American International University-Bangladesh (AIUB)  
**Department of Computer Science  
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Spring 19\_20**

**Warehouse Management System**

A software Engineering Sec: **D** project submitted

By

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The project will be Evaluated for the following Course Outcomes

|  |  |
| --- | --- |
| CO3: Choose appropriate software engineering model in a software development environment | Total Marks |
|  |
| Content Knowledge [5Marks] |  |
| Argumentation [5Marks] |  |
| Evidence of Argumentation [5Marks] |  |
| Completeness, Spelling, grammar and Organization of the Answer [5Marks] |  |
|  | |
| CO4: Explain the roles and their responsibilities in the software project management activities | Total Marks |
|  |
| Project Background Analysis [5Marks] |  |
| Project Role identification [5Marks] |  |
| Responsibility Description [5Marks] |  |
| Completeness, Spelling, grammar and Organization of the Answer [5Marks] |  |

Table of Content:

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| SL. | Content |
| 1. | Scenario |
| 2. | Features |
| 3. | Project details with functionality |
| 4. | UML with Description |
| 5. | Estimation |
| 6. | Role |
| 7. | Process Model |
| 8. | Scheduling |
| 9. | Risk |
| 10. | Reference |

**Warehouse Management System**

Warehouse management system is the most common modern of technology. Which is combination of hardware and software. Basically its processes and procedures oversee the monitoring and maintenance of stocked products, whether those products are company assets, raw materials and supplies, or finished products ready to be sent to vendors or end consumers. In this project here three type of users based on privilege.

1. Super Admin
2. admin
3. Sales Person

**Project Objective**

1. Our project will very easy to use.vendor will be able to manage their warehouse very easily.this is an time consuming software.This project is far better than anyother offline systems.

**Advantage:**

1. It is an Online based software, so it is simple and easier than regular hard copy maintain.
2. It saves time.
3. Users can maintain their warehouse without any hassle.

**Disadvantage:**

1. This is an online based software,so that user must have internet connection for use this.
2. Only super admin can create an account.

**Application:** The system can be-used in all online-based electronic devices.

**Features**

1. **Super Admin**

Super admin can do all things like check invoice, add/remove/update users, add/remove/update product, category and sub-category.

1. **Admin**

admin can do same thing without add/remove/update users.

.

3.**Salesperon**

Sales Person can only generate invoice/Cash Memo when he/she will sell a product.

**Does the project have a clear target market or audience?**

Yes, our project has a clear target market for warehouse management system where user can easily manage their warehouse in a secured way from their home. Or office anywhere.They don’t need to maintain any hard copy for manage their warehouse. Therefore, it’s time-consuming for any user.

**Does the team demonstrate a thorough understanding of the need, problem or opportunity, including evidence of research into the need, problem or opportunity?**

We demonstrate that our project has become a big issue for the security because we process all things in a secured way. Here, users can calculate their sailing items .they can create cashmemo automatic by scan a barcode.This is very time consuming.

**Is the project’s purpose and basic functionality easily understood?**

Yes, the purpose and basic functionality are easily understand to theall kind of vendor. There are a lot’s of people who does not want to use any hard copy or calculator machine for manage their shop so this project is useful for them. As we all are in now in 2020 everything are being digital and also online based.So this system are well known to our country so people will not feel hesitate to use it.

**ER Diagram:**

category

User

belong

dept

Sub category

Is a

belongs

invoice

store

product

**Class Diagram**:

Super admin

Admin

Add user

Remove user

Update use

Add

Remove

Update

Salesman

Products

Type

Price

Generate invoice

Update invoice

Store

Remove product

Add product

Product

Pin code

Type

Pin code

Type

Pin code

The class diagram includes the major classes. Class admin have attributes add, remove, update. Class user have attributes generate invoice. Products is a class with types and price. It has two sub classes as add product, remove product

**Use Case:**

admin

Super Admin

Salesman

The use case diagram includes the major use cases. Login is a use case by which both admin and user can log into their accounts. User have to login with the login use case. Products is a use case where products can be add, remove. By using products use both admin and user can display and see the products. Store is a use case for salesman to look up the product summary.

**Activity Diagram**:

Enter User Name & Password

Add Sub category

Remove Sub Category

Update Sub Category

Add Product

Remove product

Update product

Add category

Remove category

Update Category

Add User

Remove User

Show All Invoice

Generate Invoice

Update Invoice

The activity diagram includes the major activities. The activity of warehouse management system app allow the users to their desire products. After use the log in activity user can invoice their products.

**Estimation**

Scope

Schedule

Budget

9-

COST PLAN

10-

PAYMENT PLAN

8-

PLAN

7-

RECOURCES

6-

GANTT CHART

5-

NETWORK DIAGRAM

4-

MILESTONE

3-

ESTIMATE

2-

WBS

1-

PBS

Effort= PM= Coefficient<Effort Factor> \*(SLOC)^P

[As Coefficient= 2.4, Sloc= 5000/1000=5 SLOC, P=1.5]

So, PM= 2.4\*(5)^1.05

=14 person-month

Development time=DM=2.50\*(PM)^T

DM= 2.50\*(14)^0.38 [As PM= 14,T=0.38]

= 7 month

**Role:**

|  |  |
| --- | --- |
| **Name** | **Activity** |
| Islam,Sadek | Topic, Scenario Features, Advantage, Disadvantage, Estimation |
| Arpi, Samiha Nowrin | Activity Diagram, Use case diagram, Class Diagram Model Analysis |
| Rahman, Tanjila | Scheduling, Problem analysis, Risk, Reference |

* **Process Model**

Agile Software development comprises various approaches to software development under which requirements and solutions evolve through the collaborative effort of self-organization and cross-functional teams and their customer. It advocates adapting planning, evolutionary development ,early delivery, and continual improvement , and it encourages rapid and flexible response to change. The term Agile was popularized, in the context ,by the Manifesto for Agile Software Development Process. The value and principles espoused in this manifesto were derived from and underpin a broad range of Software Development frameworks, including Scrum and Kanban. Software development methodology began to change when developers began working on internet applications. A lot of the early work was done at starts up where teams were smaller, were co-located, and often did not have traditional computer science backgrounds.

* **Sufficient arguments in support of our model**

For software implementation, any companies need to innovate better and faster operations, new technology and how to fulfill customer requirements. As we know agile method is a lightweight and people based, so using agile we could easily satisfy the customer. Changing requirements even late in development, agile process control change for the customer’s competitive advantage. Deliver frequently working software with a preference to the shorter timescale (at least 30 days). Business people and developers must work together daily throughout the project. In this process, the developer team and the customer easily can connect with each other. Actually agile method gives support.

**Scheduling:**

Project scheduling is an activity in which we decide how we will divide the project into the smaller task. We also decide how these tasks will be execute and how much time a task will take to complete.

For our project, following two steps are very important.

1. Set Milestone: Our 1st milestone will be consist on first two tasks if our project is divided into many tasks.
2. Estimate resources: If our project is divided into 6 tasks let suppose so we should have knowledge what kind of and how much resources are required to complete specific task.

**Schedule Representation:**

Let we divided our projects into 7 tasks.

|  |  |  |
| --- | --- | --- |
| **Task** | **Duration** | **Dependencies** |
| T1 | 14 |  |
| T2 | 7 | T1 |
| T3 | 20 | (M1) |
| T4 | 6 | T3 |
| T5 | 27 | (M2) |
| T6 | 7 |  |
| T7 | 10 | (M3) |

Here, Task= T; Milestone= M

**ACTIVITY BAR CHART:** (WEEKLY BASIS)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Week | 1 | 2 | 3 | 4 | 5 | 6 |
| T1 |  |  |  |  |  |  |
| T2 |  |  | T1 |  |  |  |
| T3 | T2(M1) |  |  |  |  |  |
| T4 |  |  |  | T3 |  |  |
| T5 |  |  | (M2) |  |  |  |
| T6 |  |  |  |  |  |  |
| T7 |  |  |  |  | (M3) |  |

**Risk:**

In our app, there are activity that uses a variety of technological advancements and requires high level of knowledge. Because of these and others factors every software projects contains elements of uncertainly. This is known as project risk. As project manager, it’s not enough to merely be aware of the risk. To achieve a successful outcome, project leadership must identify assess, prioritize and manage all of the major risks. Risk is a potential problem. Risk management includes the following tasks…

* Identify Risks and triggers.
* Classify and prioritize all risks.
* Construct a plan that links each risks to a mitigation.
* Monitor for risk triggers during the project.
* Implement the mitigating action if any risks materializer.

Risk management is an extensive discipline and we have only given an overview here.

**Reference:**

* Pfleager. S.L (1998) Software Engineering: Theory and Practice, Prentice Hale.
* R.S Pressman & Associates, Inc (2010) Software Engineering : A Practioner’s approach.

Center for Software Engineering. USC (1998) COCOMO || model Definition