation to launch that software in near future.

Table of contents

Part – 2

Introduction

2.1 Introduction

2.1.1 Origin of the Report:

Today a person's education is incomplete without computer knowledge. This is why being business student we have to study *'Management Information System'* to make ourselves ready for automated environment. So, under the title **MIS 402** we are studying "**System Analysis and Design**" course which provide us the knowledge of designing a full-automated system. As B.B.A. program required a lot of practical knowledge to make the education effective, the theoretical knowledge of *"Management Information System'* is not enough for the professional B.B.A. program. With this view we were assigned to design a system on a specific organization. We have chosen a computer hardware selling and software development firm "*Prodigy Computer Solutions"* to acquire first hand experience of a real system design. These studies have three purposes:

- To facilitate the comparison between theoretical and practical knowledge.
- To gather knowledge of designing a real system.
- To get ourselves acquainted with the real life organizational activities.

2.1.2 Scope of the report:

'Prodigy computer Solutions' deals with almost every sector of the computer business. The scope of this report is to highlight the importance of computer hardware selling procedure, run by 'Prodigy' and how effectively it is being carried out. The following picture can easily show the scope of this report:
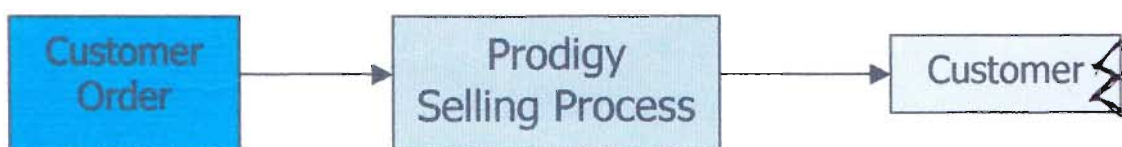
Picture: Scope of the report

2.1.3 Methodology:

Information for the report has been obtained both from primary and secondary sources. In conducting the study we have followed an exploratory approach and in allocating and analyzing data we have followed deductive approach:

- This report is based on primary data collected through interviews.
- Secondary data from various sources were also collected.
- Books from EWU Library were consulted to clarify the understanding.
- The information thus collected from various sources was first organized and then analyzes to draw conclusion.

2.1.4 Limitations:

While conducting the study and preparing the report, we were constrained by some limitations, which influenced the preparation of the report. Some of these principal limitations are listed below:

- For a vast and complicated field like "System Analysis and Design", such short time was a major drawback, for which significant aspects were overlooked .
- Some limitations might have arisen due to lack of proper communication with the organization personnel and personal judgements.

Also time constraint on our part, because in this semester we were in constant pressure. We tried our best to manage the time to get on interviews and data collection. Despite all these limitations, we have given the best of our efforts and tried to make the report as informative and as comprehensive as possible.

Part – 3

Company Profile

3.1 Company Profile

3.1.1 Background of the Company:

Todays `*Prodigy Computer Solutions'* made its entry in the computer world as *kriss* at 26th may, 1997. Before they used to sell and provide services for hardware maintenance. Later on hardware business become very competitive as many new hardware companies came into view. Then they started developing software and office management packages. After that they opened a new section of hardware training. The training program is highly organized. It is practical rather then theoretical. Each batch contains 8 to 10 Students and every student are given a computer to support their training. Every students is monitor well to find out weather they are learning properly or not. So far 15 batches have been completed their training from `*Prodigy Computer Solutions'*. The duration of training program is 3 months and after every 3 months training program is offered to people.

At the beginning of the 1998 `*Prodigy Computer Solutions'* started computer hardware clone assembly at a full speed. In this business their supplier or secondary client was *Flora, Global Brand, NCR* (National Computer Resources). *Prodigy* boost up to assembling and software developing business. At the middle of the 1999 *Prodigy* started developing web pages and software demo. Their future vision is to reach the top of hardware and software business of a high-tech industry.

3.1.2 Administrative Structure of the Company:

Prodigy is a limited company with 5 directors. One of them looks after management, 2 of them looks after marketing and two others look after technical sides of the business. They are the directors as well as permanent employees of the business. They also hired 4 bright computer science students from different universities as part time employee. At the time of web page development they hired 1 or 2 assistant to assist them.

3.1.3 Present Scenario of the Company:

At the initial stage, 3 years back from now *kriss* was not very confident of its success. But today's '*Prodigy Computer Solutions'* is very confident and successful. It also hopes that in the future it would achieve the vision of its mission.

Part – 4

Existing MIS

4.1 Existing MIS

4.1.1 Existing data flow diagram:

Prodigy is now serving its clients with the following data flow diagram which is consist of both physical and logical processes or functions:
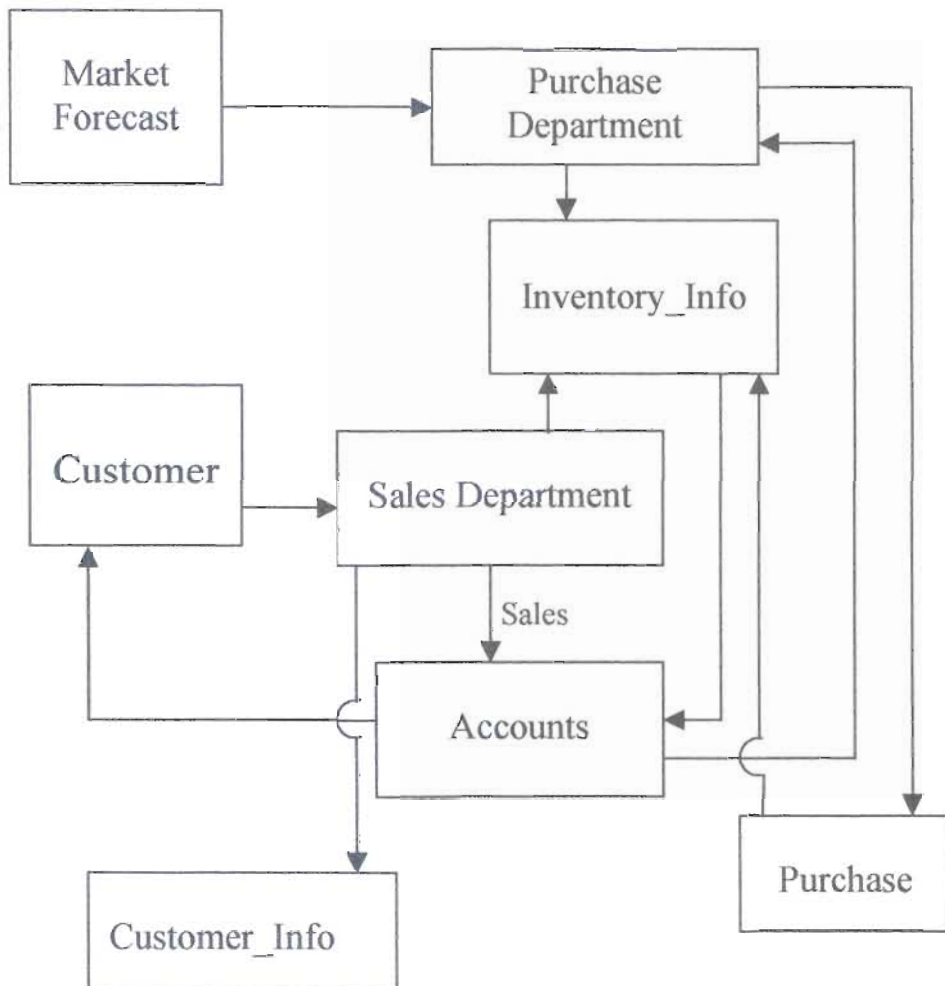
Figure: Existing MIS

Part – 5

Findings

5.1 Findings

5.1.1 Findings from Prodigy's existing MIS:

After analyze the system followed by **Prodigy**, we found some factors that should not be on their business:

- Insecure,
- Limited queries,
- Inventory is controlled manually, and
- Accounts are not linked with database.

Part – 6

Proposed System

6.1 Proposed System

6.1.1 User requirements:

Considering the company's vision and related user's demand we can identify some user requirements which may help them:

- To design a nice looking interface,
- To make process faster,
- Information Processing to be easier,
- Offer a help option in case of new clients,
- Establish security option in modifying and viewing data,
- Create interactive operation in gathering data,
- Make query easier for the user,
- Make total database integrated,
- Remove redundancy,
- Establish relationship for auto update, and
- Make sure of the consistency of the data.

6.1.2 Table design:

Client Info:

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Client ID	Varchar	13	Not null
	Client Name	Text	25	Not null
	Address	Varchar	30	
	Phone	Number	15	
	E-mail	Varchar	35	

Supplier Info:

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Supplier ID	Varchar	13	Not null
	Supplier Name	Text	25	Not null
	Address	Varchar	30	
	Phone	Number	15	
	Fax	Number	15	

Inventory Info:

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Item ID	Varchar	13	Not null
	Item Name	Text	20	
	Price	Currency	10	
	Stock Quantity	Number	10	

Purchase Info:

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Purchase ID	Varchar	13	Not null
	Purchase Date	Date	10	
	Supplier ID	Varchar	13	Not null
	Item ID	Varchar	13	Not null
	Quantity	Number	10	
	Price	Currency	10	

Sales Info:

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Sales ID	Varchar	13	Not null
	Sales Date	Date	10	
	Client ID	Varchar	13	Not null
	Item ID	Varchar	13	Not null
	Quantity	Number	10	
	Price	Currency	10	

6.1.3 Table format:

Client Information Table:

Client ID	Client Name	Address	Phone	Email

Supplier Information Table:

Supplier ID	Supplier Name	Address	Phone	Fax

Inventory Information Table:

Item ID	Item Name	Price	Stock Quantity

Purchase Information Table:

Purchase ID	Purchase Date	Supplier ID	Item ID	Quantity	Price

Sales Information Table:

Sales ID	Sales Date	Client ID	Item ID	Quantity	Price

6.1.4 Entity relationship:

Client Info

Client ID
Client Name
Address
Phone
E-mail

1   ∝

Sales Info

Sales ID
Sales Date
Client ID
Item ID
Quantity
Price

1

1

∝

Inventory Info

Item ID
Item Name
Price
Stock Quantity

∝

Supplier

Supplier ID
Supplier Name
Address
Phone
Fax

1   ∝

Purchase Info

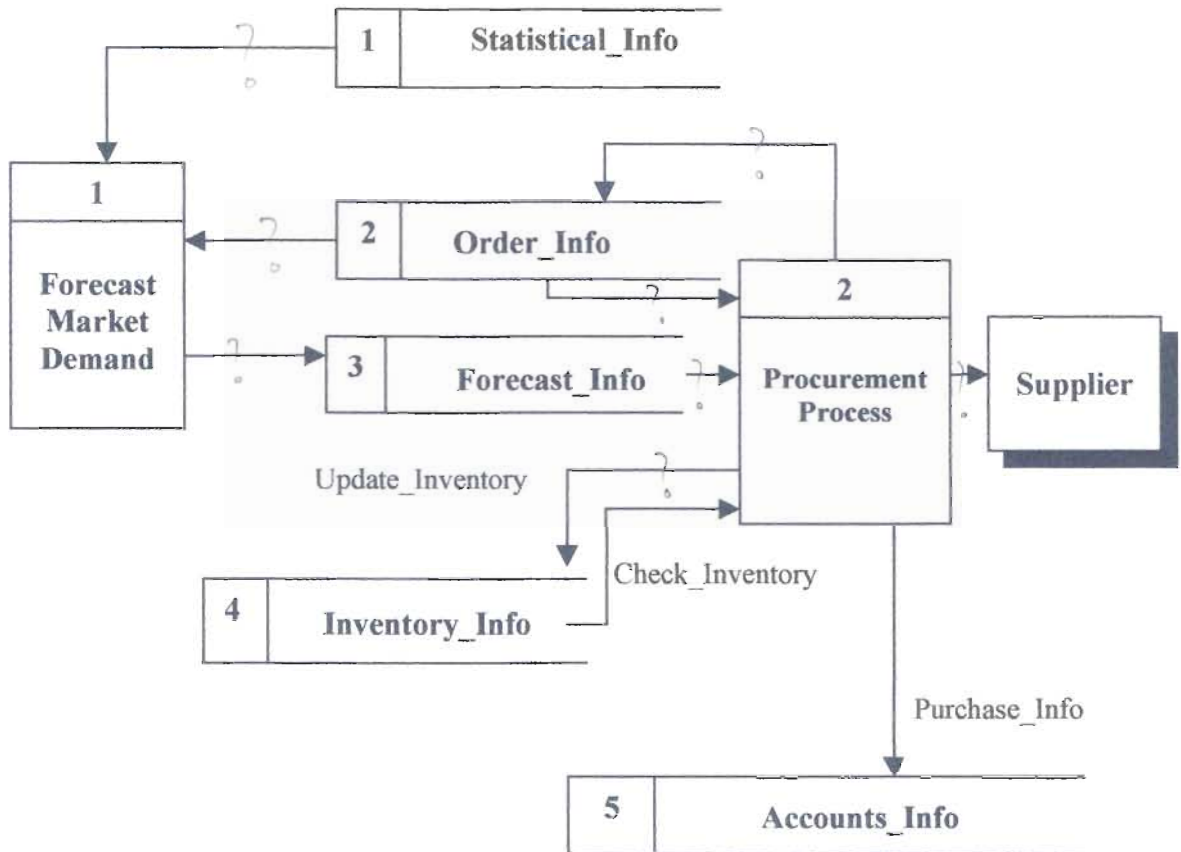Purchase ID
Purchase Date
Supplier ID
Item ID
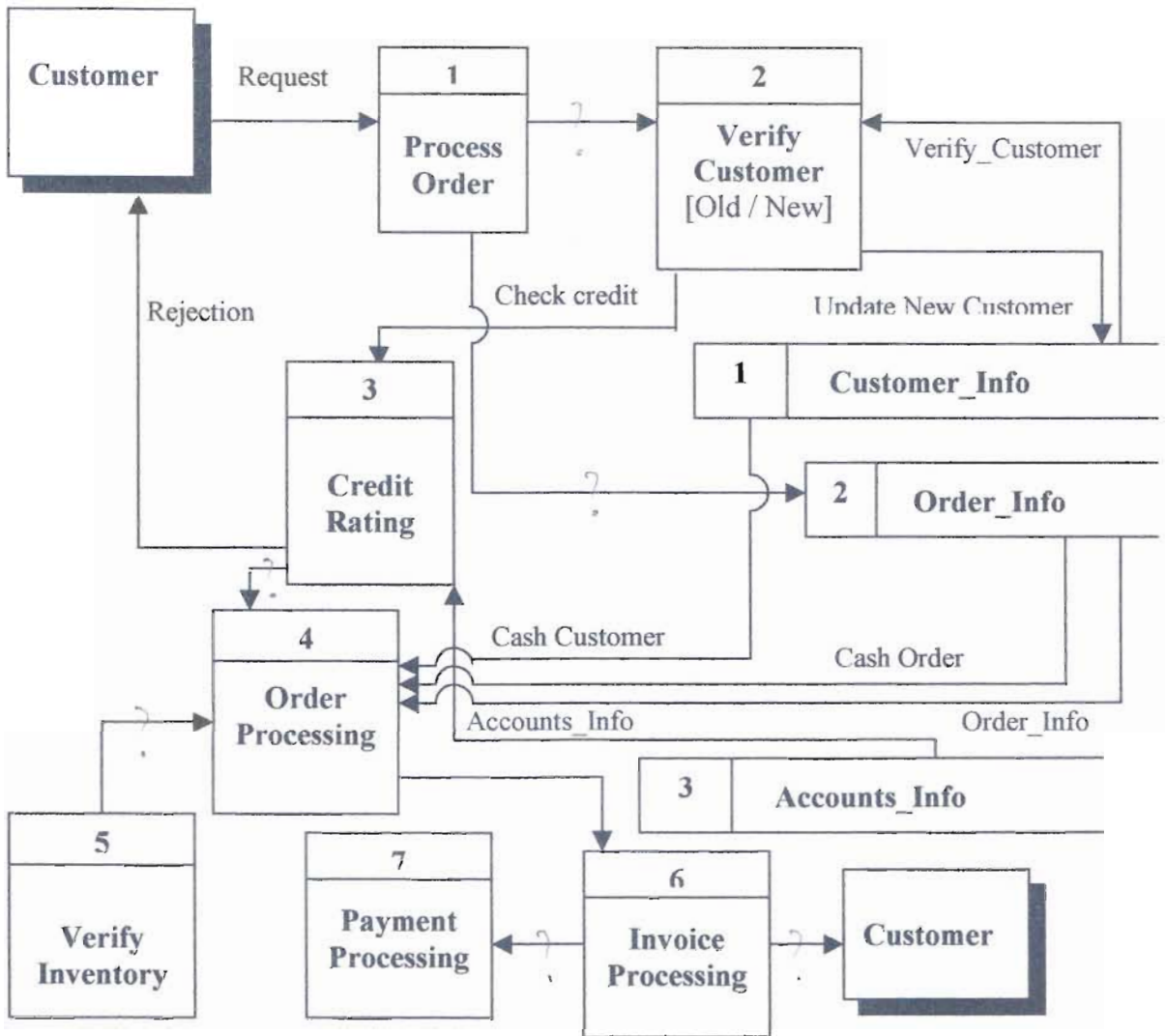Price
Quantity

∝
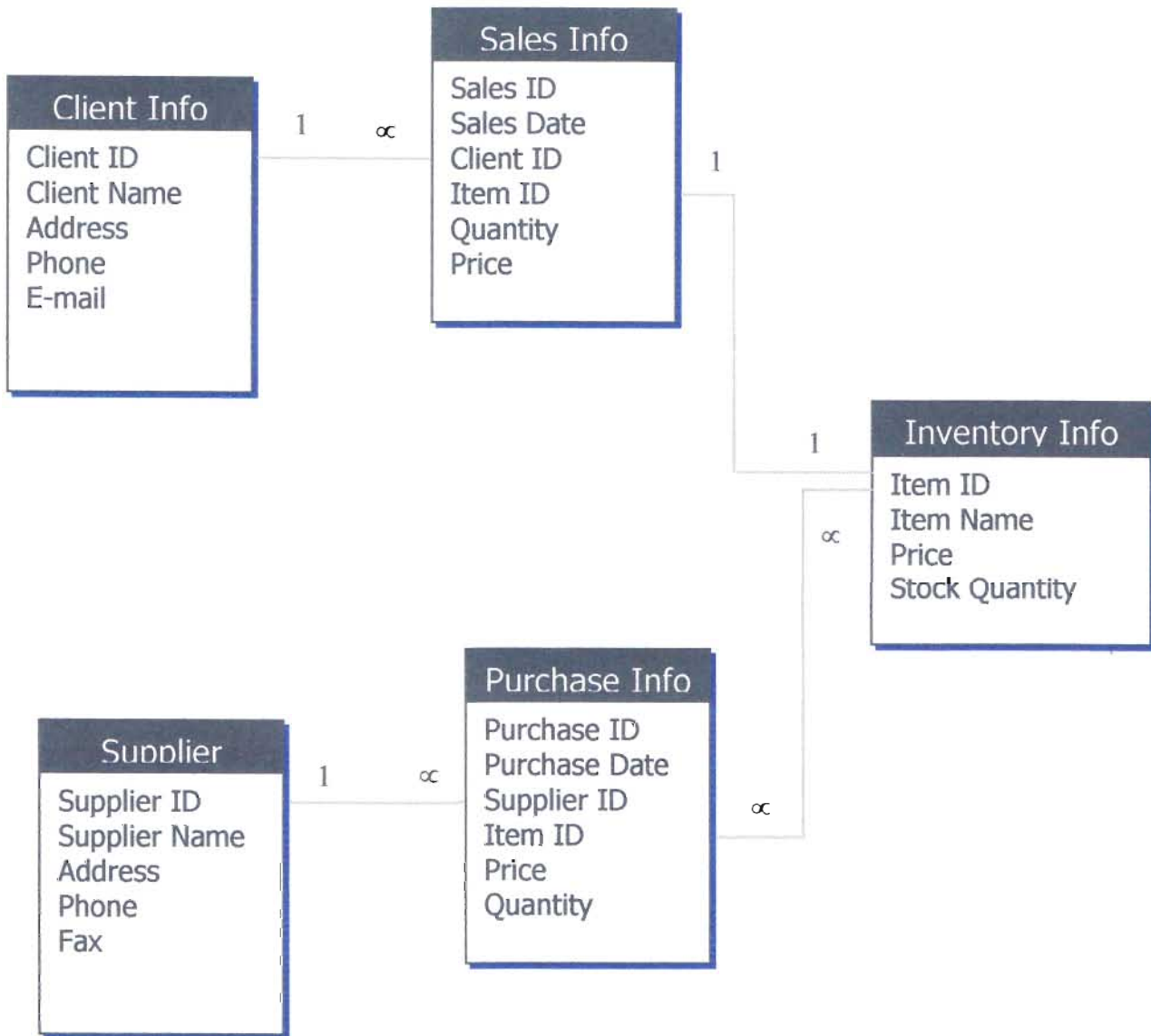
Figure: Entity relationship

6.1.5 Proposed data flow diagram:

Date Flow Diagram - 0 (Market Forecast)

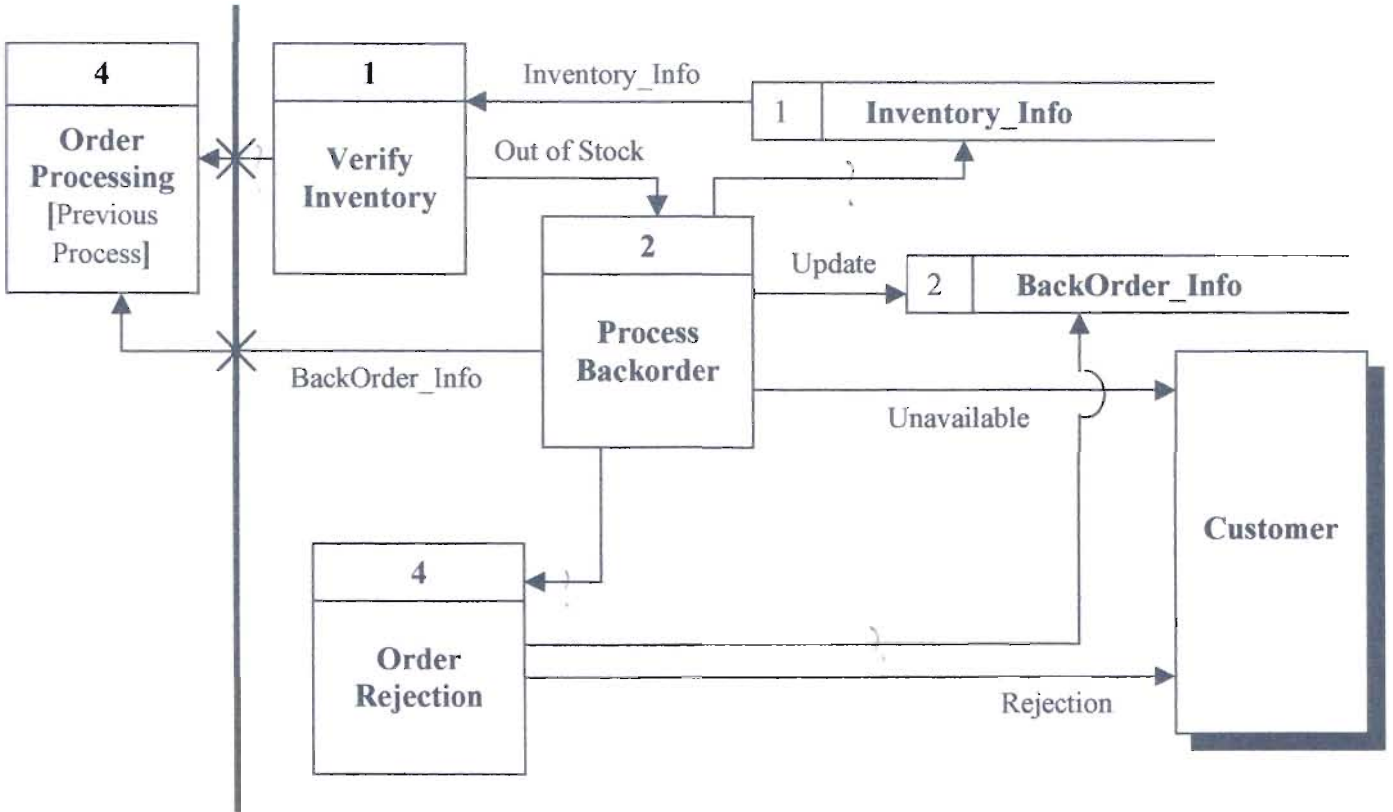## Date Flow Diagram – 1 (Dealing with customers)
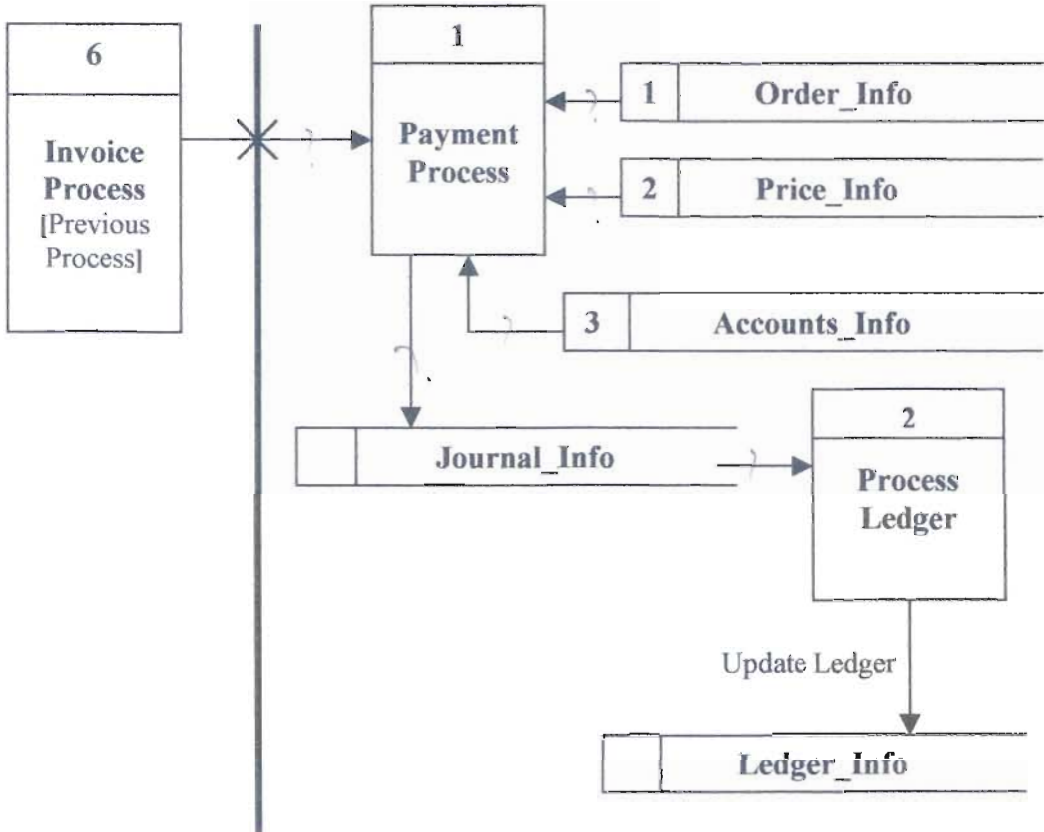
Date Flow Diagram – 2 (Sales)

```
┌──────────────┐   │   ┌──────────────┐        Inventory_Info      ┌───┬──────────────────────┐
│      4       │   │   │      1       │ ◄─────────────────────────  │ 1 │   Inventory_Info     │
├──────────────┤   ╳   ├──────────────┤                            └───┴──────────────────────┘
│    Order     │ ◄─╳─  │    Verify    │     Out of Stock                         ▲
│  Processing  │   │   │  Inventory   │ ────────────────►                        │
│  [Previous   │   │   │              │               ┌──────────────┐           │
│  Process]    │   │   └──────────────┘               │      2       │   Update  ┌───┬──────────────────┐
└──────────────┘   │          ▲                       ├──────────────┤ ────────► │ 2 │  BackOrder_Info  │
        ▲          ╳   BackOrder_Info                 │   Process    │           └───┴──────────────────┘
        │          │                                  │  Backorder   │                      ▲
        └──────────┴──────────────────────────────────┤              │   Unavailable        │     ┌──────────────┐
                                                       └──────────────┘ ───────────────────► │     │              │
                                                              │                                     │   Customer   │
                                            ┌──────────────┐  │                                     │              │
                                            │      4       │ ◄┘                                      │              │
                                            ├──────────────┤                                        │              │
                                            │    Order     │ ─────────────────────────────────────► │              │
                                            │  Rejection   │          Rejection                     └──────────────┘
                                            └──────────────┘
```

Date Flow Diagram –3 (Accounts)

6
Invoice Process [Previous Process]

1
Payment Process

1	**Order_Info**

2	**Price_Info**

3	**Accounts_Info**

	Journal_Info

2
Process Ledger

Update Ledger

	Ledger_Info

6.1.6 Data entry forms:

Client Info Form:

Form Name : Client Info Form
Form use for: Entry/Edit/Query

Table name : Client Info
Primary key : Client ID

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Client ID	Varchar	13	Not null
	Client Name	Text	25	Not null
	Address	Varchar	30	
	Phone	Number	15	
	E-mail	Varchar	35	

Supplier Info Form:

Form Name : Supplier Info Form
Form use for: Entry/Edit/Query

Table name : Supplier Info
Primary key : Supplier ID

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Supplier ID	Varchar	13	Not null
	Supplier Name	Text	25	Not null
	Address	Varchar	30	
	Phone	Number	15	
	Fax	Number	15	

Inventory Info Form:

Form Name : Inventory Info Form
Form use for: Entry/Edit/Query

Table name : Inventory Info
Primary key : Item ID

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Item ID	Varchar	13	Not null
	Item Name	Text	20	
	Price	Currency	10	
	Stock Quantity	Number	10	

Purchase Info Form:

Form Name : Purchase Info Form
Form use for: Entry/Edit/Query

Table name : Purchase Info
Primary key : Purchase ID

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Purchase ID	Varchar	13	Not null
	Purchase Date	Date	10	
	Supplier ID	Varchar	13	Not null
	Item ID	Varchar	13	Not null
	Quantity	Number	10	
	Price	Currency	10	

Sales Info Form:

Form Name : Sales Info Form
Form use for: Entry/Edit/Query

Table name : Sales Info
Primary key : Sales ID

Primary Key	Field Name	Data Type	Date Width	Constraints
P.K.	Sales ID	Varchar	13	Not null
	Sales Date	Date	10	
	Client ID	Varchar	13	Not null
	Item ID	Varchar	13	Not null
	Quantity	Number	10	
	Price	Currency	10	

6.1.7 Data entry screens:

Main Screen

Sub-Screen 1

Sub-Screen 2

Prodigy Computer Solutions

File	Edit	Form	Report	Querie	Help
New	Cut	Client	Sales	List sales	About PCS
Open	Copy	Inventory	Purchase	List purchase	
Save	Past	Purchase		List inventory	
Print	Select all	Supplier		List order	
Send to		Sale		List supplier	
Close					
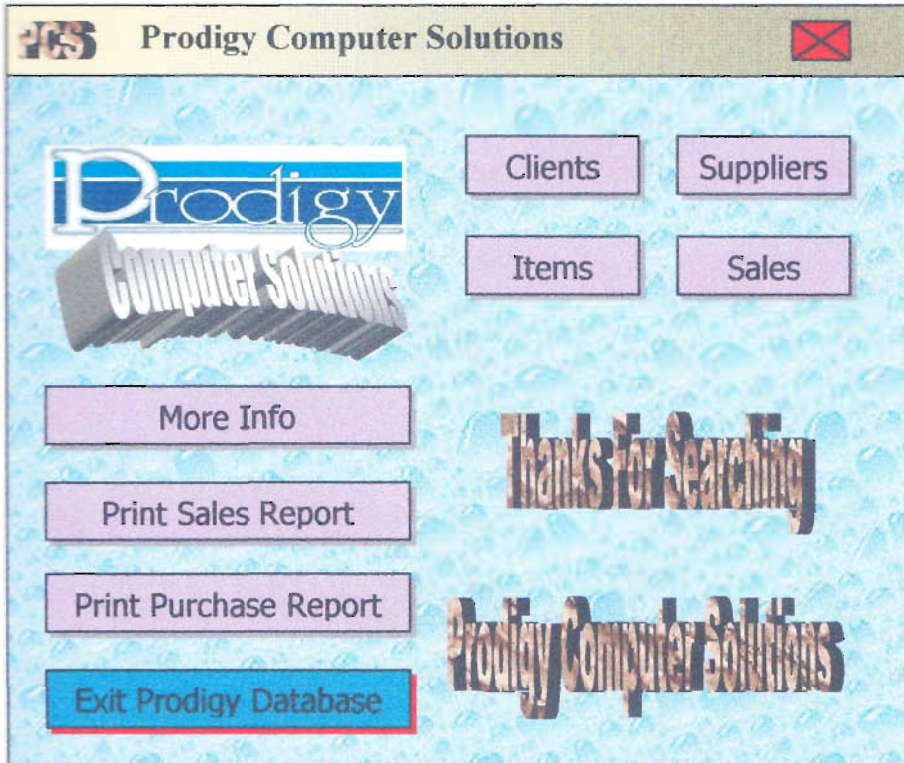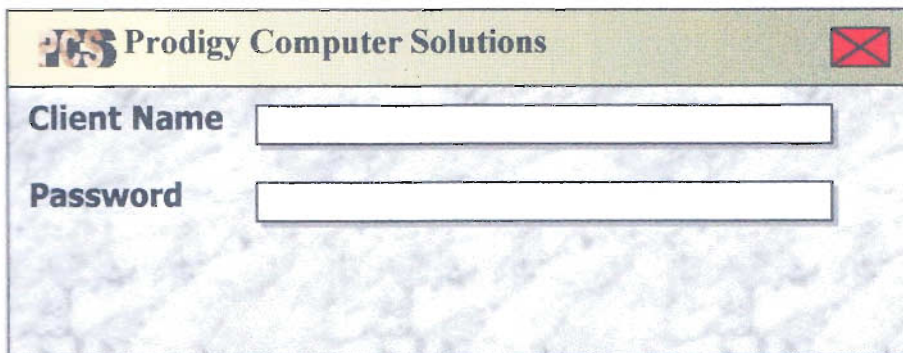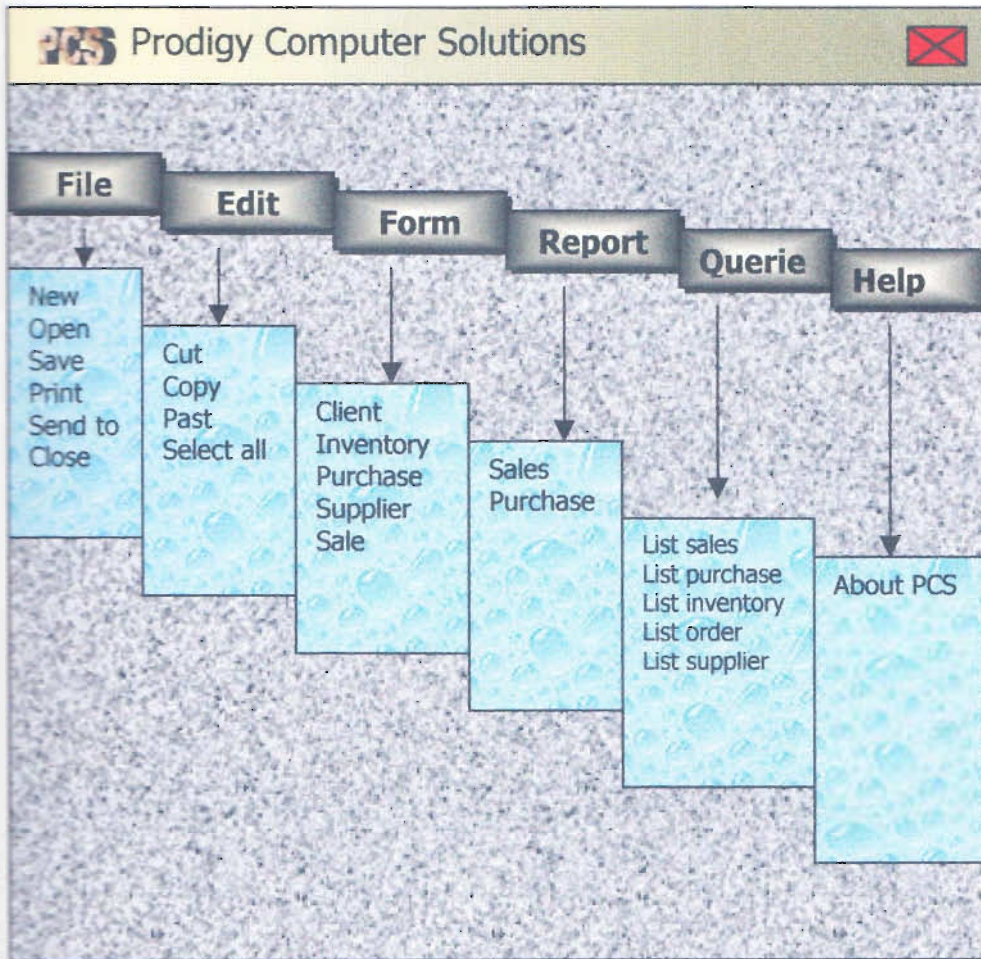
6.1.8 Reports:

Sales report (monthly):

Report no:

Sales Report (Monthly)

Month:

Sales Date:

Sales ID	Client ID	Item ID	Quantity	Price(T.K.)

Signature

Date: DD/MM/YYYY   Page 1 of 1

Purchase report (monthly):

Purchase Report (Monthly)

Month:

Purchase Date:

Sales ID	Client ID	Supplier ID	Quantity	Price(T.K.)

Report no:

Signature _____

Part – 7

Conclusion & Recommendation

7.1 Conclusion:

'System Analysis & Design' is the most complicated side of computer business. Every company must go through *'System Analysis & Design'* for having automation. ***"Prodigy Computer Solutions"*** deals with many clients most effectively since their birth. But with a full automation on their system they can have more profit and can satisfy more clients. *'System Analysis & Design'* is the ultimate vision of every firm to conduct their business effectively.

7.1.1 Recommendation:

Based on the study, the recommendations that can be considered important and necessary are-

- ***Prodigy*** should have an interface to deal with client's needs.
- They should have their own database for make queries more effective and efficient.
- Employees of this firm should realize the whole function of the system.
- Inventory & accounts information must linked to the database.
- For security purpose the database system can help a firm greatly.
- For making 'Information Processing' faster ***Prodigy*** should chose a database system like which we proposed before.

Part – 8

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