Online Grocery Shop Management System

Software Requirements Engineering

Summer 2020-2021

Department of Computer Science

American International University-Bangladesh

Sec: B

Abhijit Bhowmik

Software Requirement Engineering

GROUP MEMBERS

1. Oni S M Yeamin	16-32725-3
2. MD. ZUBAYER HOSSAIN LEON	16-32533-2
3. MD. ASHIKUR RAHMAN	16-32775-3
4. AFNAN SHARIF	17-35902-3

Submission: Sunday, 20th September 2020

References

1. https://www.researchgate.net/publication/220306215_Online_grocery_systems_design_through_task_analysis
2. https://www.inettutor.com/source-code/online-application-for- grocery-management- system-with-mobile-app-support/
3. https://www.researchgate.net/publication/38178214_Online_grocery_shopping_The_influence_of_situational_factors
4. https://www.researchgate.net/publication/326444442_Customer_Relationship_Management_in_Online_Grocery_Stores
5. https://www.researchgate.net/publication/332468451_Assessing_the_impact_of_Online_Grocery_Shopping_in_Mumbai

TABLE OF CONTENTS

1. Introduction

1.1. Purpose

The software Online Grocery is well organized software developed to provide the user to get relief of from the manual system as it is basically automat zed version of management. The software with its capability has ability to computerize the whole system. This system has features that are vital to the user such as people can quickly search for the products and order them without having to physically walk through expansive aisles, they can also save travel expenses and time going to the grocery store etc. Of course it requires data entry to computer, yet this data structured properly can be reused for many different reports.

1.2. Scope

This software basically provides the grocery management. The aim of project, keeping is that this software will have adequate life. The scope of this system can be categorized by the computerization of the following task. The peoples have navigational freedom and easy roam around options in online shopping system. They can Purchase instantly whatever they want without any travel. People can select better product through the online grocery system because they can view all kind of the description about the product. Online Grocery systems freebies should be useful enough and the discount should be noticeable. The Online Grocery system must deliver the product right at Peoples doorsteps and nowhere else. Replacement of the product should be possible in this system.

2. Stakeholder Analysis

2.1. Internal Stakeholder

2.1.1. Primary Stakeholder

2.1.1.1. Employees

2.1.1.2. Manager

2.1.2. Secondary Stakeholder

2.1.2.1. Owner

2.2. External Stakeholder

2.2.1. Primary Stakeholder

2.2.1.1. Customer

3. Specific Requirements

3.1. User Story

3.1.1. As a < customer >, I want < to make an order > so that < I can purchase a product >. **Acceptance criteria** < customer will be able to make the order >

3.1.2. As a < customer >, I want < to cancel my order > so that < I can inform I do not want to purchase the product >. **Acceptance criteria** < customer will be able to cancel the order >

3.1.3. As a < customer >, I want < to select services > so that < I can confirm my wanted service >. **Acceptance criteria** < customer will be able to select the services >

3.1.4. As a < customer >, I want < to select category > so that < I can confirm my wanted product category >. **Acceptance criteria** < customer will be able to select the product category >

3.1.5. As a < customer >, I want < to edit my profile > so that < I can add/delete information >. **Acceptance criteria** < customer will be able to edit profile >

3.1.6. As a < customer >, I want < to give feedback on their products > so that < I can help other people >. **Acceptance criteria** < customer will be able to provide feedback on the products >

3.1.7. As a < employee >, I want < to cancel the customer order > so that < I can inform the product is not available >. **Acceptance criteria** < employee will be able to cancel the product order >

3.1.8. As a < employee >, I want < to edit my profile > so that < I can update information >. **Acceptance criteria** < employee will be able to edit profile >

3.1.9. As a < manager >, I want < to make the customer order > so that < I can confirm customer order >. **Acceptance criteria** < manager will be able to make the customer order >

3.1.10. As a < manager >, I want < to cancel the customer order> so that < I can inform products/product are/is not possible to give >. **Acceptance criteria** < manager will be able to cancel the customer order >

3.1.11. As a < manager >, I want < to see the customer profile > so that < I can take some previous preparation for orders >. **Acceptance criteria** < manager will be able to get access to the customer profile >

3.1.12. As a < manager >, I want < to check the transaction list > so that < I can make sure everything is ok >. **Acceptance criteria** <manager will be able to get the transaction list>

3.1.13. As a < manager >, I want < to update the employee profile > so that < I can add or delete information of the employee >. **Acceptance criteria** < manager will be able to get access to the employee profile >

3.1.14. As a < manager >, I want < to set the employee's working time schedule > so that < I can confirm the employees are working well >. **Acceptance criteria** < manager will be able to set the working time schedule for the employees >

3.1.15. As a < manager >, I want < to see the payroll > so that < I can calculate the revenue of my company >. **Acceptance criteria** < manager will be able to set the working time schedule for the employees >

3.1.16. As a < manager >, I want < to update the products > so that < I can confirm the products are up to date with trend >. **Acceptance criteria** < manager will be able to update the products >

3.1.17. As a < manager >, I want < to update the price of products > so that < I can confirm the products are priced well with customer expectation >. **Acceptance criteria** < manager will be able to update the price of the products >

3.1.18. As a < manager >, I want < to add the discount of the products > so that < I can give discount for the customer >. **Acceptance criteria** < manager will be able to add discount of the services >

4. Priority List

4.1. MoSCoW Prioritization

4.1.1. MUST

4.1.1.1. < Customer > requirement **3.1.1** < to order an order >

4.1.1.2. < Customer > requirement **3.1.2** < to cancel my order >

4.1.1.3. < Customer > requirement **3.1.3** < to select services >

4.1.1.4. < Customer > requirement **3.1.4** < to select category>

4.1.1.5. < Customer > requirement **3.1.5** < to edit my profile >

4.1.1.6. < Employee > requirement **3.1.7** < to cancel the customer order>

4.1.1.7. < Manager > requirement **3.1.9** < to make the customer order>

4.1.1.8. < Manager > requirement **3.1.10** < to cancel the customer order>

4.1.1.9. < Manager > requirement **3.1.11** < to see the customer profile >

4.1.1.10. < Manager > requirement **3.1.12** < to check the transaction list >

4.1.1.11. < Manager > requirement **3.1.13** < to update the employee profile >

4.1.1.12. < Manager > requirement **3.1.14** < to set the employee's working time schedule >

4.1.1.13. < Manager > requirement **3.1.15** < to see the payroll >

4.1.1.14. < Manager > requirement **3.1.16** < to update the products >

4.1.1.15. < Manager > requirement **3.1.17** < to update the price of products >

4.1.2. SHOULD

4.1.2.1. < Customer > requirement **3.1.6** < to give feedback on their products >

4.1.2.2. < Employee > requirement **3.1.8** < to edit my profile >

4.1.2.3. < Manager > requirement **3.1.18** < to add the discount of products >

5. Functional Requirements by Modules

5.1. Manager Panel

5.1.1. MoSCoW Prioritization

5.1.1.1. MUST

5.1.1.1.1. The system will provide the access of **Ordering a product** to the manager.

5.1.1.1.2. The system will provide the access of **employee management** to the manager.

5.1.1.1.3. The system will provide the access of **customer management** to the manager.

5.1.1.1.4. The system will provide the access of **product management** to the manager.

5.1.1.1.5. The system will provide the access of **accounts** to the manager.

5.2. Order Booking and Delivery Scheduling

5.2.1. MoSCoW Prioritization

5.2.1.1. MUST

5.2.1.1.1. The system will approve the order delivery schedule of customer.

5.2.1.1.2. The system will cancel the order delivery of a cancellation order request from the customer.

5.2.1.1.3. The system will cancel the customer requested order schedule by a cancellation order request from the employee.

5.3. Customer Panel

5.3.1. MoSCoW Prioritization

5.3.1.1. MUST

5.3.1.1.1. The system will approve the registration of customer with their name, date of birth, address, marital status and phone number.

5.3.1.1.2. The system will provide the access of **order booking and delivering** to the customer.

5.3.1.1.3. The system will provide the access of products choice to the customer.

5.3.1.1.4. The system will provide the access of category choice to the customer.

5.3.1.1.5. The access of profile customization, the system will provide the customer.

5.3.1.2. SHOULD

5.3.1.2.1. The system will accept the feedback from the customers.

5.4. Employee Panel

5.4.1. MoSCoW Prioritization

5.4.1.1. MUST

5.4.1.1.1. The system will provide the access of **order booking and delivering** to the manager.

5.4.1.1.2. The system will inform the working time schedule to the employee.

5.4.1.2. SHOULD

5.4.1.2.1. The access of profile customization, the system will provide the customer.

5.5. System Panel

5.5.1. MoSCoW Prioritization

5.5.1.1. MUST

5.5.1.1.1. The system will generate a unique code number for each of the registered customer.

5.5.1.1.2. The system will count the number of customer.

5.5.1.1.3. The system will store the information of the customers.

5.5.1.1.4. The system will rank the products taken by the customers.

5.5.1.1.5. The system will generate a unique code number for each of the registered employee.

5.5.1.1.6. The system will count the number of employee.

5.5.1.1.7. The system will store how many products employee provide.

5.6. Employee Management

5.6.1. MoSCoW Prioritization

5.6.1.1. MUST

5.6.1.1.1. The system will show employees profile list in a different category.

5.6.1.1.2. The system will provide access to the employee profile for update profile.

5.7. Customer Management

5.7.1. MoSCoW Prioritization

5.7.1.1. MUST

5.7.1.1.1. The system will show customers profile list in a different category.

5.7.1.1.2. The system will provide the discount access for add discount.

5.8. Service Management

5.8.1. MoSCoW Prioritization

5.8.1.1. MUST

5.8.1.1.1. The system will provide the price of products access to the accounts for change products price.

5.8.1.1.2. The system will provide the products change access to the accounts for update products.

5.9. Accounts

5.9.1. MoSCoW Prioritization

5.9.1.1. MUST

5.9.1.1.1. The system will provide the payroll access to the accounts.

5.9.1.1.2. The system will provide the daily transections document to the accounts.

5.9.1.1.3. The system will provide the price list of products to the accounts.

6. Non-Functional Requirements

6.1. Functionality

6.1.1. The System shall be capable of providing configurable error messages, workflows, and alerts.

6.1.2. Accuracy

6.1.2.1. The System shall display ordering time with appropriate time zones.

6.1.3. Interoperability

6.1.3.1. The System shall support content transportation standards and implementation specifications set forth in 45 CFR 170.205.

6.1.3.2. The System shall be capable of navigating seamlessly among related modules throughout the end-to-end scheduling process.

6.1.4. Security

6.1.4.1. The System shall be able to support secure messaging

6.2. Usability

6.2.1. Understandability

6.2.1.1. The System shall be self-descriptive and explain itself through cues. (e.g., screen, area, and group titles indicating the purpose of the respective interface element; on-screen instructions/diagrams; explanations/answers that are available on request; no implicit assumptions about how users are expected to behave that would contradict users' expectations; and feedback is given on user actions, system actions, and the system state)

6.2.1.2. The System shall be usable across multiple operating systems, browsers, and platforms.

6.3. Maintainability

6.3.1. Analyzability

6.3.1.1. The System shall be capable of providing transaction logs, error logs and audit trails for pertinent scheduling transactions.

6.4. Testability

6.4.1. The System shall provide criteria to enable the measurement to test pieces of code or functionality or a provision added in software so that systematically test plans and scripts could execute.

7. Hardware Requirements

7.1. Devices

7.1.1. Computer

7.1.2. Mobile

7.1.3. Server

7.1.4. Printer

8. Developing Tools

8.1. JAVA

Programming with Java is fantastically normal for banking and monetary innovation applications. Contrasted with other programming dialects, Java hangs out as far as security usefulness and condition. To start with, it accompanies certain underlying security highlights, for example, Cryptography, which incorporates thorough APIs including advanced marks, message validation codes, codes and that's only the tip of the iceberg. Progressed Authentication and Access Control that permits fusing a scope of secure login components, alongside making the custom security strategy and implement a very much characterized consent access strategy to touchy information. In straightforward words, "breaking into" your application gets not all that simple and your inward information remains free from any potential harm.

8.2. IBM (DB2)

8.2.1. DB2 undertakings the archive structure/storing, it uses different kinds of table spaces to isolate the data as fast as conceivable from the physical device. DB2 has different deliveries; the major free form, which is called Express-C, wires fundamental features, and just with that.

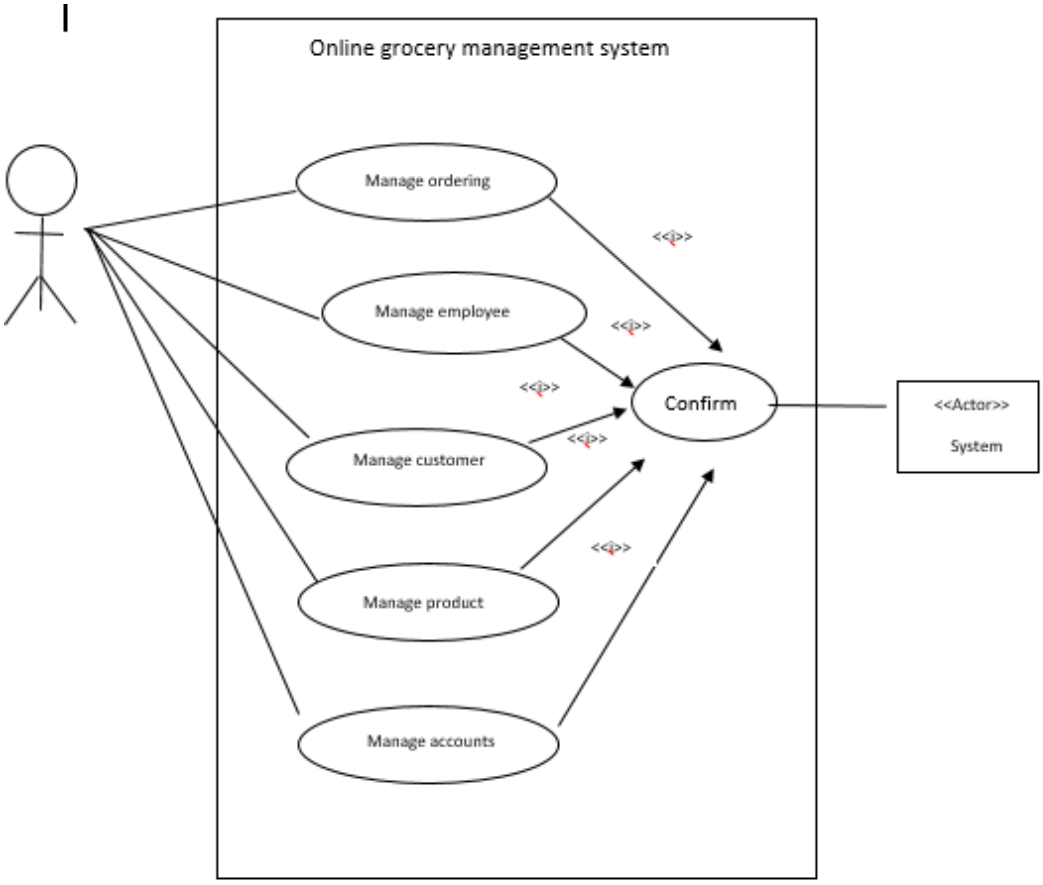
8.2.2. The expense is another factor. Already, MySQL was a fascinating Open Source adventure, but at this point it is significant for Oracle. At the present time, Oracle has finished the assistance to a significant parcel of the Open Source expands that started from Sun and we don't have the foggiest thought regarding the plans for this data base. Or maybe, IBM has conveyed this basic structure "in vain" and the enormous blue keeps conveying the most recent structure free.

8.2.3. DB2 can run in many platforms: Windows, Linux, UNIX (AIX, HP-UX and Solaris).

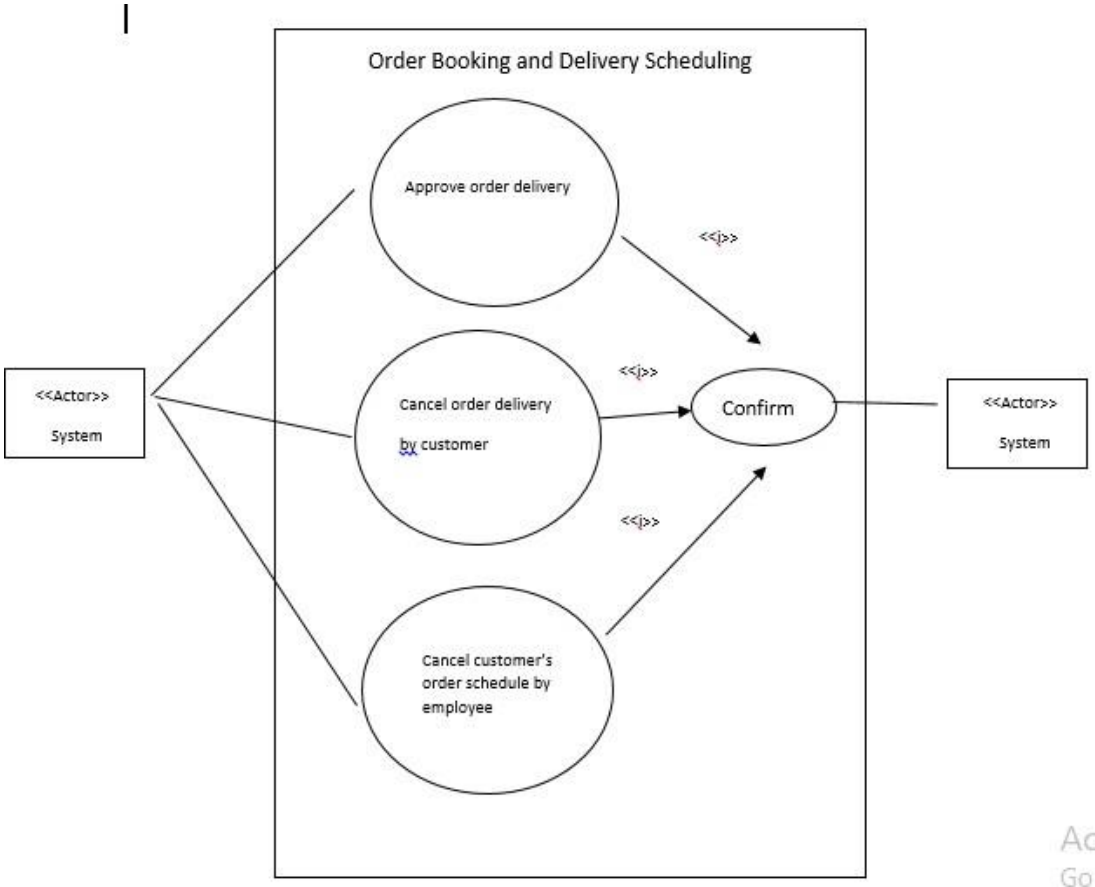
8.2.4. DB2 has various gadgets and features: failure recovery (fortification on the web/support join, restore full/steady/delta), High availability (HADR), the capacity to scale to Pure Scale (DB in a gathering), stores XML locally and recuperates them through

9. Use Case Diagram by Modules

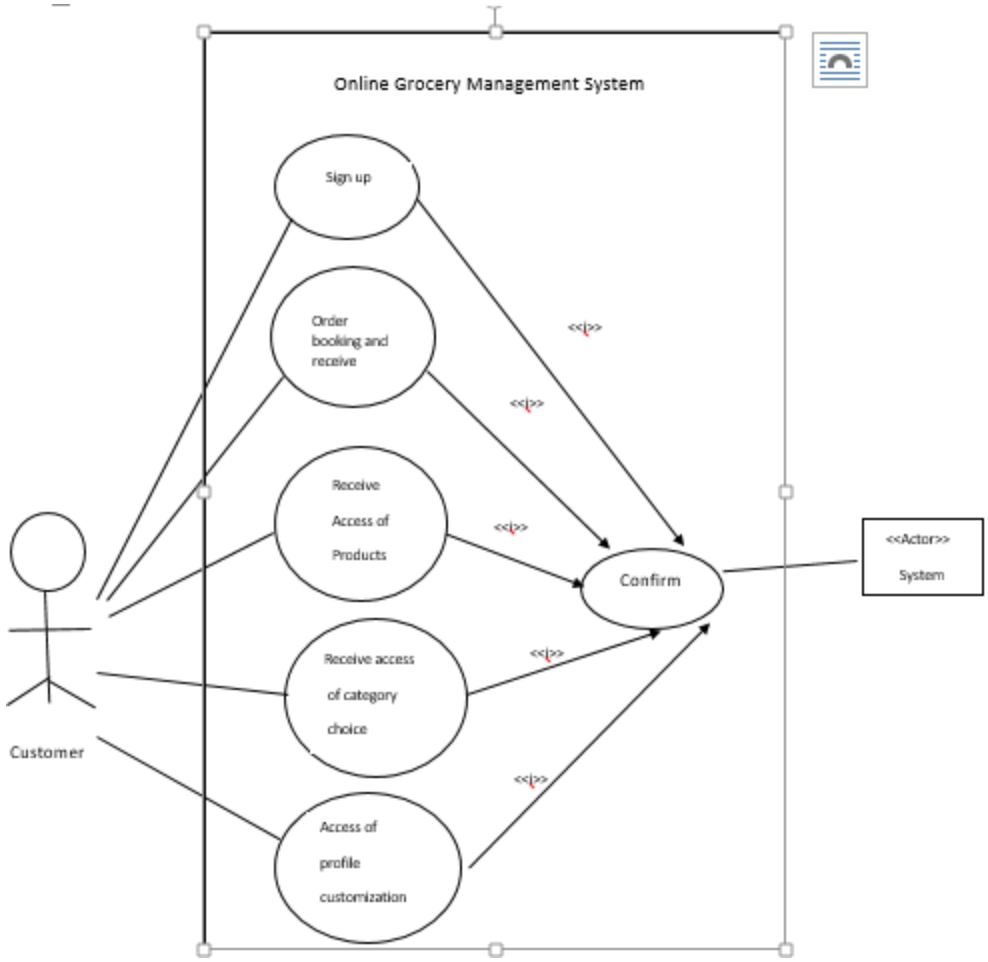
9.1. Manager Panel Diagram



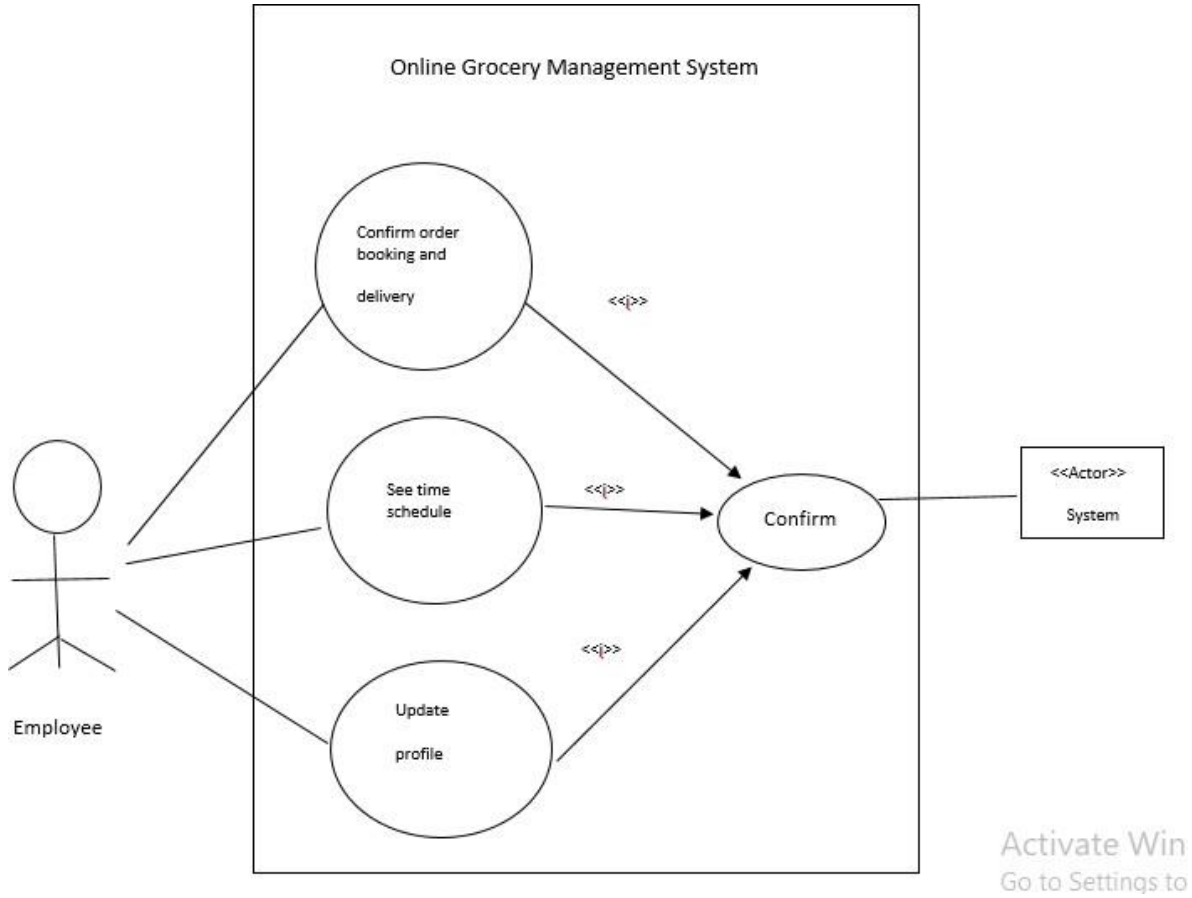
9.2. Order Booking and Delivery Scheduling Diagram



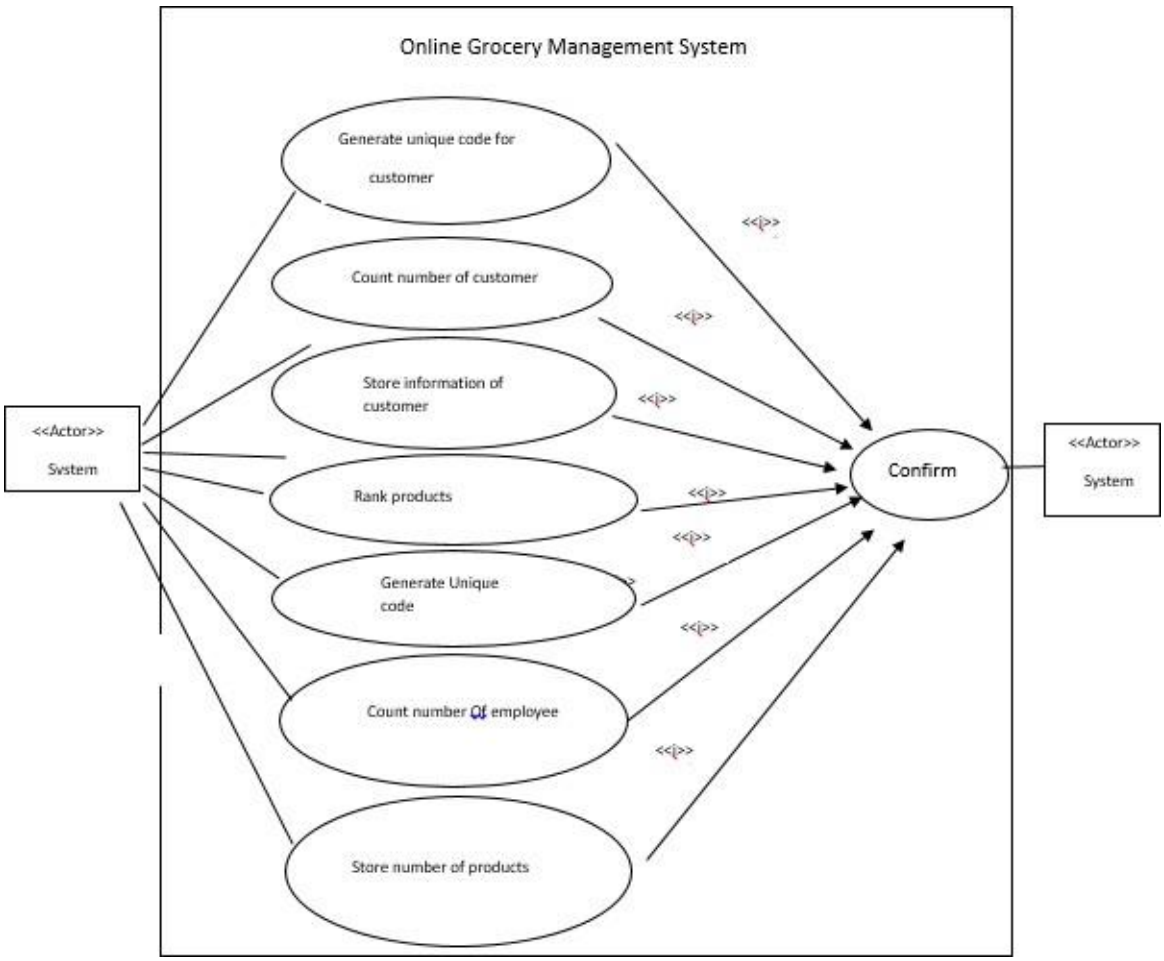
9.3. Customer Panel Diagram



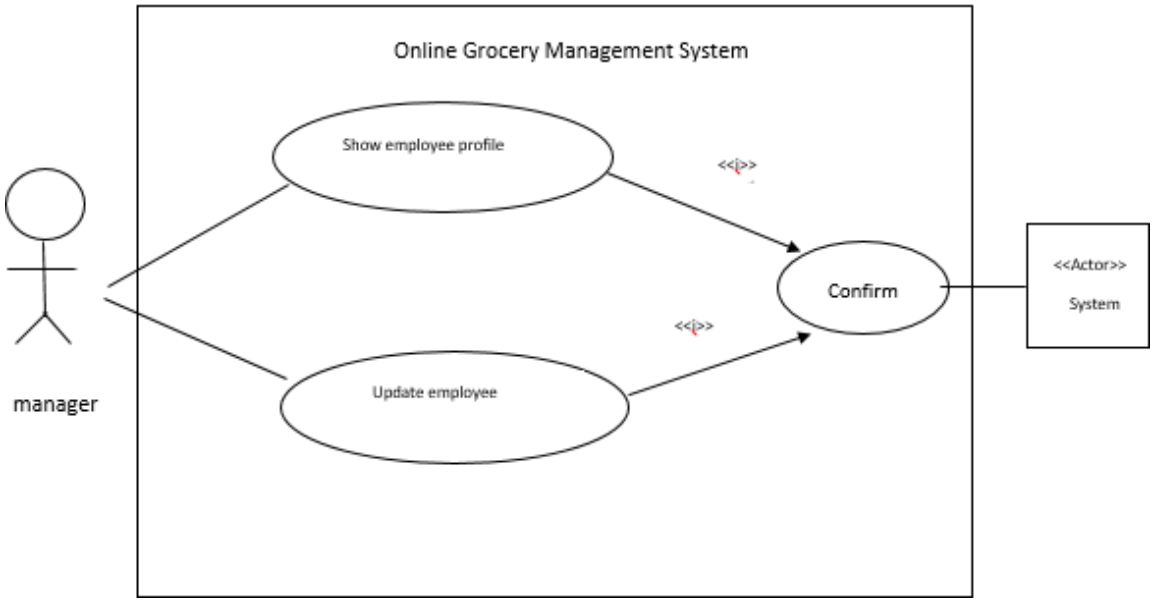
9.4. Employee Panel Diagram



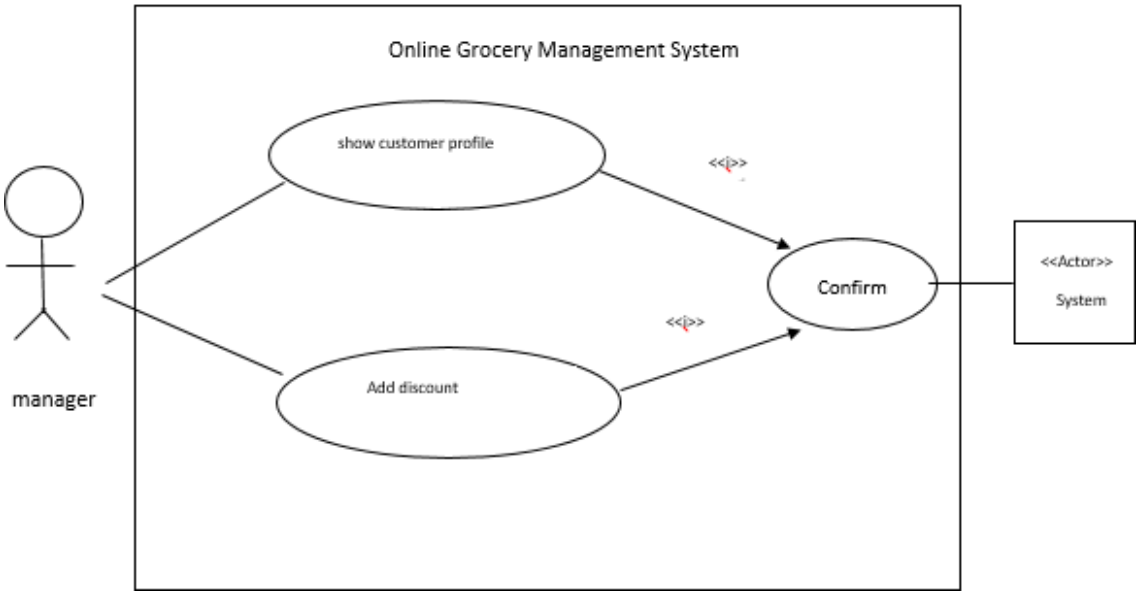
9.5. System Panel Diagram



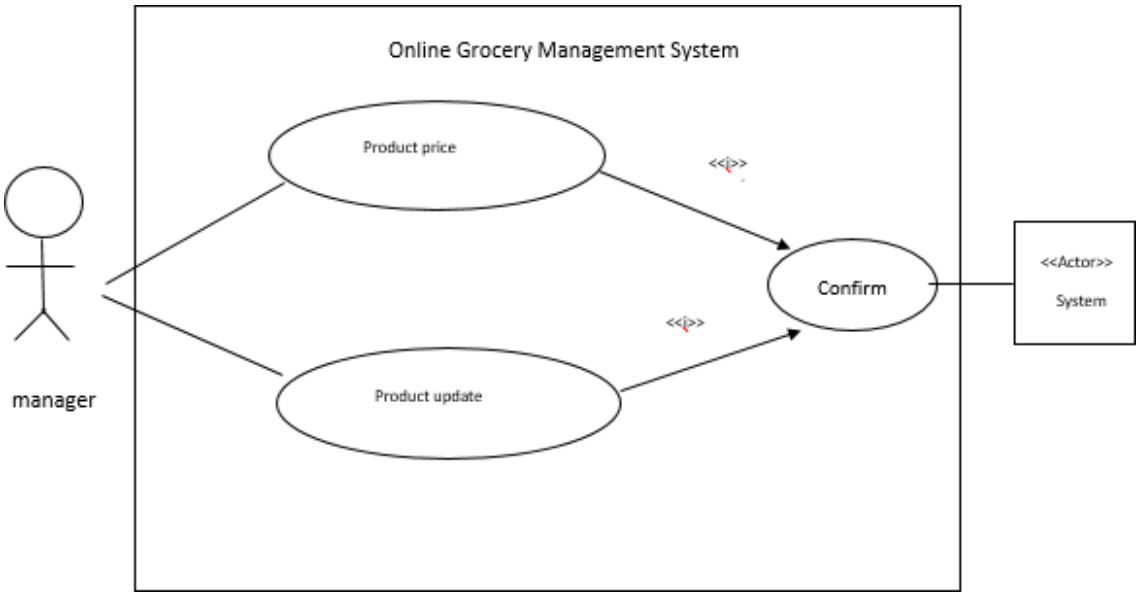
9.6. Employee Management Diagram



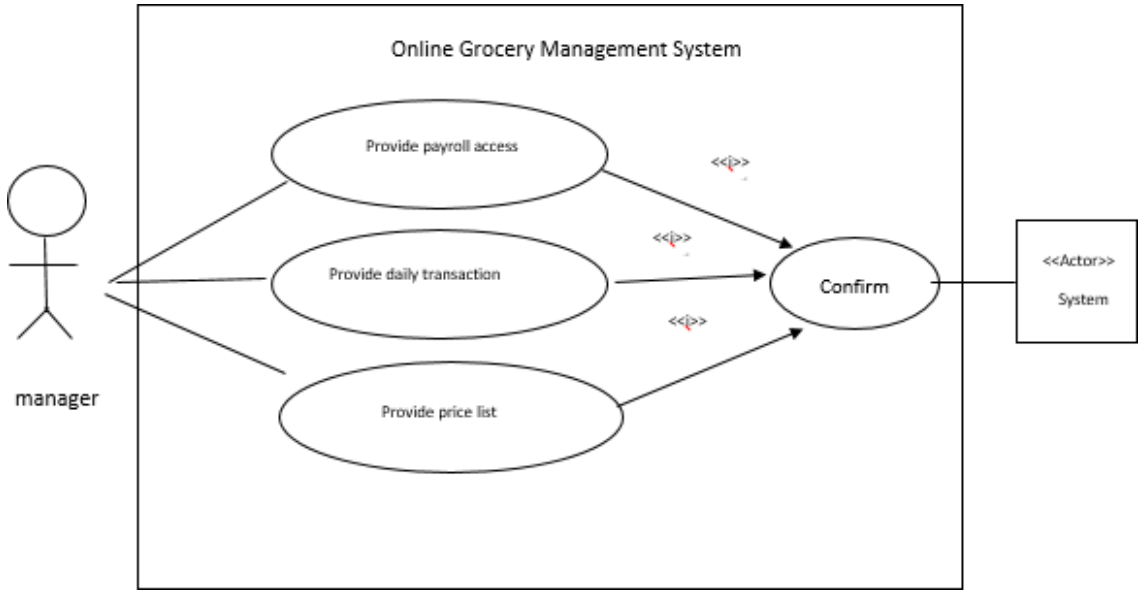
9.7. Customer Management Diagram



9.8. Service Management Diagram



9.9. Accounts Diagram



10. Constraints

10.1. Hardware Constraints

The system requires a data base in order to store data. This should have fortification limits.

10.2. Software Constraints

This information base framework is created by IBM (DB2) worker in a Linux powered server machine and DIA apparatus for data set plan.

10.3. Design Constraints

The system must be planned on such a way that will be anything but difficult to utilize and easily justifiable for any clients to encounter the information introduction.

11. Project Duration

11.1. Customer Requirements

The customer wants the software in 2 months.

11.2. Effort Estimation

[100,000 SLOC/1000 = 100k SLOC]

Software Project Type	Coefficient <Effort Factor>	P	T
Organic	2.5	1.05	0.38

Effort = PM = COCOMO:

PM = Coefficient<effort factor>*(SLOC/1000)^p

= 2.5 * (25000/1000)^1.05

= 2.5 * 29.3

`= 73

Development time = DM = 2.50*(73)^0.38

= 12.7

Required number of people = ST = PM/DM

= 73/ 12.7

= 6 person

12. Conclusion

The eagerness of Visual Studio for application is developing a tiny bit at a time in the Software business, because of world class standards of customer affiliations. Thus, an endeavor at motorizing an office application had added to our learning experience. It has correspondingly helped in tolerating a wise technique to oversee dealing with and caused us to grasp that framework improvement is a conscious cycle. Hence regarding the limit of SDLC (Systems improvement life cycle) model in planning the stunning example of structure progress into reasonable pieces. In actuality, it was an exceptional learning experience.