A

PROJECT REPORT

ON

Sunrise Solar

Submitted in partial fulfillment for the award of

Post Graduate Diploma in Advance Computing

(PG-DAC) from

INSTITUTE OF EMERGING TECHNOLOGIES

Authorized Training Centre

Under the Guidance of

Name of the Guide

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BY

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CERTIFICATE

This is to certify that the project report entitled **Sunrise Solar** is a bonfire work carried out by **Vaishnavi Sakhare, Tanmay Mahamuni, Pratik Gavali, Shivam Gade** and submitted in partial fulfilment of the requirement for the C-DAC ACTS, DAC course in Institute of Emerging Technology in the batch of Aug 2019.

Course Coordinator **External Examiner**

ACKNOWLEDGEMENT

This project **Sunrise Solar** was a great learning experience for us and we are submitting this work to Advanced Computing Training School (CDAC).

We are very glad to mention the **Mrs**. **Savita Vaidya** for her valuable guidance to work on this project. Her guidance and support helped us to overcome various obstacles and intricacies during the course of project work.

Our most heart full thanks goes to ***Mr. Sangram Patil*** **(Director ,IET)**who gave all the required support and kind coordination to provide all the necessities like required hardware , internet facility and extra lab hours to complete the project and throughout the course up to the last day here in C-DAC ACTS, Pune.

Sign of student

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1. Introduction

1.1 Purpose

The purpose of the document is to collect and analyse all assorted ideas that have come up to define the system, its requirements with respect to consumers. Also, we shall predict and sort out how we hope this product will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered, but may be discarded as the product develops.

In short, the purpose of this SRS document is to provide a detailed overview of our software product, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements. It defines how our customers, team and audience see the product and its functionality.

The purpose of this project is to solve the customers needs of installing a rooftop solar powerplant at their home conveniently and cost effectively.

1.2 Project Scope

The scope of this project is limited to facilitating smooth communication and data sharing between customer and vendor. They can complete this entire process on the website itself. The customers get to list their requirements online and obtain quotations and place order after selecting a vendor. The vendors can view requests made by the customers once they have logged in and choose to send the quotation. Once the order is placed the customer can pay the amount to the vendor.

The installation and delivery of the rooftop solar plant will be the responsibility of the vendor and will be executed separately.

1.3 Glossary

Term	Definition
Rooftop Solar Plant	A collection of solar panels and related electrical equipment to generate electricity to supply to the property.
Customer	An individual who is looking to install a rooftop solar power plant on his property
Vendor	A company who provides EPC services to install rooftop solar power plants
Request	A request is generated by customer stating that he is looking to install a rooftop solar plant on his property. It contains all the related details.
Quotation	A document provided by the vendor to the customer detailing the cost of the installation.

2 Overall Description

2.1 Product Perspective

This project has been commenced due to the increasing needs of renewable energy by customers. There is a large shift towards solar energy happening in the country. There is a lot of support for such ventures from the government also. Considering the challenge of climate change people will be increasingly adopting renewables sources of energy among which solar is the most widely and easily accessible. It is easy to install and operate. Customers can get an ROI in 4-5 years. The solar plant lasts for 25-30 years. Customers can also sell the excess electricity generated back to the grid. This will lead to customers looking for ways to acquire rooftop solar power plants. This project aims to provide a one stop solution for all their needs.

2.2 Product Functions

- User registration and login
- Account management for users
- Solar power plant request generation by user
- Viewing requests and generating quotations for powerplant by vendors
- Placing order by customers and completing payment.

2.3 User Classes and Characteristics

- General visitors: Access public information and make inquiries
- Registered customers: Place requests for rooftop solar power plant and view quotations for the same. Place order for the power plant and pay on completion of order
- Registered Vendors: View requests posted by customers for rooftop solar power plant and send quotations. Accept order and receive payment on completion.

2.4 Operating Environment

The website will operate on all standard web browsers(Chrome, Firefox, Safari, Edge) on both desktop and mobile devices.

3 Functional Requirements

3.1 User Registration and Login

- There are two types of users, vendors and customers. Both of them can register by filling out a form.
- Customers will have to give personal details including name, mobile no, email, address, etc.

- Vendors will have to give company details including employee name, mobile no, email id, company name, address, KYC documents, GST registration certificate.

3.2 User Account Management

- Users can edit their profile information and update details.
- Customers can view the requests they have generated, quotations they have received and orders that they have placed.
- Vendors can view the requests uploaded by customers, quotations sent and orders accepted.

3.3 Request Generation

Customers can post a request for a rooftop solar power plant by sharing their property details and electricity needs.
Customer will have to share the following details:

- Property type
- Rooftop area available
- Average monthly electricity consumption
- Average monthly electricity bill

3.4 Quotation Generation

Vendors can view the list requests posted by the customers and send quotation to them.
Vendors can upload a file containing all the details of the quotation.
They will have to specify the delivery date and amount also

3.5 Order placement

Customers can view the various quotations received after logging in.
Customers can download all these quotations and compare them with each other
Customers can place the order after they have selected a vendor.
After the delivery status is updated by the vendor to be completed the customer can complete the payment process on the website

3.6 Information Acquiring

Various benefits of solar energy and installing a rooftop solar power plant will be listed on the website.
Benefits to vendors who use this platform will be displayed on the website.
Instructions to guide customers and vendors regarding how to use this website will be available on website.

4 Non Functional Requirements

4.1 Performance

- The web portal shall have low latency and provide a responsive user interface.
- The system shall handle multiple concurrent user sessions without performance degradation.
- The time taken for inventory checks and order processing shall be optimized to minimize customer wait time.

4.2 Security

- The system shall employ secure authentication mechanisms to protect customer information.
- Customer data, including personal and payment details, shall be encrypted and stored securely.
- Access controls shall be implemented to restrict unauthorized access to sensitive information.

4.3 Reliability

- The system shall be available for customer order placement 24/7, with minimal downtime for maintenance.
- The system shall have backup and recovery mechanisms to ensure data integrity and availability.

4.4 Usability

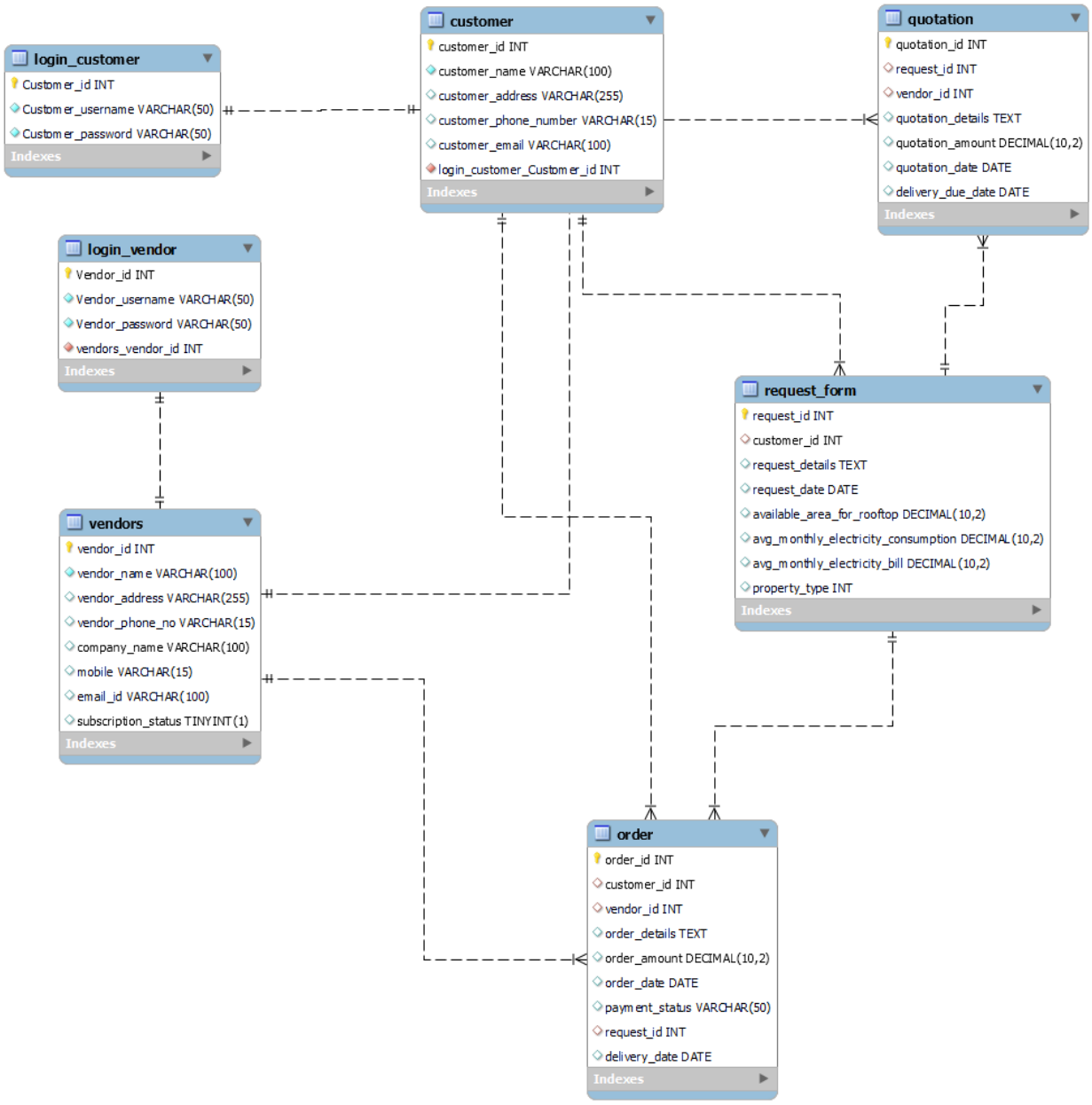
- The web portal shall have an intuitive and user-friendly interface for easy navigation and order placement.
- Error handling and validation messages shall be provided to guide users and prevent incorrect inputs.

4.5 Scalability

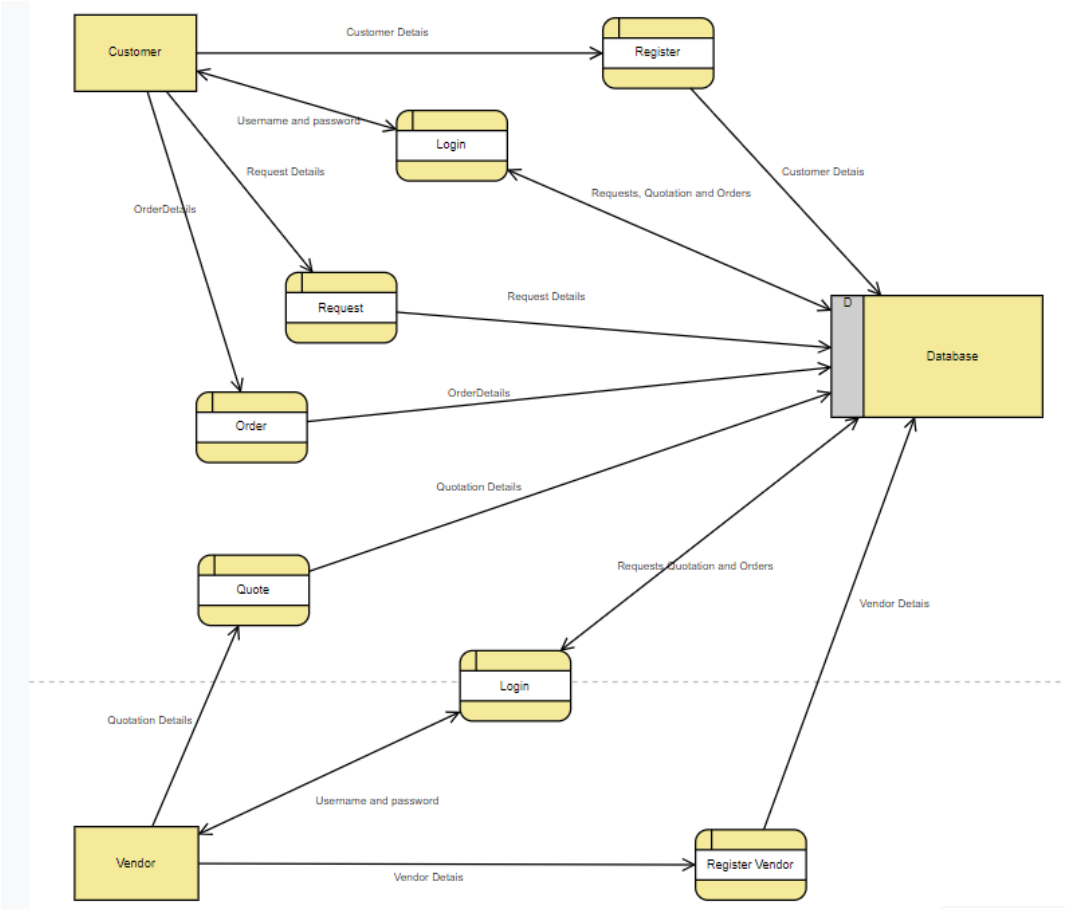
- The system architecture shall support future scalability to accommodate increasing customer demands.
- The web portal shall handle a growing customer base and a larger volume of orders without performance degradation.

5 UML Diagrams

5.1 ER Diagram:

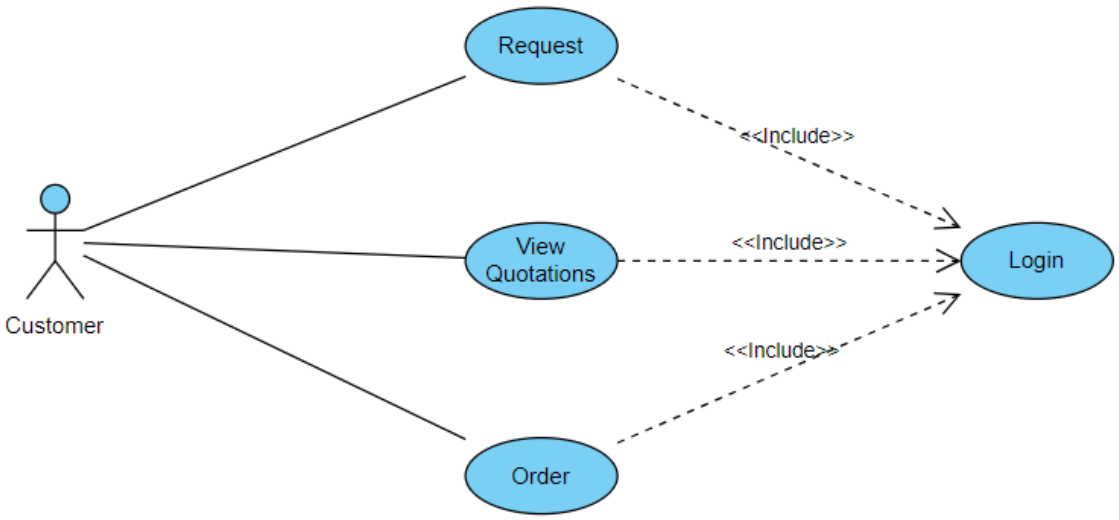


5.2 Data Flow Diagram:

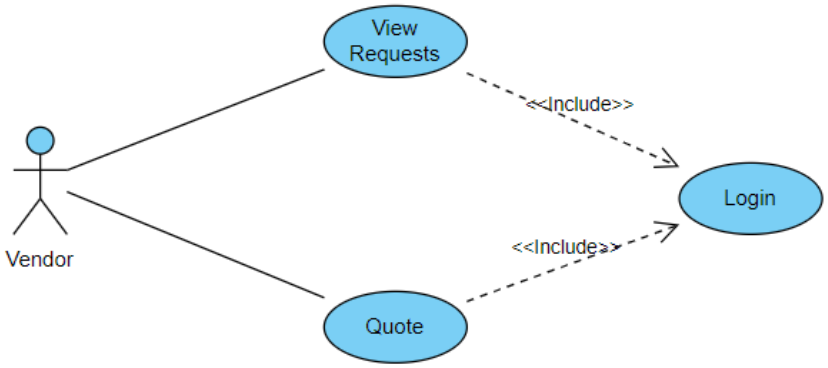


5.3 Use Case Diagrams:

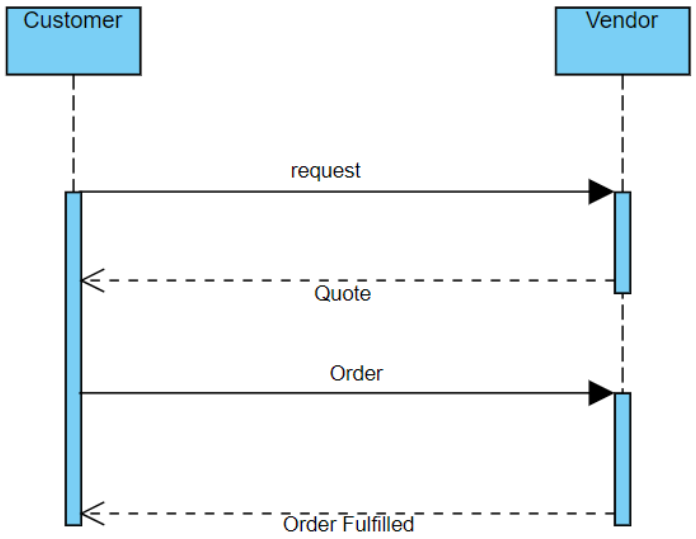
5.3.1 Customer Use Case:



5.3.2 Vendor Use Case:



5.4 Sequence Diagram:



5.5 Activity Diagram:

Order Process