ASSIGNMENT 1 FRONT SHEET

Qualification	**TEC Level 5 HND Diploma in Computing**		
Unit number and title	**Unit 04: Database Design & Development**		
Submission date		**Date Received 1st submission**	
Re-submission Date		**Date Received 2nd submission**	
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Class	GCH1002	**Assessor name**	Hàn Minh Phương

Student declaration

I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice.

Student's signature	

Grading grid

P1	M1	D1

☼ Summative Feedback:	☼ Resubmission Feedback:

Grade:	Assessor Signature:	Date:
Signature & Date:		

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Chapter 1: Statement of user and system requirements

1. Overview about the problem

As we all know, currently in the business form market is gradually becoming popular and tends to develop strongly. Of course, it is also related to the increasing demand of consumers and the author's business is widely known. And the author wants to expand the business by expanding the space and diversifying accessories, books, ... to attract more customers. And the author's goal is to try to generate more sales each day than the day before. In your opinion, is it effective to use old technology to have a crowded store? The author has recruited a large IT consulting firm with expertise in database design for management systems to handle the above challenge. The database designer must establish the personal information of each customer and employee. Here employees can view both customer and product information. To build a suitable calculation database, the database designer should also set up a list of Products, prices, .. for employees and guests. And when the customer makes a purchase, there will be a detailed invoice. If customers want to sit and read, relax, there is a separate space for customers. All data will be handed over to the kernel and staff will execute and manipulate faster than technology.Requirements of the application

1.1 Business process

At the beginning of a working day, staff will check the goods and arrange them neatly before customers come to buy goods. There are 2 options for customers to buy directly or through the store's fanpage. but direct buying is very well received by people and business development will not be far away when the author has an easy to understand and quick sales management system..... sales management system very easy to understand and simple with staff. With a few moves, the staff knows the customer's name, where, ... as well as the customer can see his information as well as product information.

1.2 Business rules

Staff need to correctly confirm the customer's identity
Confirm the correct product information that the customer has ordered.
Employees need to update product information daily to prevent changes.
Mention the product information and production area to the customer if the customer asks.
Only employees can access and view their own and everyone else's information.

1.3 Requirements

The system must be designed to be simple for the user to use.
Employees must know the information of all customers and products for easy management.

The system will support employees to enter information about products, customers, regions, ...
The system will allow customers to view product list, product information as well as price list.
The price of the product may change by month or year.

Chapter 2: Design the relational database system

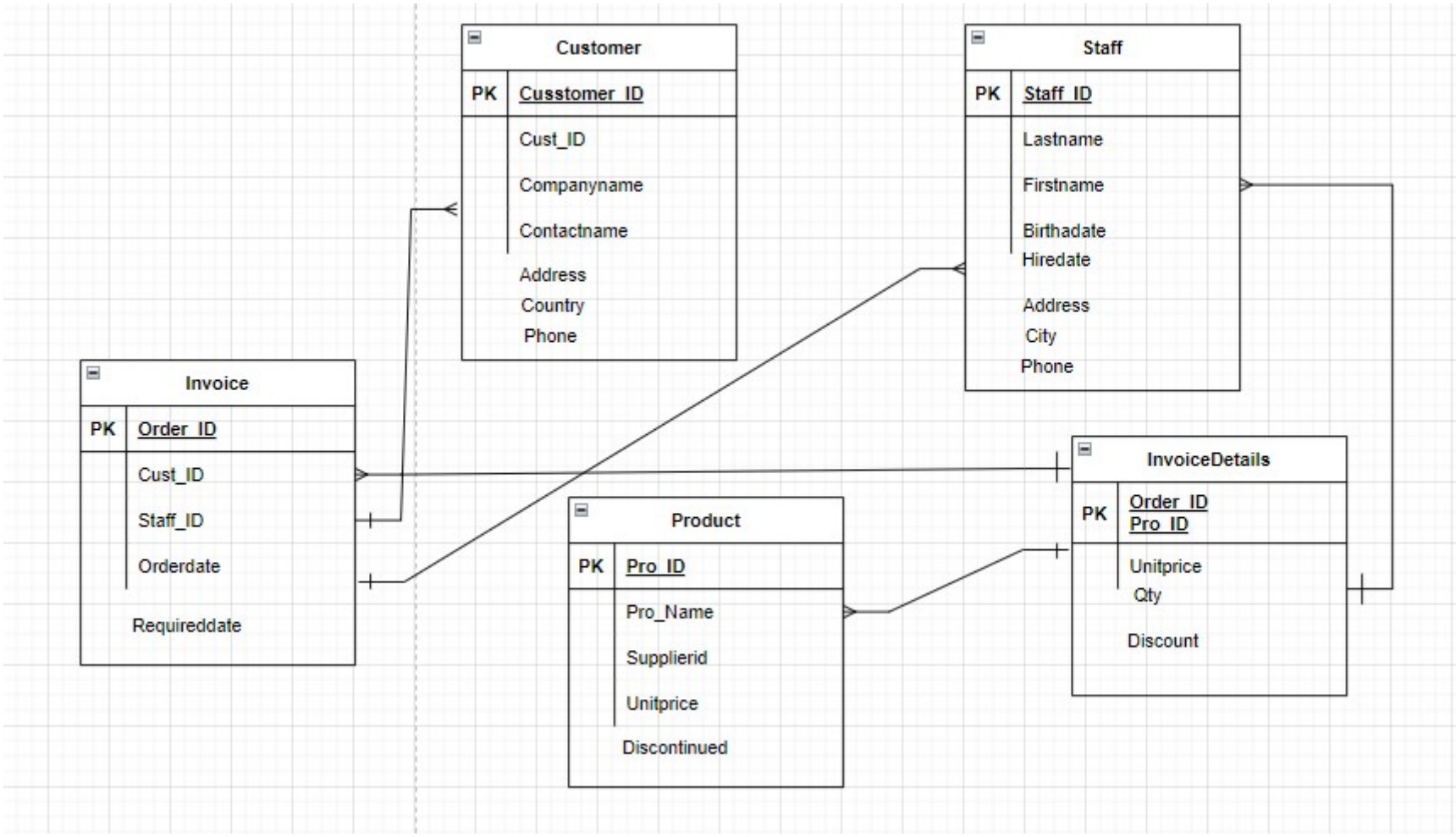
1. Analyse the requiments

   According to the author's wish, for future development, the author would like to expand the store's business model, because there are many different products and a large number of customers and employees. As a result, the author will create the database and divide the system's components so that he can manage them easily and save time.

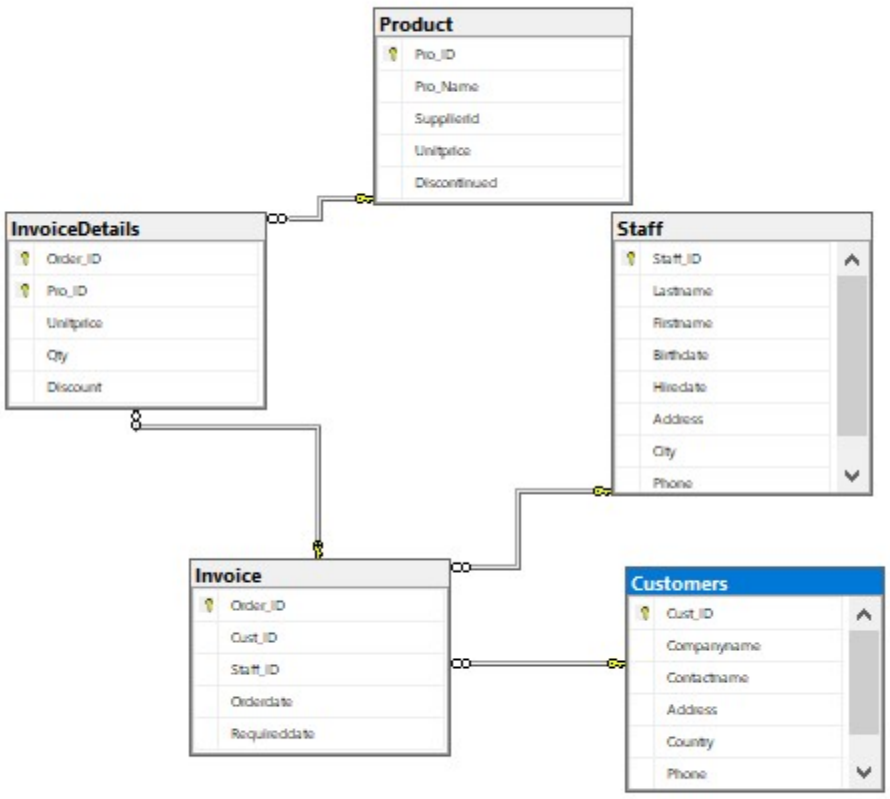
   First, customers and employees must enter personal information into the store system, such as their ID, name, phone number, address, gender, age, and so on. The system will read data and save it automatically, such as customer and employee personal information. Each individual will be assigned a unique id code. The primary key that allows for easy, accurate, and quick identity verification is id. And of course the staff will see product information such as: product code, product name, import price, ... Since a customer can buy many different things, a detailed invoice should be provided to avoid confusion. Information of the invoice details table includes: In_ID, Pro_ID, InD_Quantity, InD_Price, InD_Discount. Of course, it is indispensable for customer information every time they come to buy. Customer information includes: Customer_ID, Customer_Name, Customer_DoB, Customer_Phone, Customer_Address, Customer_Email, Customer_Workingday.

2. Database design with explanations

   2.1.Logiscal design


Customer
PK
Cusstomer_ID
Cust_ID
Companyname
Contactname
Address
Country
Phone
Staff
PK
Staff_ID
Lastname
Firstname
Birthadate
Hiredate
Address
City
Phone
Invoice
PK
Order_ID
Cust_ID
Staff_ID
Orderdate
Requireddate
InvoiceDetails
PK
Order_ID
Pro_ID
Unitprice
Qty
Discount
Product
PK
Pro_ID
Pro_Name
Supplierid
Unitprice
Discontinued

2.2.Physical design



3. List of tables

Column Name	Data type	Allow null
Cust_ID	INT	NOT NULL
Companyname	NVARCHAR	NOT NULL
Contactname	NVARCHAR	NOT NULL
Address	NVARCHAR	NOT NULL
Contry	NVARCHAR	NOT NULL
Phone	NVARCHAR	NOT NULL

Table 1: Customers

Column Name	Data type	Allow null
Staff_ID	NVARCHAR	NOT NULL
Lastname	NVARCHAR	NOT NULL
Firstname	NVARCHAR	NOT NULL
Birthdate	DATETIME	NOT NULL
Hiredate	DATETIME	NOT NULL
Address	NVARCHAR	NOT NULL
City	NVARCHAR	NOT NULL
Phone	NVARCHAR	NOT NULL

Table 2: Staff

Column Name	Data type	Allow null
Pro_ID	NVARCHAR	NOT NULL
Pro_Name	NVARCHAR	NOT NULL
Supplierid	INT	NOT NULL

Unitprice	MONEY	NOT NULL
Discontinued	BIT	NOT NULL

Table 3: Product

Column Name	Data type	Allow null
Order_ID	INT	NOT NULL
Cust_ID	INT	NOT NULL
Staff_ID	NVARCHAR	NOT NULL
Orderdate	DATETIME	NOT NULL
Requireddate	DATETIME	NOT NULL

Table 4: Invoice

Column Name	Data type	Allow null
Order_ID	INT	NOT NULL
Pro_ID	NVARCHAR	NOT NULL
Unitprice	MONEY	NOT NULL
Qty	SMALLINT	NOT NULL
Discount	NUMERIC	NOT NULL

Table 5:InvoiceDetails

Customer

Customer_ID	Customer_Name	Customer_DoB	Customer_Phone	Customer_Address	Customer_Email
C1	Bùi Hương Linh	08/08/2002	0972208243	Tan Lap-Dan Phuong-Ha Noi	linhhuong8802@gmail.com
C2	Bùi Doãn Quân	19/03/2004	0988257208	Tan Lap-Dan Phuong-	quanbui1903@gmail.com

				Ha Noi	
C3	Bùi Thị Liễu	16/03/1993	0977169693	Dong Thap-Dan Phuong-Ha Noi	lieubui1603@gmail.com
C4	Bùi Thị Thúy	25/07/1995	0988325795	Tan Lap-Dan Phuong-Ha Noi	buithuy2507@gmail.com
C5	Bùi Doãn Dũng	15/09/1998	0972435169	Tan Lap-Dan Phuong-Ha Noi	buidung1509@gmail.com

Staff

Staff_ID	Staff_Name	Staff_DoB	Staff_Phone	Staff_Address	Staff_Email	Staff_Workingday
ST1	Nguyễn Văn Hòa	14/01/2002	0974562581	Doan Hung-Phu Tho	hoanguyen1401@gmail.com	05/03/2020
ST2	Phùng Quốc Việt	28/02/2002	0367541523	Pham Van Bach- Cau Giay- Ha Noi	quocviet2802@gmail.com	25/12/2019
ST3	Nguyễn Phương Thảo	02/05/2002	0962208499	Long Bien- Ha Noi	thaonguyen0205@gmail.com	05/08/2019
ST4	Nguyễn Thanh Chúc	20/07/2000	0918590378	130 Xuan Thuy- Cau Giay- Ha Noi	thanhchuc2007@gmail.com	28/08/2019
ST5	Ngô Thanh Vân	11/12/1998	0913758498	Chua Lang-Lang Thuong-Dong Da- Ha Noi	thanhvan1112@gmail.com	11/09/2019

Product

Pro_ID	Pro_Name	Pro_Country	Pro_Unit	Pro_Price
TK1	Pencil	Trung Quoc	cai	5500
TK3	Pencil	Lao	cai	11000
B6	Book	Indo	quyen	54510

B8	Book	Campuchia	quyen	142500
NB2	Notebook	Viet Nam	quyen	12000
NB1	Notebook	Thai Lan	quyen	51100

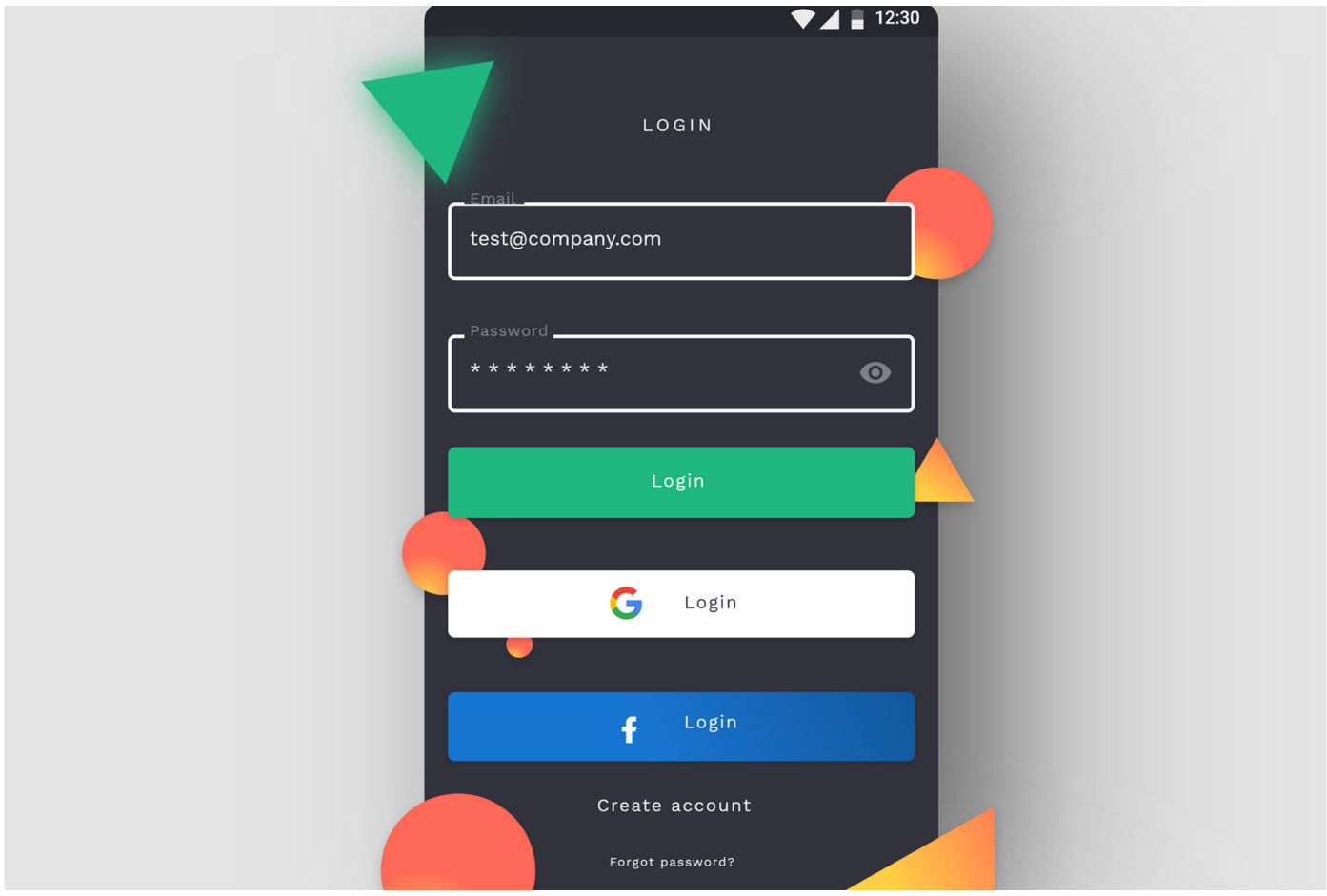
Invoice

In_ID	In_Date	Customer_ID	Staff_ID
1	23/01/2022	C2	ST1
2	20/04/2022	C2	ST1
3	04/02/2022	C3	ST3
4	02/01/2022	C3	ST3
5	05/11/2021	C4	ST2

InvoiceDetails

In_ID	Pro_ID	InD_Quantity	InD_Price	InD_Discount
1	TK1	10	320000	0
1	TK3	15	250000	1
2	B1	3	650000	0
3	NB8	10	280000	0
4	B4	5	920000	0

4. Wireframe of the application

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BALDWIN
DAYS OF AWE
LAUREN FOX
THE BEAUTIFUL BUREAUCRAT
HELEN RAILLIPS
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