Group 2

AI Supplements

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What is AI Supplements?

AI Supplements was started in 2013 by Ian Naber. It is located on Campustown, Ames, Iowa and is pretty close to the Iowa State University Foundation campus. It sells high quality and affordable nutritional supplements as compared to other competitors like GNC or Complete Nutrition.

In addition to that, the business focuses on building strong customer relationship and also maintains a strong presence on social media.

The opening hours is 9am-8pm from Monday to Friday and 10am-7pm in the weekends. People can just walk in and look around, it has very nice environment inside and the guy behind the counter is very friendly and willing to answer any questions you may have about the supplements. Also, the online shopping is also supported and it shipped and delivered fast.

Functioning of the Company

AI Supplements does not have a website of their own, and that is one of the reasons that it makes it harder for them to reach an online demographic. They just have a facebook page that is built in a way that is customer oriented.That way customers can write the reviews, post the pictures and also at the same time, the owner has a system to record all the order information, customer information and all the reviews. There are a lot of advantages of using Facebook page. For example, it can build a long relationship with customer to emerge a group of stable and loyal customers.

In addition to that, since the business is in a collegetown, Facebook is one of the easiest ways to reach out to the students and this is the reason that the majority of the customers are students itself.

System Recommendation

We feel that AI Supplements should build a stronger customer relationship management system. This would be the most beneficial for their business and would help them in penetrating a lot into the audience and do effective business. Simply having a Facebook page and recording reviews is not sufficient enough to run a successful business. One great example of a customer relationship management system is the Zoho CRM that is a web based customer relationship system and it allows businesses to engage in multi-channel support.

Not only this, the company should also have a practical sales system. For example, since the majority of customers are students, AI Supplements should try to minimize the price of the items first and should then try to bring out the deals and coupons. One solution to having an ineffective sales system is using Salesforce. Salesforce Lightning is a cloud based customer relationship management software with packages specifically tailored to small businesses. Lightning Essentials is an out of the box CRM option priced at $25 per user per month for up to five users.

Entities and Attributes

Customers: CustomerID, Customer_Name, Phone_Number

Customers purchase the products from the store.

SQL Syntax:

CREATE TABLE customers_Q

(CustomerID Number NOT NULL CONSTRAINT CustomerQ_PK PRIMARY KEY,

Customer_Name VARCHAR(20),

Phone_Number Number(10));

Employees: EmployeeID, Employee_Name, Hours, Pay, Phone_Numer,

Number_of_Dependents

Employees work for the store.

SQL Syntax:

CREATE TABLE employee_Q

(EmployeeID Number NOT NULL CONSTRAINT EmployeeQ_PK PRIMARY KEY,

Employee_Name VARCHAR2(20),

Hours Number(5), Pay Number(10), Phone_Number Number(10));

Order: OrderID, Product_Amount, Product_ID, Order_Date

Orders are placed by customers at the store.

SQL Syntax:

CREATE TABLE order_Q (

OrderID Number(5) CONSTRAINT OrderQ_PK PRIMARY KEY, Product_Amount Number(5),

ProductID varchar2(5), Order_Date DATE);

Store: StoreID, Contact, Location_Address, Inventory

Stores are the location in which customers shop, employees work, and product is kept

SQL Syntax:

Create table store_Q(

store_ID number(3) constraint storeQ_pk primary key,phone_number (10),

location varchar2(50), inventory varchar2(15));

Supplier: SupplierID, Supplier_Name, Contact_Info

Suppliers send shipments of products to the stores.

SQL Syntax:

Create table supplier_Q (

supplier_ID number(3) constraint supplierQ_pk primary key,

Supplier_Name varchar2(20), Contact_Info number(10));

Product: ProductID, Product_Description, Price, On_Hand, Amount_Ordered

Products are goods that the customers buy

SQL Syntax:

Create table product_Q(

product_ID number(3) constraint productQ_pk primary key, product_desc varchar2(30),

price number(4), on_hand number(4), amount_ordered(4));

Dependent (Weak entity): DependentID, EmployeeID, Dependent_Name, Relationship, Contact_Info

Dependents are people who receive over half of their support from employees

SQL Syntax:

Create table dependent_Q(

dependent_ID number(3) constraint dependentQ_pk primary key,

employee_ID number(3) constraint dependentQ_pk primary key,

dependent_name varchar2(30), relationship varchar2(15), phone_number number(10));

SQL Script To Create and Fill Tables

```
CREATE TABLE customers_Q
(CustomerID Number NOT NULL CONSTRAINT CustomerQ_PK PRIMARY KEY,
Customer_Name VARCHAR2(20),
Phone_Number VARCHAR2(12));
insert into customers_Q values(10, 'Sally Adams', '515-555-555');
insert into customers_Q values(11, 'Ben Johnson', '515-555-7777');
insert into customers_Q values(12, 'Jason Yager', '515-555-8888');
```

```
CREATE TABLE employee_Q
(EmployeeID Number NOT NULL CONSTRAINT EmployeeQ_PK PRIMARY KEY,
Employee_Name VARCHAR2(20),
Hours  Number(5), Pay Number(10), Phone_Number VARCHAR2(12));
insert into employee_Q values(1,'Simon Johnson', 40, 10, '515-555-2233');
insert into employee_Q values(2,'Larry Baller', 40, 10, '515-555-6633');
CREATE TABLE orders_Q (
OrderID Number(5) CONSTRAINT OrderQ_PK PRIMARY KEY, Product_Amount
Number(5),
ProductID varchar2(5), Order_Date DATE);
insert into orders_Q values(1234, 2, 20, '02-AUG-2018');
insert into orders_Q values(1235, 3, 21, '03-AUG-2018');
Create table store_Q(
store_ID number(3) constraint storeQ_pk primary key,phone_number varchar2(12),
location varchar2(50), inventory varchar2(15));
insert into store_Q values(30, '641-555-2323', 'Ames, IA', 'A lot');
Create table supplier_Q (
supplier_ID number(3) constraint supplierQ_pk primary key,
Supplier_Name varchar2(20), Contact_Info varchar2(12));
insert into supplier_Q values(100, 'Big Warehouse', '712-333-4444');
Create table product_Q(
product_ID number(3) constraint productQ_pk primary key, product_desc varchar2(30),
price number(4), on_hand number(4), amount_ordered number(4));
```

```
insert into product_Q values(20, 'Pre Workout', 35, 5, 2);
insert into product_Q values(21, 'Protein', 40, 6, 3);
```

Functions

“List all” functions:

Function1: List all the customer information

```
SQL: SELECT *
        FROM Customer;
```

Function2: List all the employee information

```
SQL: SELECT *
        FROM Employee;
```

Function3: List all the dependent information

```
SQL: SELECT *
        FROM Dependent;
```

Function4: List all the store information

```
SQL: SELECT *
        FROM Store;
```

Function5: List all the order information

SQL: SELECT *

FROM Order;

Function6: List all the product information

SQL: SELECT *

FROM Product;

Function7: List all the supplier information

SQL: SELECT *

FROM Supplier;

Basic functions:

Function1: Count how many customer information we have stored:

SQL: SELECT COUNT(CustomerID)

FROM Customer;

Function2: Find out the product with the highest price.

SQL: SELECT Product_ID

FROM Product

WHERE Price = (SELECT MAX())

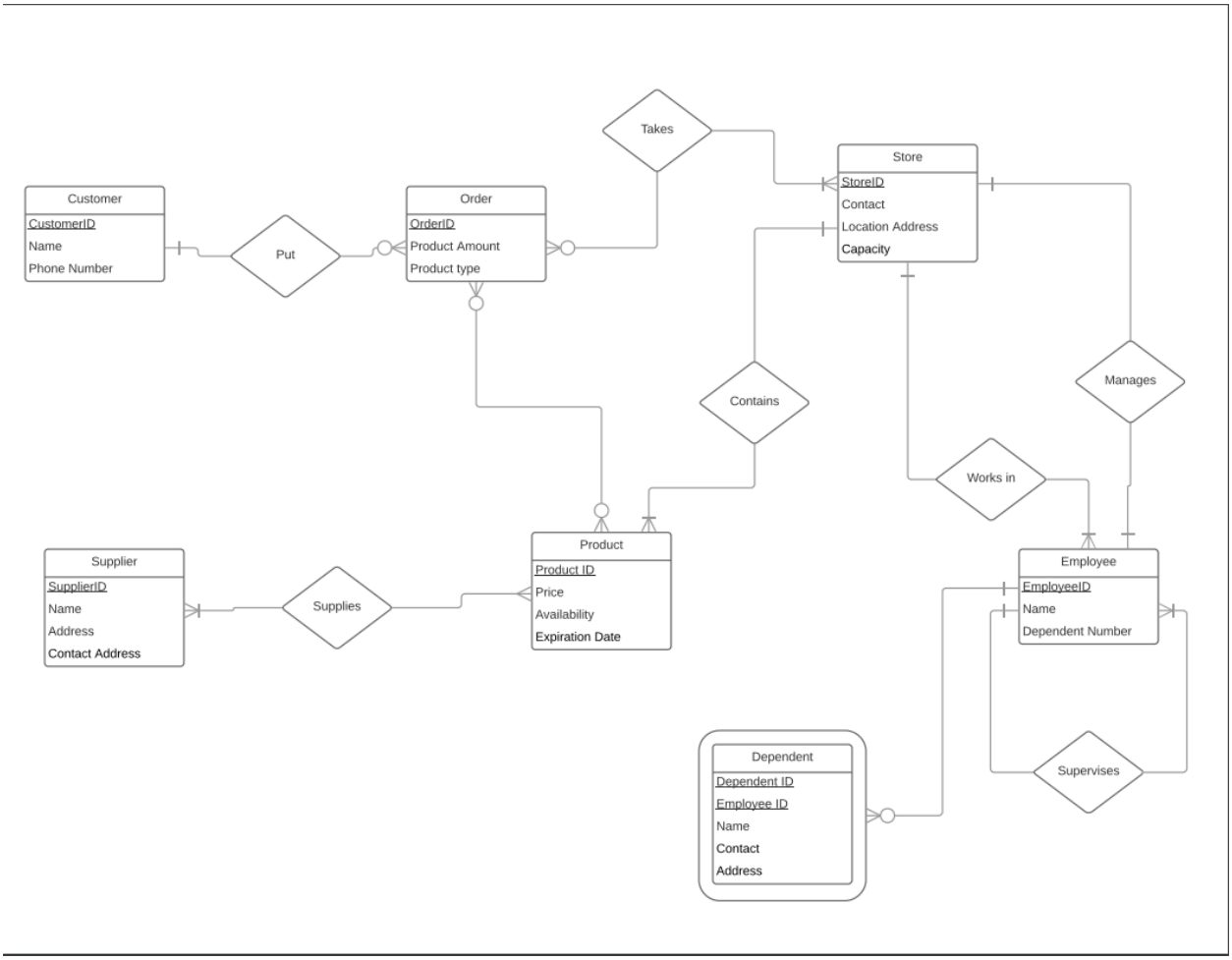
Business Rules and Relationships

A CUSTOMER may have multiple ORDERS. ORDERS must have one CUSTOMER. STORES can take any number of ORDERS. Each ORDER goes to one STORE. An ORDER must have at least one PRODUCT, assuming we have enough in stock. PRODUCTS can be in any number of ORDERS.

PRODUCTS are ordered from at least one SUPPLIER. A SUPPLIER will send at least one PRODUCT. STORES will contain many PRODUCTS. The PRODUCTS will be in one STORE. A STORE employs at least one EMPLOYEE. At least one EMPLOYEE will manage each STORE.

EMPLOYEES may have multiple DEPENDANTS. A DEPENDANT must be linked to an EMPLOYEE. An EMPLOYEE must have a supervisor, which is sometimes itself.

ERD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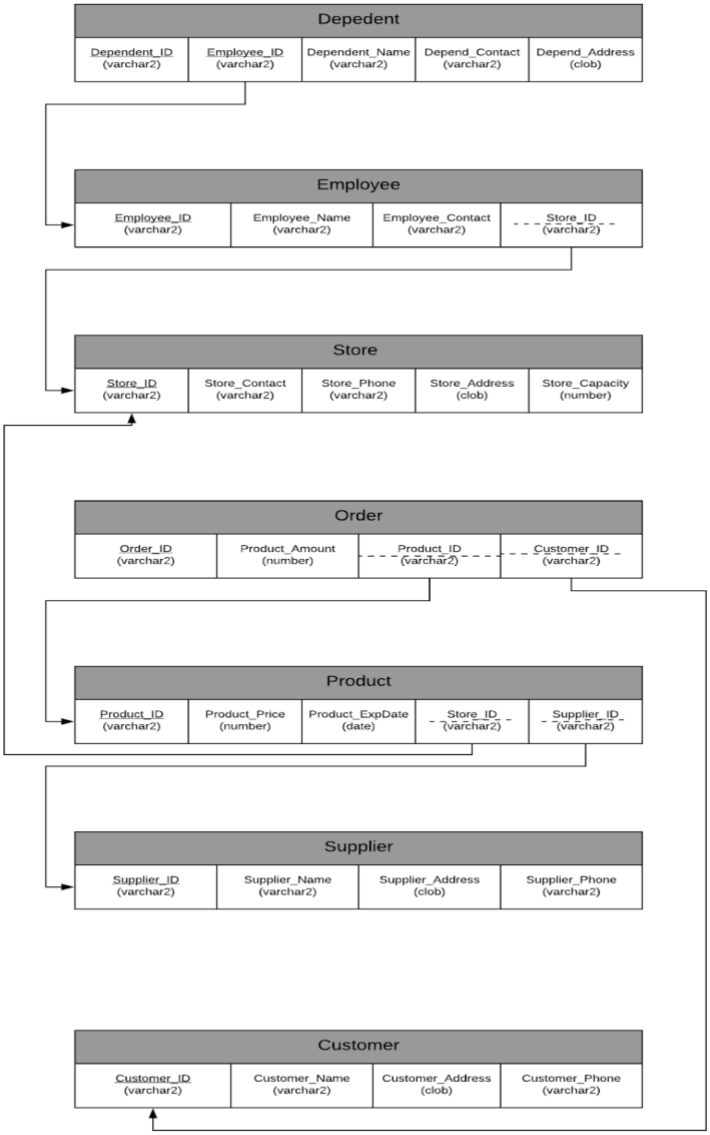
Relational Schema



Sample Query Function Design

Customer_Q:

Report:

Function1: List the Customer Table:

SQL: SELECT *
FROM Customer_Q;

Function1: Count how many customer information we have stored:

SQL: SELECT COUNT(CustomerID)
FROM Customer_Q;

Find:

Function2: Find Customer by name:

SQL: SELECT *
FROM Customer_Q;

Function3: Find Customer by Phone:

SQL: SELECT *
FROM Customer_Q
WHERE Phone_Number = ? ;

Add:

SQL: INSERT INTO Customer_Q
VALUES (New ID, New Name, New Phone);

Remove:

DELETE FROM Customer_Q
WHERE CustomerID = ?;

Modify:

UPDATE Customer_Q
SET Phone_Number TO ???
WHERE CustomerID = ???;

Product_Q:

Report:

Function1: Report all the product information

```
SQL:  SELECT *
      FROM Product;
```

Function5: Report the product prices in ascending order.

```
SQL: SELECT ProductID, Product_Name, Price,
      FROM Product_Q
      ORDER BY Price;
```

Function: Report the product prices in descending order.

```
SQL: SELECT ProductID, Product_Name, Price,
      FROM Product_Q
      ORDER BY Price DESC;
```

Find:

Function2: Find Product with specific description:

```
SQL: SELECT ProductID, Product_Description, Price
     FROM Product_Q
     WHERE ProductID= ?;
```

Function3: Find out the product with the highest price.

```
SQL:  SELECT ProductID, Price
       FROM Product
       WHERE Price = (SELECT MAX(Price) FROM Product);
```

Function4: Find out the product with the lowest price.

```
SQL: SELECT ProductID, Price
      FROM Product_Q
      WHERE Price = (SELECT MIN(Price) FROM Product);
```

Store_Q:

Report:
Function1: Report all the store information
SQL: SELECT *
FROM Store;

Find:
Function2: Find Store by store_ID
SQL: SELECT *
FROM Store
WHERE store_id = ?;

Add:
SQL: INSERT INTO Store_Q
VALUES (New id, Contact, Location, Inventory);

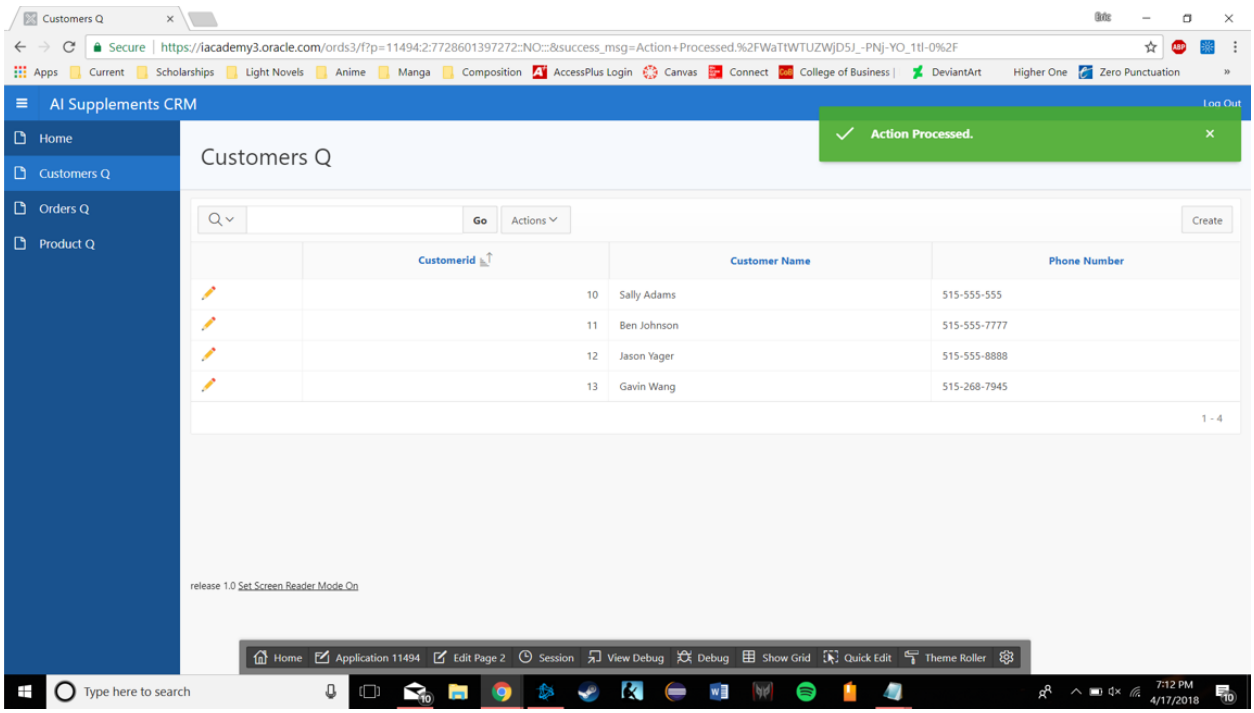
Remove:
DELETE FROM Store_Q
WHERE Store_ID = ?;

Modify:
UPDATE Store_Q
SET Inventory TO ???
WHERE Store_ID = ???;

Supplier_Q:

Report:
Function1: Report all the supplier information
SQL: SELECT *
FROM Supplier_Q;

Function3: Report Supplier numbers we have
SQL: SELECT COUNT(Supplier_ID)
FROM Supplier_Q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Log Out
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Orders Q
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Actions
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Customerid
Customer Name
Phone Number
10 Sally Adams 515-555-555
11 Ben Johnson 515-555-7777
12 Jason Yager 515-555-8888
13 Gavin Wang 515-268-7945
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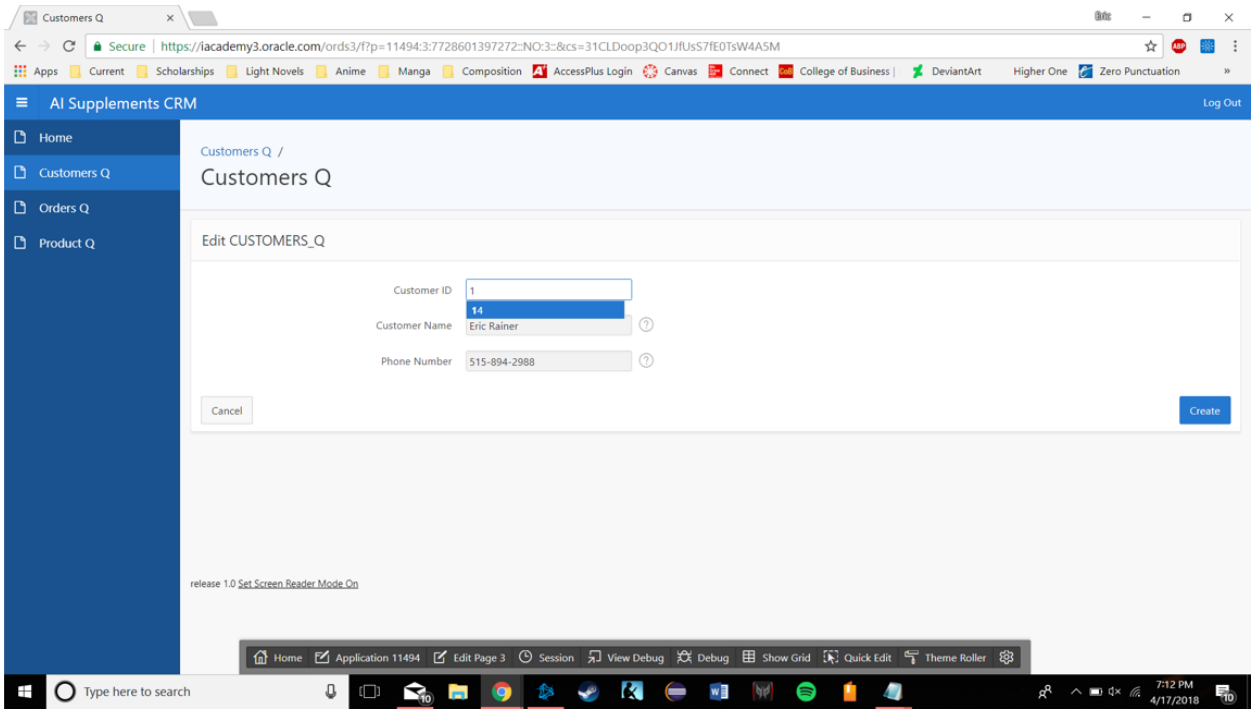
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Customer Name Eric Rainer
Phone Number 515-894-2988
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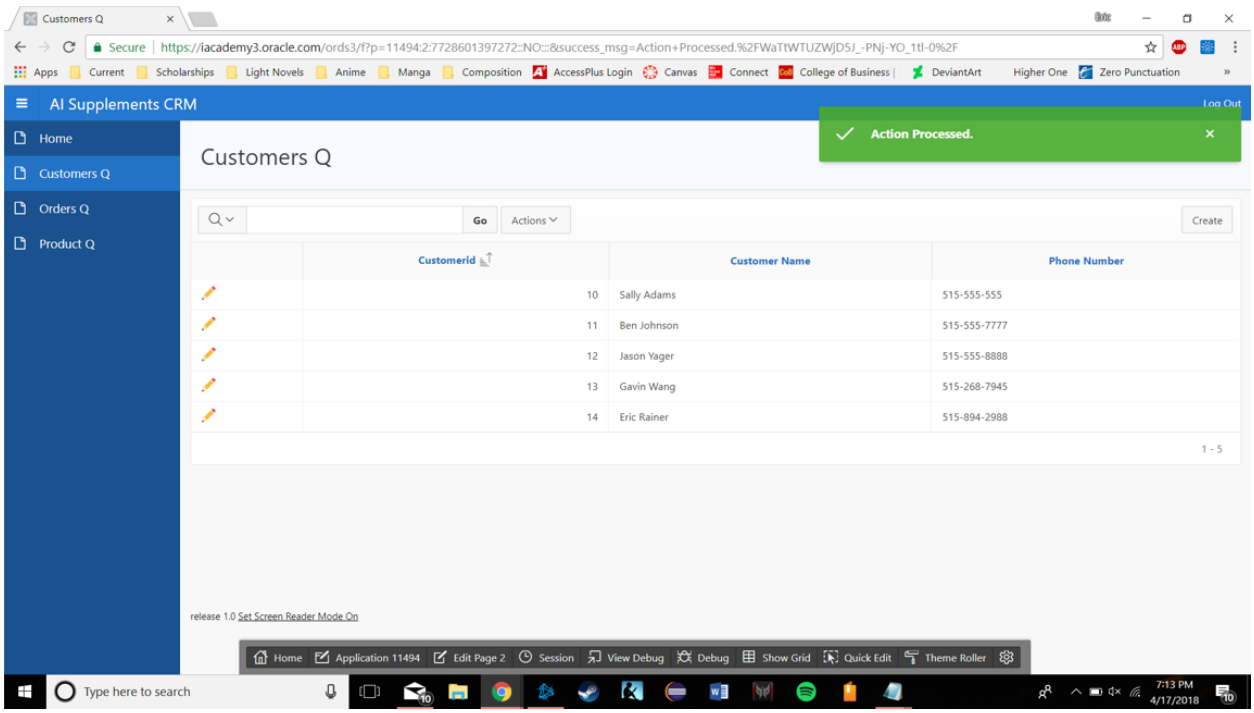
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Log Out
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Orders Q
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Customers Q
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Create
Customerid
Customer Name
Phone Number
10 Sally Adams 515-555-555
11 Ben Johnson 515-555-7777
12 Jason Yager 515-555-8888
13 Gavin Wang 515-268-7945
14 Eric Rainer 515-894-2988
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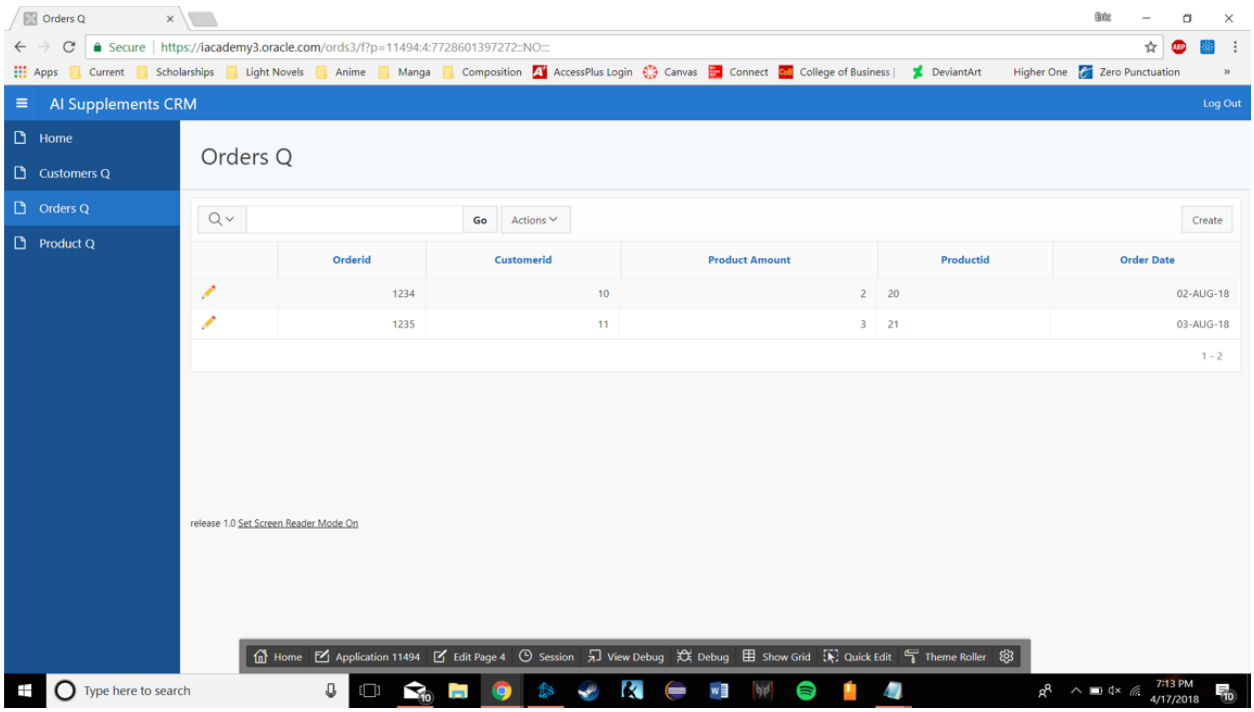
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1235 11 3 21 03-AUG-18
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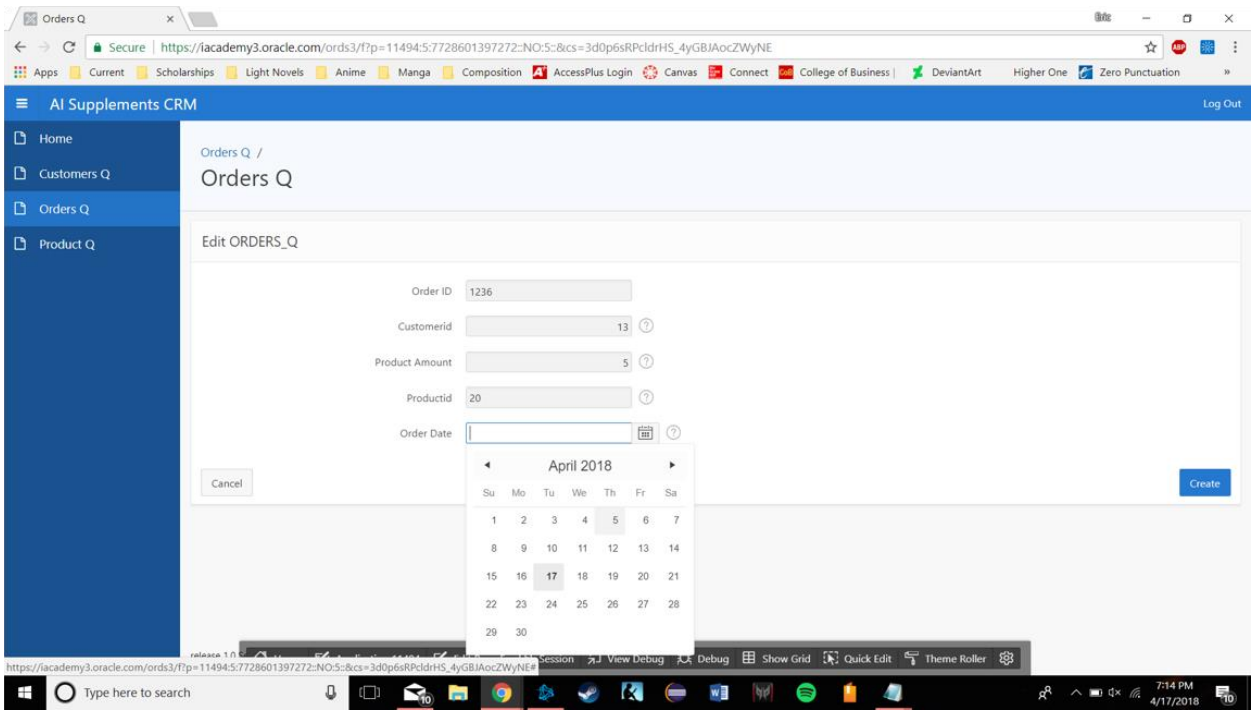
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Customerid 13
Product Amount 5
Productid 20
Order Date
April 2018
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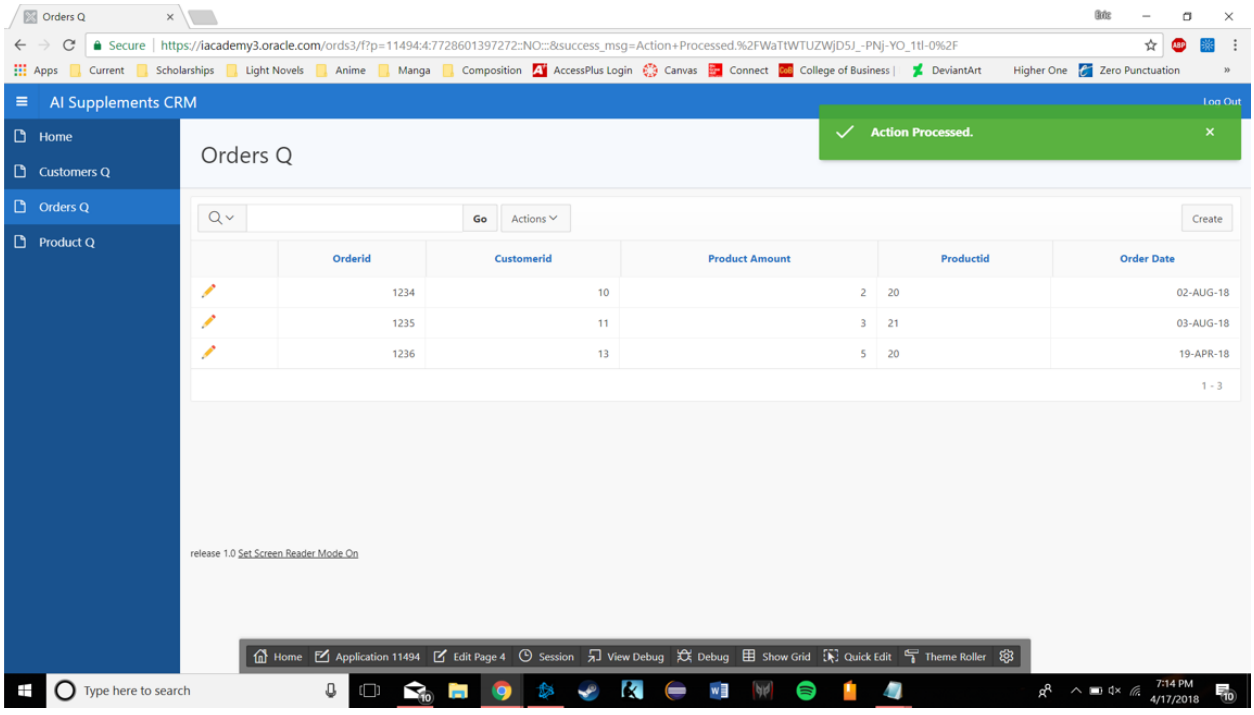
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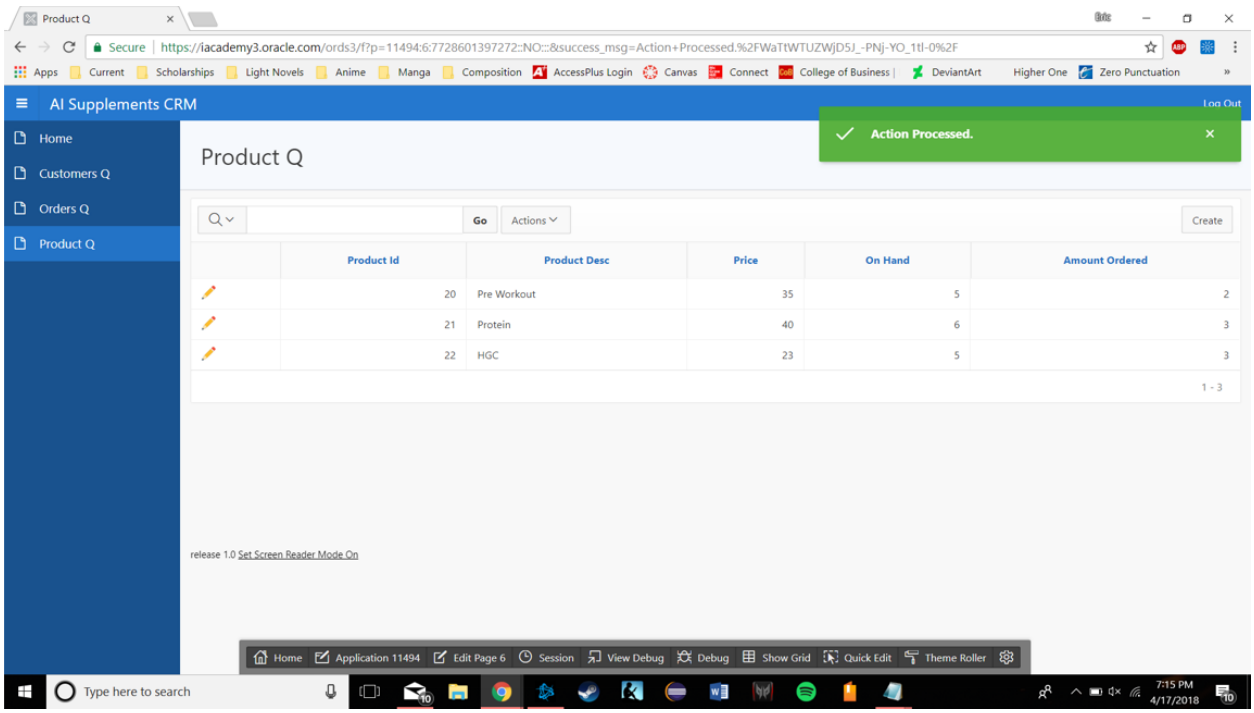
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21 Protein 40 6 3
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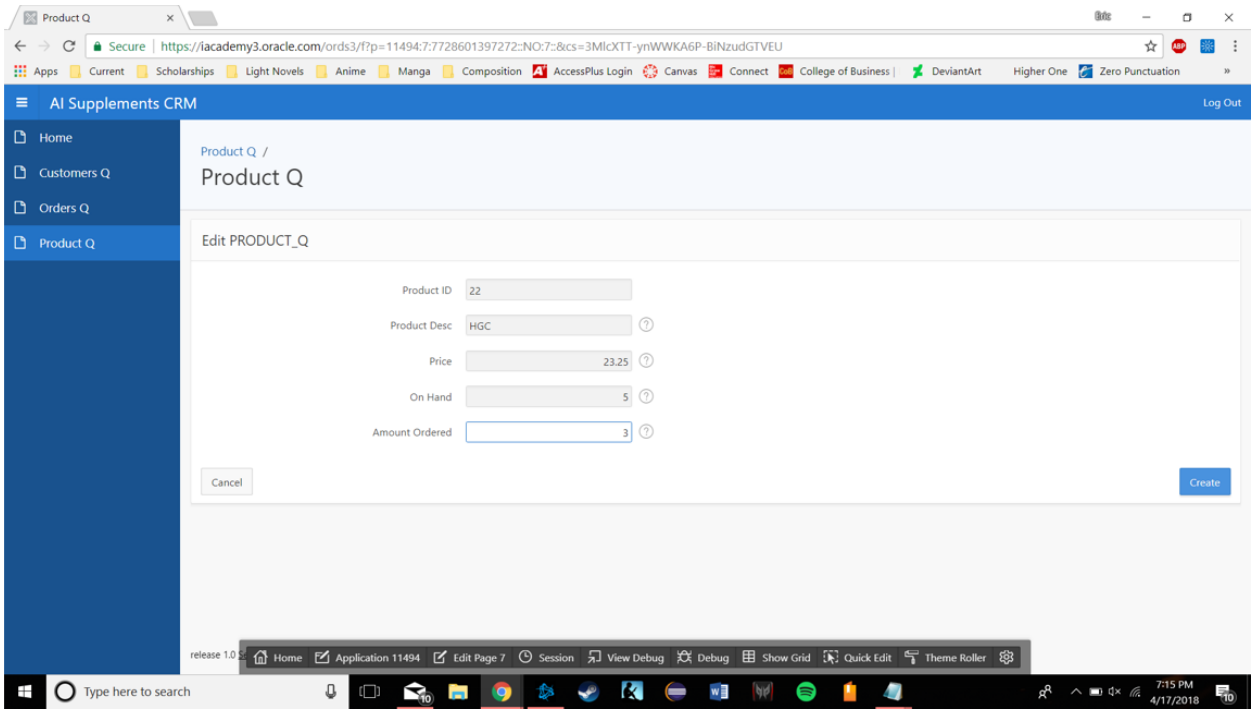
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Conclusion

AI Supplements is a small business based in Ames, Iowa. Since it is a small town business, they do not have any database where they can manage the customer information. The reason behind using database management system is that it makes the job of the store owner very easy. For example, it will be very easy if the customer can come to the shop and just say his first and last name or his phone number and it pulls up all his previous orders. This way it will really become very easy for the customer as well as he doesn't have to remember his previous orders and can simply recall using the database.

Customer loyalty programs are one way of attracting more customers and it has been seen in almost all businesses irrespective of their size, that customer loyalty programs helps in bringing out awareness about the brand. AI Supplements is situated in a college town and the university does not allow them to do marketing on campus. Therefore, customer loyalty program is the only promising efforts that is left to bring more customers. Having a database where in they can store the customer information can really help them in analyzing the customer orders so that they can decide the discounts and can also offer any free stuff based on customers' orders. This will also help in spreading the word about their deals and that will serve the marketing purpose of the company as well. At this point of time, not a lot of people know about the shop and they prefer other brands or stores like the GNC.

Not only this, the database management system will also help in channelizing the store in a way that it helps in running the store better. Not only this, for a smaller business like AI Supplements, it will become very easy if they had a database management system.