



MENOFYIA UNIVERSITY

SYSTEM ANALYSIS & DESIGN
PROJECT

SECOND YEAR

2019-2020

جامعة المنوفية

كلية الحاسبات
والمعلومات

2019-2020

A company to import and sell laptops
and P.C .

No.	Name	Section
1	Abdelhakem abdelnasser awad	6
2	Abdelrahman salah elabd	6
3	Omar magdy elshrief	8
4	Shimaa Mohamed Abdelwahab	6



Planning (Project Plan)

Project Identification

Project Name:

A company to import and sell laptops and P.C .

Current Problem:

- 1- The system doesn't achieve the desired profit.
- 2- The lack of sufficient financial support to develop the system environment.
- 3- Problems that occurs while calculating the budget.
- 4- Difficulty identifying the needs of each device distributor.
- 5- There is difficulty to record data on devices and their exporting countries.

Description about project:

Due to the company's expansion in importing devices from several different countries and the large number of distributors in the country, the company's need for a system that enables it to record the data of devices and the countries that export them as well as distributors and avoid errors in the calculation of the budget increased.

System Request

System Request—Project name	
Project Sponsor:	Manager of the company
Business Need:	<ol style="list-style-type: none">1. Increase the company's sales2. Introducing customers to the company and providing services to them3. Avoid accounting errors in the budget4. Facilitate registration of information about devices, importers, and merchants
Business Requirements:	<ol style="list-style-type: none">1. Increase sales by a percentage agreed upon by the company's accountants2. Preparing a marketing campaign for the company as well as technical support for customers3. Preparing an integrated method for calculating the company's income and expenses4. Providing an easy way to record information about devices, importers, and merchants
Business Value:	<ol style="list-style-type: none">1. Increase sales by at least 20%2. Enabling the company's accountants to enter the accounting data and it is correctly calculated by means of correct mathematical equations.3. Create an introductory page for the company with the possibility of customers communicating with the company's management4. Create electronic tables to store data and eliminate information loss5. it provides an online access to the data.
Special Issues or Constraints:	<ol style="list-style-type: none">1. The site should be easy to handle2. It is in English language only3. It is executed within a maximum period of three months from the date of the contract

Feasibility Analysis

Technical Feasibility

Developers have the ability to set up:

1. An introductory page for the company with providing services to customers
2. Safe databases to store data and avoid information loss
3. An information network to link all the company's systems together

Economic Feasibility

The volume of revenues generated by the system is sufficient to compensate for the expenses:

1. Expenses on the site are estimated at \$ 300
2. Revenue increased by 20% thanks to the system
3. So Total revenues exceed expenses by 15%

Organizational Feasibility

The site will be used by its administrator and company director

1. The site is easy to use, which makes storing and handling data easier for users
2. The users must have sufficient experience to deal with the Internet and the sites

Time Estimation

	Planning	Analysis	Design	Implementation
Standard percentages	15%	20%	35%	30%
Estimated time based on planning time	Actual: 11 h	15 h	20 h	19 h

Tasks Identification

Name of Task	Project identification and feasibility study
Start Date	12/11/2020
End Date	14/11/2020
Person assigned to task	Abdelhakem awad
Priority	High
Resources Needed	Interview
Estimated Time	2 hours
Actual Time	1.5 hours

Name of Task	Interview
Start Date	13/11/2020
End Date	15/11/2020
Person assigned to task	Abdelhakem awd
Priority	High
Resources Needed	-
Estimated Time	3 hours
Actual Time	2 hours

Name of Task	Data flow diagram
Start Date	16/11/2020
End Date	20/11/2020
Person assigned to task	Shimaa Abdelwahab
Priority	High
Resources Needed	1
Estimated Time	9 hours
Actual Time	5 hours

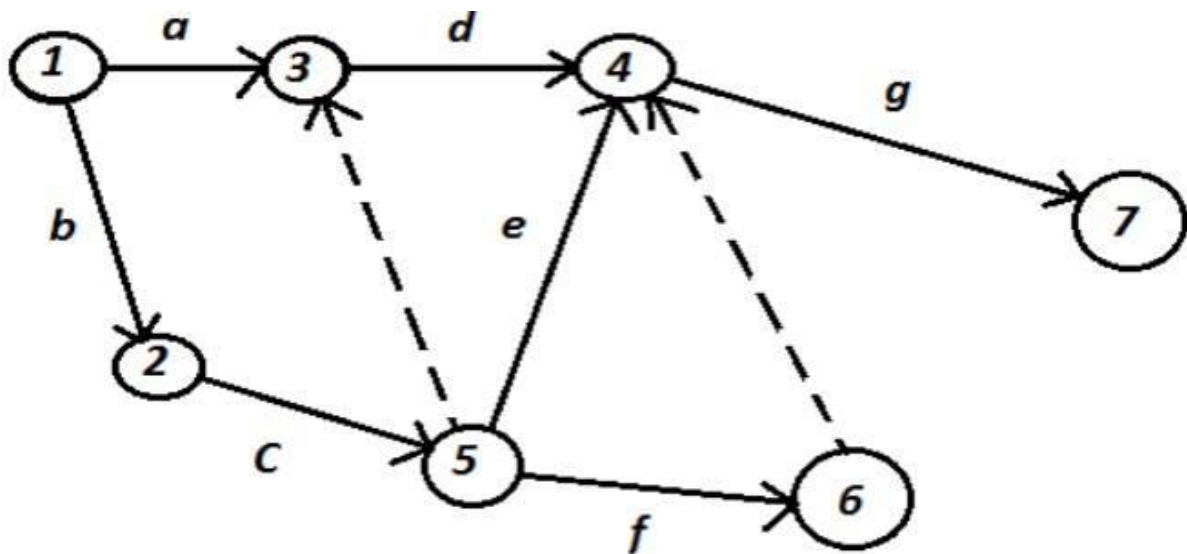
Name of Task	Normalization , ERD
Start Date	24/11/2020
End Date	24/11/2020
Person assigned to task	Abdelrahman alabd
Priority	High
Resources Needed	3
Estimated Time	8 h
Actual Time	6 h

Name of Task	UML
Start Date	24/11/2020
End Date	24/11/2020
Person assigned to task	Abdelrahman salah
Priority	High
Resources Needed	3
Estimated Time	5 hours
Actual Time	3 hours

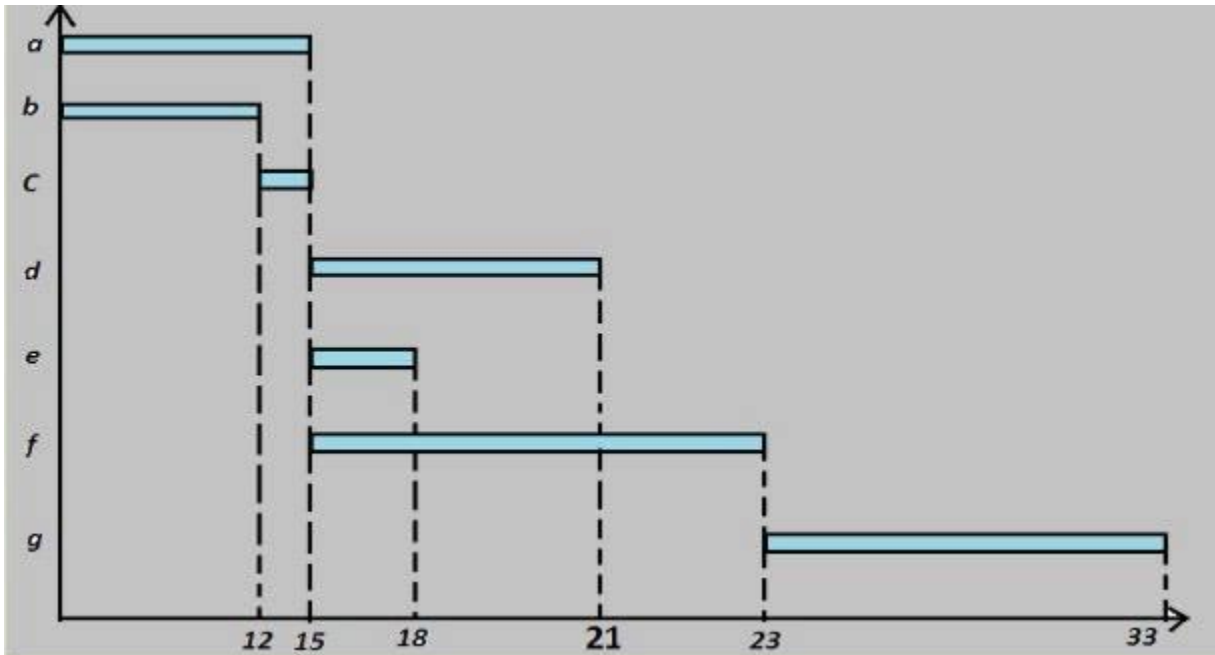
Name of Task	Implementation
Start Date	25/11/2020
End Date	30/11/2020
Person assigned to task	Omar ElShrief
Priority	High
Resources Needed	4 , 5
Estimated Time	20 h
Actual Time	16 h

Pert Chart (MS-Project)

Activity	Issue	Prerecessors	Duration
a	System request	-	15
b	Feasibility	-	12
c	Methodology	B	3
d	Time estimation	a , c	6
e	Task identfy	C	3
f	Pert chart	C	8



Gantt chart (MS-Project)





Analysis (Project Proposal)

Interview

(include questions and answers)

1_ an introduction about your company and what are its specialties ?

_the company collects the material used in assembling laptops and P.C and provides them through the company's website as it allows the customers a lot of options available to choose the things that suit them and at reasonable prices

2_ are the products exported to other countries or only for local traders?

_we deal with many countries a great deal and we rely on the local products a little

3_ the permission to access the system is for the company manager only or for other employees as well ?

_certainly , the entry permit is for the owner of the company only

4_ from which country you import raw materials for manufacturing ?

_ we do business with many countries in importing our products such as : china , japan and many other countries

5_ how much is the employee payroll budget ?

_the salaries of the company's employees vary on basis of the role that each employee in the company performs , but in general the salaries vary between : 5000\$ to 12000\$ in month

6_ do you have fixed or variable monthly income ?

_yes , as I mentioned earlier to you

7_ do you have incentives in your company ? and what percentage ?

_of course there are incentives and its proportions 20%

8_ have you found an application that organizes company management ?

_no but iam doing research for application right now

9_ if there is an application that regulates the budget , do you benefit from it enough ?

_it will definitely help ma a lot in solving many problems

10_ you expect the application to help you to solve your budget problems ?

_yes , I hope that

Interview Reports

Interview Report

Person Interviewed: manger of the company

Interviewer: abdelhakem awad

Purpose of Interview:

- 1.learn about the company's work system
- 2.learn about the countries which the import process through from them
- 3.identify the problems facing the company

Summary of Interview:

- I know about a lot of problems facing the company
- Think about access to the prefect solution to face it these problems
- Suggestion of appropriate solutions to solve problems
- Identify the types of customers need

Open Items:

- Stress of the information I have token from manger
- Make a comprehensive study of each part in the company
- Identify problems and find solutions to her

Detailed Notes: See attached [transcript](#).

Interview Report

Person Interviewed: financial director of the company

Interviewer: shimaa mohamed

Purpose of Interview:

1. identify the budget of his company
2. the size of gains of the company during the year
3. the size of losses of the company

Summary of Interview:

- Balanced company is ranging from 90000\$ to 150000\$
- The company's gains are between ranges 25000\$ to 35000\$
- The size of the company's loss of the month ranges from 5000\$ to 7000\$
- Staff salaries vary moderately

Open Items:

- Work to increase the company's profits
- Marketing the company's products better
- Work to reduce company losses

Detailed Notes: See attached transcript.

Interview Report

Person Interviewed: IT manger

Interviewer: Abdelrahman salah

Purpose of Interview:

1. identify about the quality of the internet in the company
2. learn about the capabilities of the devices in the company
3. know the number od devices that used in company

Summary of Interview:

- Work to improve level of internet
- Speed of the internet same good
- The devices in the company is very old
- Number of devices that used in company is little

Open Items:

- Providing the company with a more efficient internet
- Providing the company with high-potential devices
- Increase the number of devices used in the company

Detailed Notes: See attached transcript.

Questionnaire

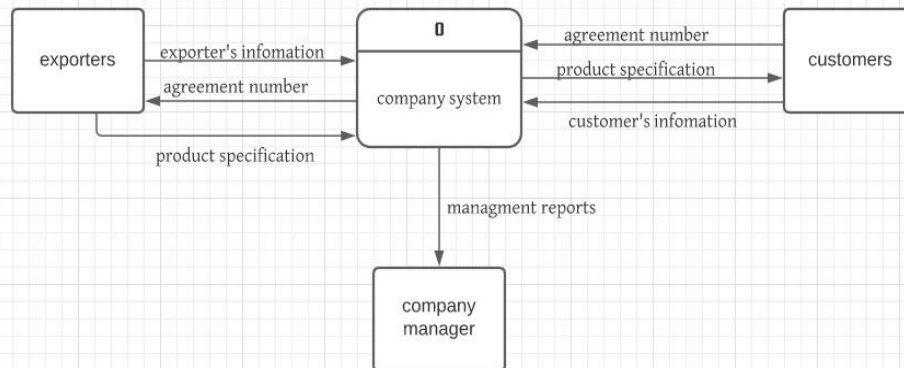
(using Google Forms, you must include questions and statistics)

The image shows two screenshots of a Google Form titled "company for sell laptops and P.C". The form is displayed in a web browser window with the address bar showing "docs.google.com". The browser's taskbar at the bottom includes icons for Windows, search, Edge, File Explorer, Mail, Chrome, and various background applications like Spotify, Teams, and Word. The system tray shows the time as 11:50 and the date as 10/20/2020.

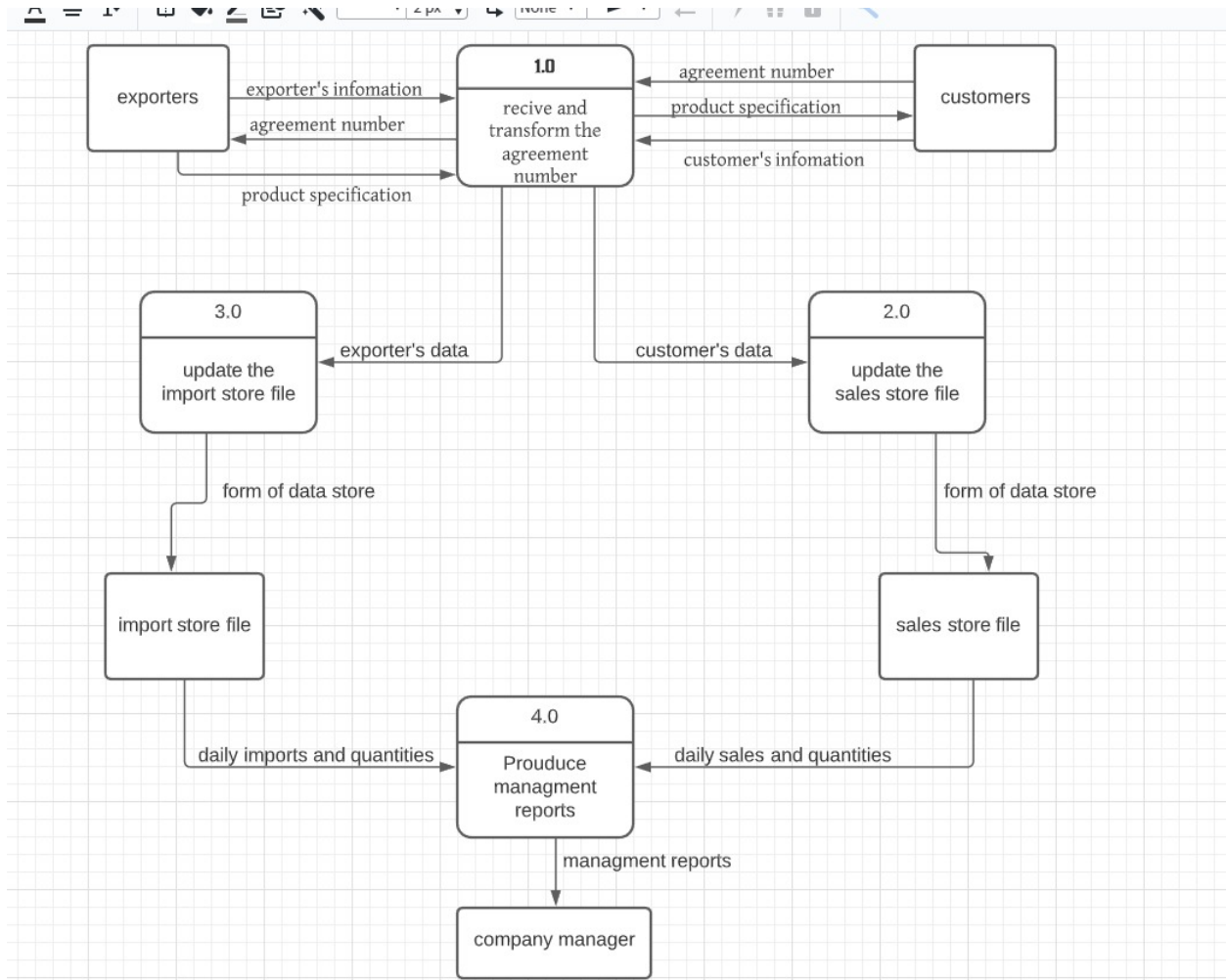
Form Content:

- Title:** company for sell laptops and P.C
- Description:** this interview between group team and the business owner to ask him some questions about company
- Question 1:** An introduction about your company and what are its specialties ?
Type: Text (Short answer)
Label: Your answer
- Question 2:** Name
Type: Text (Short answer)
Label: Your answer
- Question 3:** E_mail
Type: Text (Short answer)
Label: Your answer
- Question 4:** Yes / No
Type: Multiple choice (Radio buttons)
- Question 5:** If there is an application that regulates your , do you benefit from it enough ?
Type: Text (Short answer)
Label: Your answer
- Question 6:** You expect the application to help you solve your budget problems ?
Type: Text (Short answer)
Label: Your answer
- Question 7:** Do you have other addictions?
Type: Text (Short answer)
Label: Your answer
- Submit Button:** Submit

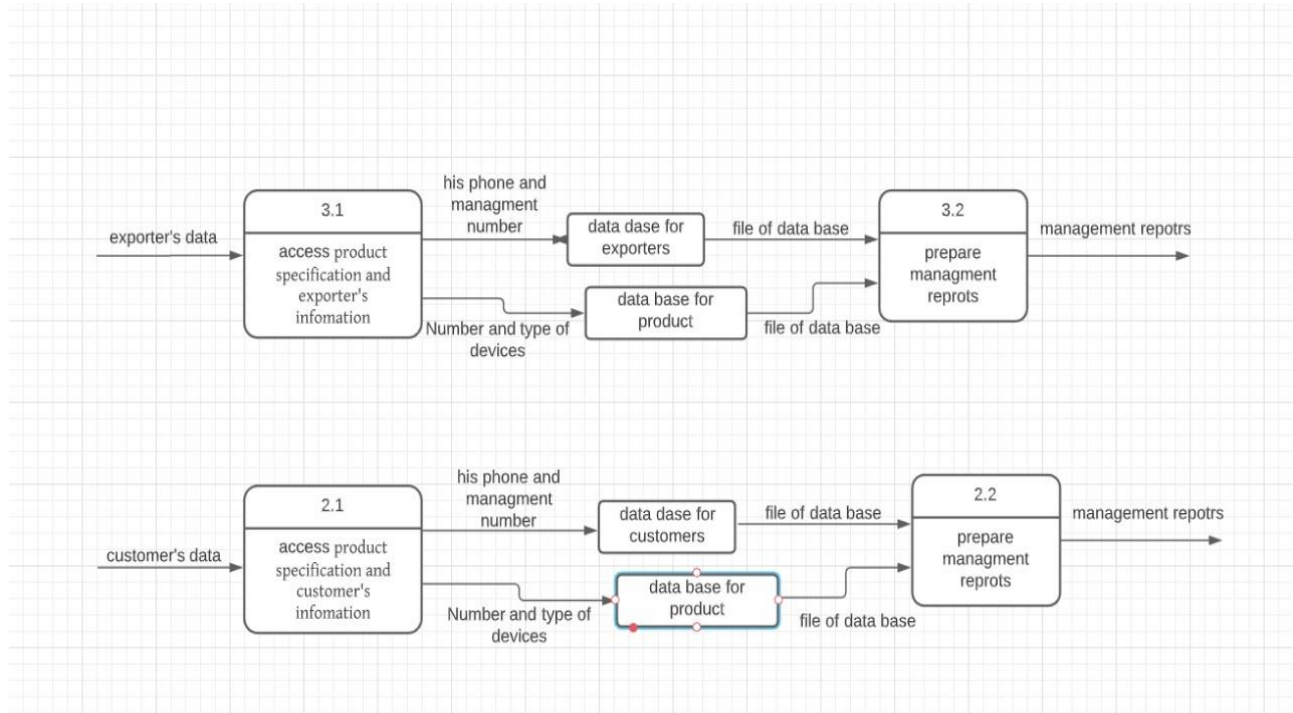
Data Flow Diagram - Context Diagram



Data Flow Diagram – Level/Diagram 0



Data Flow Diagram – Level 1



Data Dictionary

DFD: Data Flow

(1) Description form for Data Flow

ID: 1	
Name (label): Customer's information	
Description: Unchecked information about customers	
Source External entity - Customers	Destination Process 1 - receive and transform the agreement number
Type of Data Flow <input type="checkbox"/> File <input checked="" type="checkbox"/> Screen <input type="checkbox"/> Report <input type="checkbox"/> Form <input type="checkbox"/> Internal	
Data structure Customer data	Volume/time 8/hour
comments: no comments	

ID: 2	
Name (label): exporter's information	
Description: Unchecked information about exporters	
Source External entity - Exporters	Destination Process 2 - receive and transform the agreement number
Type of Data Flow <input type="checkbox"/> File <input checked="" type="checkbox"/> Screen <input type="checkbox"/> Report <input type="checkbox"/> Form <input type="checkbox"/> Internal	
Data structure Exporters data	Volume/time 8/hour
comments:	

ID: 3

Name (label): Customer's data

Description: send customers data and store it in a file

Source process – Customers	Destination Process 3 – update the sales store file
--------------------------------------	---------------------------------------------------------------

Type of Data Flow



File



Screen



Report



Form



Internal

Data structure Customer data	Volume/time 4/hour
----------------------------------------	------------------------------

comments:

Data Flow Description Form

ID: 4

Name (label): Exporter's data

Description: send exporters data and store it in a file

Source process – Exporters	Destination Process 4 – update the emport store file
--------------------------------------	----------------------------------------------------------------

Type of Data Flow



File



Screen



Report



Form



Internal

Data structure Exporter data	Volume/time 4/hour
----------------------------------------	------------------------------

comments:

(1) Data Structure for Data Flow

* **Customer data** = customer name + customer ID + Customer Address
+ (customer Email) + {customer phone } .

* **Exporters data**= exporter name +exporter Id + Exporter Address
+ (Exporter Email) + {Exporter phone}.

* **Customer data** = customer name + customer ID + Customer Address
+ (customer Email) + {customer phone } +
[agreement number] .

- **Data Structure for Data Flow: Structural Record**

- * **Customer name** = first name + (middle name) + last name .

Customer Address = Street + city + state + country .

Customer phone = state code + private number .

- * **Exporter name** = first name + (middle name) + last name .

Exporter Address = Street + city + state + country .

Exporter phone = state code + private number .

- * **Customer agreement** = Customer ID + [0,1].

(2)Data Element for data flow

ID	1
Name	Customer's information
Alias	-
Description	Unchecked information about customers
Length	4
Input Format	9(4)
Output Format	9(4)
Default Value	8/hours
Continuous / Discrete	Continuous
Type	Number
Base / Derived	Derived
Upper Limit	9999
Lower Limit	0000
Discrete	
Comments	No comments

ID	1
Name	exporter's information
Alias	-
Description	Unchecked information about exporters
Length	4
Input Format	9(4)
Output Format	9(4)
Default Value	8/hours
Continuous / Discrete	Continuous
Type	Number
Base / Derived	Derived
Upper Limit	9999
Lower Limit	0000
Discrete	
Comments	No comments

ID	2
Name	Customer's data
Alias	-
Description	Send customer's data and store it in file
Length	20
Input Format	x(20)
Output Format	x(20)
Default Value	4/hours
Continuous / Discrete	Discrete
Type	Alphabetic
Base / Derived	Base
Upper Limit	
Lower Limit	
Discrete	
Comments	No comments

ID	3
Name	exporter's data
Alias	-
Description	Send exporter's data and store it in file
Length	20
Input Format	x(20)
Output Format	x(20)
Default Value	4/hours
Continuous / Discrete	Discrete
Type	Alphabetic
Base / Derived	Base
Upper Limit	
Lower Limit	
Discrete	
Comments	No comments

DFD: Data Store

ID	D1
Name	Sales store file
Alias	Sales database
Description	contains information about early sales in company
File Type	Computer
File Format	Database
Record Size	500
Maximum Records	45000
Average Records	41000
Growth per Year	6%
Data Set	Sales
Data Structure	Sales update
Primary Key	Customer's ID
Secondary Key	Customer's name
Comments	the file is updated as the employee receives the customer's data

ID	D2
Name	Imports
Alias	Imports database
Description	contains information about early imports in company
File Type	Computer
File Format	Database
Record Size	700
Maximum Records	65000
Average Records	96000
Growth per Year	9%
Data Set	Imports
Data Structure	Imports update
Primary Key	Importer's ID
Secondary Key	Importer's name
Comments	the file is updated as the employee receives the Importer's data

Process Specification

- ✓ Note: apply process specification for all project processes

Process Specification Form

Number:

Name:

Description:

Input Data Flow

Output Data Flow

Type of Process



Online



Batch



Manual

Process Logic:



Structured English



Decision Table



Decision Tree

Unresolved Issues:

Normalization

Normal Tables

Merchant table

ID	Name	Phone
1	Mohamed	01022580
2	Omar	01025934
3	Abdo	01485638

M_D table

Merchant_id	Device_id	Quantity
1	5	55
2	3	100
3	6	110

Devices table

ID	Name	count	Original_p	Sell_p
1	Lenovo	41	11500	12000
2	Dell	63	12300	12700
3	Hp	58	9500	1100
4	Acus	41	8750	9500
5	Mis	89	15350	1700
6	Apple	25	25400	30000

Exporters table

ID	Name	phone	country	Device_id
1	Bassam	874526	Emirates	2
2	Mark	854123	America	5
3	Costa	2358	Greece	6
4	Arnold	96352	Sweden	1
5	Adama	741258	England	2
6	Diego	896532	Spain	3
7	Holand	784236	France	4

Tables after 1NF

Merchant table

ID	Name	Phone
1	mohamed	01022580
2	omar	01025934
3	abdo	01485638

M_D table

Merchant_id	Device_id	Quantity
1	5	55
2	3	100
3	6	110

Devices table

ID	Name	count	Original_p	Sell_p
1	Lenovo	41	11500	12000
2	Dell	63	12300	12700
3	Hp	58	9500	1100
4	Acus	41	8750	9500
5	Mis	89	15350	1700
6	Apple	25	25400	30000

Exporters table

ID	Name	phone	country	Device_id
1	Bassam	874526	Emirates	2
2	Mark	854123	America	5
3	Costa	2358	Greece	6
4	Arnold	96352	Sweden	1
5	Adama	741258	England	2
6	Diego	896532	Spain	3
7	Holand	784236	France	4

Tables after 2NF

Merchant table

ID	Name	Phone
1	mohamed	01022580
2	omar	01025934
3	abdo	01485638

M_D table

Merchant_id	Device_id	Quantity
1	5	55
2	3	100
3	6	110

Devices table

ID	Name	count	Original_p	Sell_p
1	Lenovo	41	11500	12000
2	Dell	63	12300	12700
3	Hp	58	9500	1100
4	Acus	41	8750	9500
5	Mis	89	15350	1700
6	Apple	25	25400	30000

Exporters table

ID	Name	phone	country	Device_id
1	Bassam	874526	Emirates	2
2	Mark	854123	America	5
3	Costa	2358	Greece	6
4	Arnold	96352	Sweden	1
5	Adama	741258	England	2
6	Diego	896532	Spain	3
7	Holand	784236	France	4

Tables after 3NF

Merchant table

ID	Name	Phone
1	mohamed	01022580
2	omar	01025934
3	abdo	01485638

M_D table

Merchant_id	Device_id	Quantity
1	5	55
2	3	100
3	6	110

Devices table

ID	Name	count	Original_p	Sell_p
1	Lenovo	41	11500	12000
2	Dell	63	12300	12700
3	Hp	58	9500	1100
4	Acus	41	8750	9500
5	Mis	89	15350	1700
6	Apple	25	25400	30000

Exporters table

ID	Name	phone	country	Device_id
1	Bassam	874526	Emirates	2
2	Mark	854123	America	5
3	Costa	2358	Greece	6
4	Arnold	96352	Sweden	1
5	Adama	741258	England	2
6	Diego	896532	Spain	3
7	Holand	784236	France	4

Entity Relationship Diagram (ERD)

UML – Use Case

UML – Class Diagram

UML – Sequence Diagram



Design (Project Specification)

[A] Architecture Design

1. Operational Requirements

Requirement	
Technical Environment	
System Integration	
Portability	
Maintainability	

2. Performance Requirements

Requirement	
Speed	
Capacity	
Availability and reliability	

3. Security Requirements

Requirement	
System value estimates	
Access control	
Encryption and authentication	
Virus control	

[2] Data storage Design

1. Data storage format:

2. Convert logical ERD to physical ERD:

[3] Program design

- **Convert logical DFD to physical DFD:**

[4] Interface design

1. Use Scenario Development

2. Interface Structure Design

3. Interface Standards Design

(1) Interface Metaphor

(2) Interface Template

4. Interface Design Prototyping

