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# 1 PROJECT PROFILE

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## 1.1 Project Description:

Prayosha, the web application for solar firm is a cutting-edge and all-encompassing platform created to expedite operations and successfully manage solar projects. Lead management, customer management, project management, reporting and analytics, user management, and integration possibilities are just a few of the many features and functionalities offered by the application.

The application is made to interact with other company systems, and project management tools, to streamline operations and prevent double data entry. Its architecture is flexible and extensible, and it is adaptable to meet the needs of the solar company's expanding business.

This web application, which made for a solar panel company named Prayosha, as described above, can lead to secure, reliable and error free system using parameterized queries, input validations, limiting user privileges, regularly updating, firewalls and intrusion detection systems and educate the user.

In general, the web application for solar firms is a potent tool that enables solar energy companies to effectively manage their solar projects, enhance their business processes, and meet their sustainability objectives.

### 1.1.1 Project Features:

#### Features:

- Collaboration Of Various Marketing Tools
- Web-based Business Support
- Brand Integration
- Online Shopping
- Self-Registration for Clients
- Responsive Design Features
- Accreditation Support
- Natural User Interface
- Availability Features

#### Admin/User side Features:

- Signing Up for placing order
- Reporting and Data Analysis
- Assessment Management & Live Feedback
- Quality Content
- Quick User Integration
- Easy Payment Methods
- Team Information Management

## 1.2 Project Profile:

|                     |  |
|---------------------|--|
| Project Name:       | Prevention of security breaches caused by SQL Injections |
| Front-End:          | CSS, JavaScript, HTML                                    |
| Back-End:           | MySQL, PHP   |
| Browsers:           | Google Chrome, Mozilla, Safari                           |
| Platform:           | Windows 10, 11   |
| Documentation Tool: | Microsoft Office Word 2019                               |
| Guide:              | Ms. Konica Soni  |
| Submitted To:       | Charotar University of Science and Technology            |
| Developed By:       | Prapti Jigneshbhai Patel                                 |
|                     | Atmik Maheshbhai Virani                                  |

## 2 Introduction to Tools

### 2.1 Hardware and Software Requirements:

| Hardware Specification |   |
|------------------------|---|
| Development Time:      | 4 GB RAM, intel core i3 or Higher processor |
| Run Time:              | 1 GB RAM, intel core i3 or Higher processor |

| Software Specification |                                |
|------------------------|--------------------------------|
| Browser:               | Google Chrome, Mozilla, Safari |
| Operating System:      | Windows 10, 11                 |
| Front-End:             | CSS, JavaScript, HTML          |
| Back-End:              | MySQL, PHP                     |
| Other Tools:           | Microsoft Visual Studio Code   |

## 2.2 Technology Used:

### 2.2.1 Back-End Tools:

#### MySQL Technology:

##### ➤ Introduction to MySQL:

- **MySQL** is an open-source relational database management system(RDBMS).
- It is the most popular database system used in PHP.
- **MySQL** is very fast, reliable, and easy to use database system. It uses standard SQL.
- **MySQL** works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- **MySQL** is very friendly to PHP, the most appreciated language for web developments.
- **MySQL** supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this to a theoretical limit of 8 million terabytes.



## ➤ Features of MySQL:

### **1. Scalability & Flexibility:**

With MySQL you can run deeply embedded applications and create data warehouses holding a humongous amount of data.

### **2. High Performance & Availability:**

Provides fast load utilities with distinct memory caches and table index partitioning. MySQL can run high-speed master/slave replication configurations and its offers cluster servers.

### **3. Data Types:**

Supports multiple data types like primitive, structured, documents, etc.

### **4. It is secure:**

MySQL consists of a solid data security layer that protects sensitive data from intruders. Also, passwords are encrypted in MySQL.

### **5. High Performance:**

MySQL is faster, more reliable, and cheaper because of its unique storage engine architecture. It provides very high-performance results in comparison to other databases without losing an essential functionality of the software. It has fast loading utilities because of the different cache memory.

### **6. Dual Password Support:**

MySQL version 8.0 provides support for dual passwords: one is the current password, and another is a secondary password, which allows us to transition to the new password.

### **7. Client/Server Architecture:**

MySQL follows working of a client/server architecture. There is a database server(MySQL) and arbitrarily many clients (application programs), which communicates with the server; that is, they can query data, save changes, etc.

## PHP:

### ➤ Introduction to PHP:

- **PHP** started out as a small open source project that evolved as more and more people found out how useful it was. Rasmus Lerdorf unleashed the first version of PHP way back in 1994.
- **PHP** is a recursive acronym for “PHP: Hypertext Pre-processor”.
- **PHP** is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites.
- **PHP** supports a large number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.
- **PHP** supports large number of major protocols such as POP3, IMAP, LDAP. PHP4 added support for java and distributed object architectures(COM and COBRA), making n-tier development a possibility for the first time.
- **PHP** is forgiving: PHP language tries to be as forgiving as possible.
- **PHP** Syntax is C-like.





### ➤ Advantages of PHP:

**PHP** has remained one of the most versatile and pragmatic web development languages in the world today.

**PHP** range of functionalities, amazing array of add-ins to extend functionalities, its open-source nature, and tremendous online community support has made PHP a perennial favourite amongst newbies as well as established development agencies worldwide.

- **Easy and Simple to Learn**
- **Extremely Flexible**
- **Easy Integration and Compatibility**
- **Efficient Performance**
- **Cost-Efficient**
- **Gives Web Developer More Control**

## 2.2.2 Front-End Tools

### CSS:

#### ➤ Introduction to CSS:

- **CSS (Cascading Style Sheets)** is a language for creating style sheets that define how a web page or web application looks visually.
- The front-end of a web programme can be made rich and dynamic by combining **CSS** with HTML and JavaScript.
- **CSS** offers a collection of guidelines that can be used to alter the color, font, layout, and other stylistic components of HTML elements.
- **CSS** is made to be extremely versatile and customizable.



## ➤ Features of CSS:

### 1. Selectors:

To target particular HTML components and apply styles to them, **CSS** makes use of selectors.

### 2. Properties:

A variety of **CSS** attributes, including color, typeface, size, padding, margin, and others, can be used to modify how HTML components look.

### 3. Values:

Color names, hex symbols, numeric figures, and more can all be used as variables for **CSS** attributes.

### 4. Layout:

To manage the positioning and arrangement of HTML components, **CSS** offers layout features like positioning, floats, and flexbox.

### 5. Responsive Design:

In order to build flexible designs that change according to various screen widths and devices, **CSS** contains features like media queries and viewport units.

## JavaScript:

### ➤ Introduction to JavaScript:

- It is used to build dynamic and engaging user interfaces.  
**JavaScript** is a high-level computer language that is mainly used for front-end web development.
- Brendan Eich created **JavaScript** for the first time at Netscape in 1995.
- **JavaScript** is an interpreted language, which means that there is no need for compilation because the code is run by the browser as it is met.
- • **JavaScript** is used to add utility and engagement to web sites, including form validation, dynamic content, and engaging elements like sliders and animations.
- • Back-end programming, including server-side coding with Node.js, can also be done in **JavaScript**.



## ➤ Features of JavaScript:

### 1. Variable and Datatypes:

Numerous datatypes, such as integers, strings, Booleans, objects, and groups, are supported by **JavaScript**.

### 2. Operators:

Numerous operators are available in **JavaScript**, such as math, comparison, and logical operators.

### 3. Control Structures:

To manage the processing of programs, **JavaScript** has control structures like loops, switch statements, and if/else statements.

### 4. Functions:

**JavaScript** gives programmers the ability to create repeatable methods that can be used throughout the code.

### 5. DOM Manipulation:

**JavaScript** gives developers access to a web page's Document Object Model (DOM), enabling them to change the page's layout and content in reaction to user input.

### 6. Events:

The various event handlers offered by **JavaScript** enable developers to react to user activities like clicks, scrolls, and form entries.

## HTML

### ➤ Introduction to HTML:

- Web sites and web apps are made using the markup language **HTML (Hypertext Markup Language)**.
- **HTML** offers a method to organise and organise material, including text, images, and multimedia, on the web.
- In order to create a dynamic and engaging user experience, **HTML** must be used in conjunction with other web tools like CSS and JavaScript.
- The layout and substance of online sites are defined by **HTML** using tags and attributes.
- **HTML** tags are used to designate up website components, while attributes give the parts more details.

# HTML



## ➤ Features of HTML:

### 1. **Elements:**

**HTML** offers a broad variety of components that can be used to organise and arrange content on a web page, including headers, paragraphs, lists, pictures, and tables.

### 2. **Attributes:**

**HTML** components are capable of having attributes that reveal more details about them, such as the origin of a picture or the destination of a link.

### 3. **Forms:**

Users can input data and engage with the website by using interactive forms made with **HTML**.

### 4. **Semantic markups:**

With the introduction of semantic components like article, section, and nav, the material of a web website can now have more significance and structure.

### 5. **Accessibility:**

A variety of accessibility features in **HTML**, like alt text for pictures and ARIA properties for interactive components, increase the usability of online content for people with impairments.

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## 3. System Study

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### 3.1 Existing System and its Drawbacks:

- Web apps can be used for a variety of marketing initiatives, enabling companies to connect and interact with clients online.
- Web apps can be used for a wide range of marketing initiatives, giving businesses the opportunity to connect with and interact with consumers online while also boosting sales and profits. Businesses can increase their online visibility and successfully pinpoint their target population by utilising the power of web apps.

#### ❖ Disadvantages of System:

- An existing web application's bad user experience (UX) could be caused by difficult navigation, a cluttered layout, slow loading times, and a lack of responsiveness, which would irritate and displease users.
- The performance, stability, and dependability of an existing web app may be disrupted by technical problems, bugs, mistakes, and crashes that cause downtime, data loss, and business interruptions.
- Users' confidence in online applications may be harmed by successful attacks, possibly costing businesses customers and income.
- Data loss and corruption may result from breaches that jeopardise the database security of an online service.
- If an online programme has many lines of code and has been in use for a long time, fixing the security flaws may take a long time and be expensive.

### 3.2 Proposed System:

The recommended system offers a user-friendly interface, extensive functionality, strong data protection, scalability, proactive support, and cost-efficient licencing compliance for the online application for the solar company. It intends to fix current issues, improve user experience, and provide the solar company the tools it needs to manage projects and operations effectively.





### 3.3 Scope of Proposed System:

The proposed system seeks to deliver a feature-rich, user-friendly online application for solar companies that includes an intuitive user interface (UI), extensive functionality, strong data protection, scalability, pro-active support, and licencing compliance.

- A safer online programme would be less susceptible to theft and data leaks.
- A feature-rich, user-friendly online application for solar companies.
- An intuitive user interface for quick and easy navigation.
- Comprehensive functionality adapted to the requirements of solar firms.
- Proactive guidance and upkeep for optimal performance.
- Easy to operate and have a good user and operator.
- It satisfies the user requirement.
- Strong data security methods to safeguard sensitive data.
- Flexible and scalable design for personalization and expansion.
- Delivered on schedule within the budget.

### 3.4 Aim and Objectives of Proposed System:

#### Project Modules:

-  Admin
-  User

#### Modules Vice Objectives:

##### ❖ Admin:

- Admin manage user in system and maintain their information.
- Admin can manage his profile and able to change the password.
- Admin can manage payroll system and generate monthly salary slip.
- Admin can also generate offer/coupons for new user.
- Admin can review and manage all user reports.
- Admin can add category and sub-category for the products.

##### ❖ User:

- User can register/login in web application themselves.
- User can view product according to the categories they prefer.
- User can manage his profile and can also change the password.
- User can contact the admin online on web application.
- User can add products to cart.
- User can purchase the selected product from the web application.

### 3.5 Feasibility Study:

- The modern era constantly introduces new information and communication tools. Even in terms of promotion, they are developing. E-commerce's significance in the current industry is still expanding. It is put into place to help the marketing process and boost its effectiveness and quality. E-commerce is used to supplement conventional marketing strategies or is progressively taking their place. Market purchase possibilities are evolving and becoming more contemporary.

- **Economic Feasibility:**

In developing countries, however, a complete web implementation of e-commerce is eventually possible and will have more advantages for both the customer and the seller. It was created with cost-effective design and development, and income sources should be varied for security.

- **Operational Feasibility:**

Operational viability is a metric used to assess how effectively a planned system addresses the issue, seizes opportunities found during scope definition, and complies with requirements found during the requirements analysis stage of system development.

- **Technical Feasibility:**

The specifics of how you plan to provide the goods or services to consumers are evaluated by a technical feasibility study. It concerns the supplies, labour, essential transit, the location of your company, and the technology required to make all of this happen. The logistics or operational plan for how your company will create, store, transport, and monitor its goods or services is known as the "production plan."

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## 4. System Analysis

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### 4.1 Requirement Gathering and Analysis

- Identifying stakeholders, eliciting requirements, documenting functional and non-functional requirements, analysing for accuracy and feasibility, prioritising requirements, validating with stakeholders, and updating documentation as necessary are all steps in the requirement gathering and analysis phase of developing a web application for Prayosha.
- Very often this thread of questions continues right till the end, forcing last minutes additions, changes, and modifications that slowdowns the development process, affects the quality and impacts the project delivery dates too.
- It involves identifying stakeholders, conducting interviews, developing use cases, documenting requirements, prioritizing them, validating them with the stakeholders, and reviewing them with development team. This process helps ensure the web application meets stakeholder needs and objectives, and is designed to function effectively and efficiently within the project timeline and budget.

#### ❖ Understanding the process:

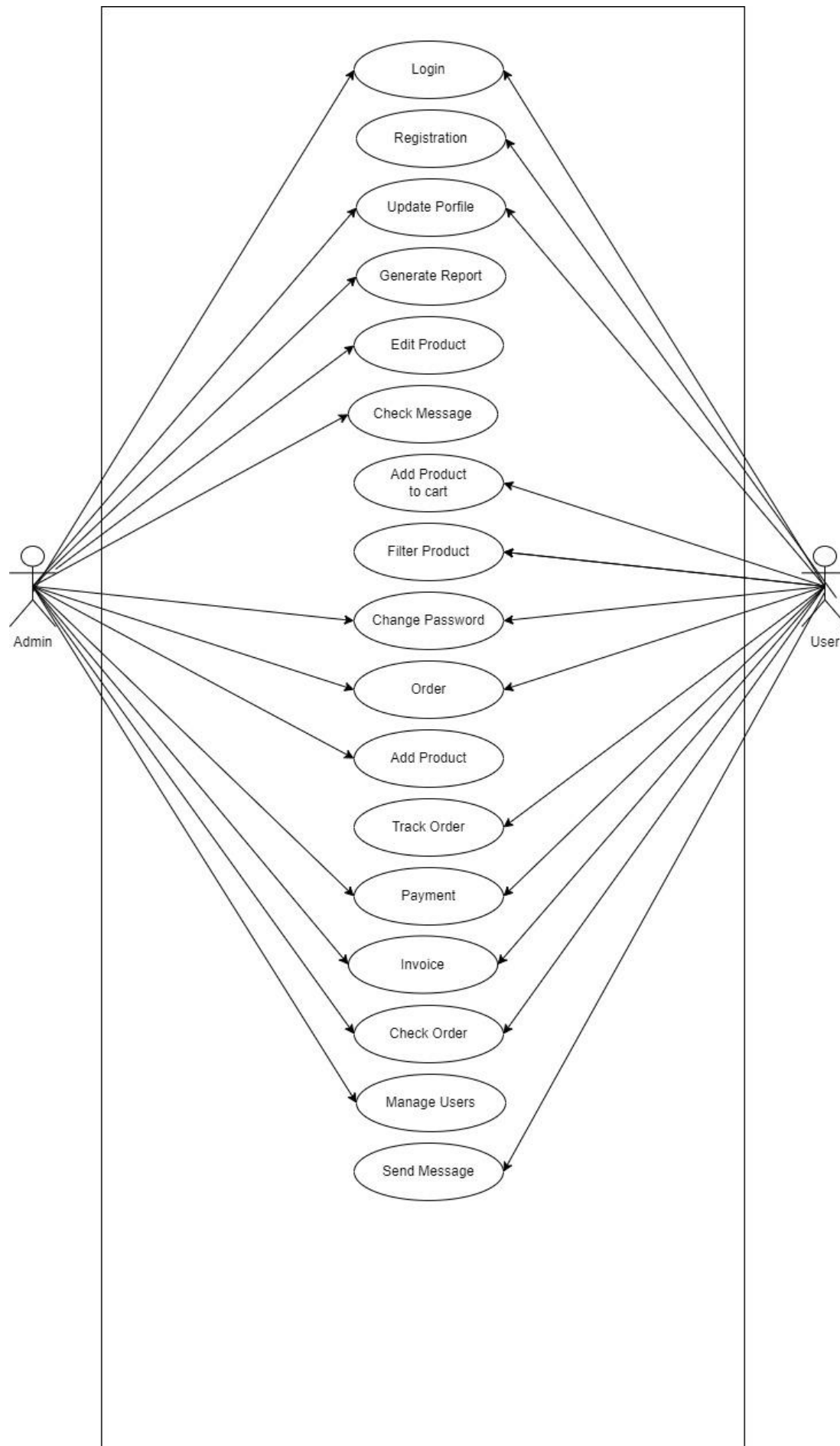
- Why do you need it?
- What problems will it solve?
- What do client need to know after they've selected the product?
- What do staff need to differently?
- What would happen if client does not checkout?
- How will the client know if the order is placed?

## ❖ Requirement Analysis:

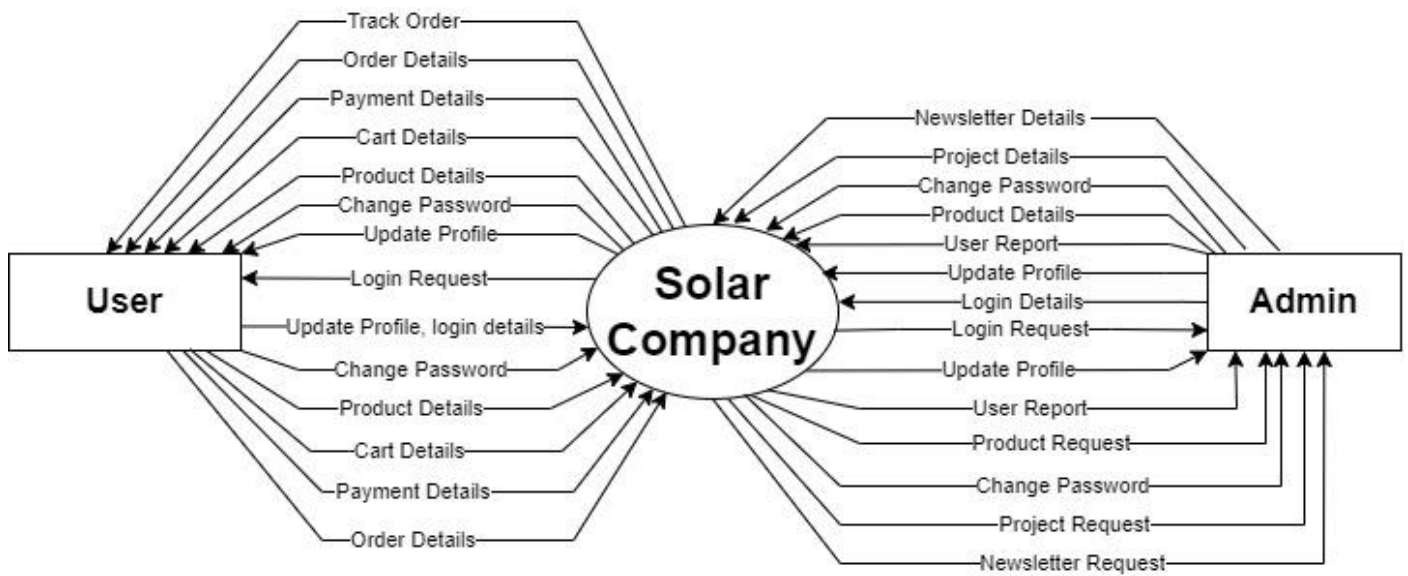
We analysis our gathered information and we have decided our system should have following functionalities.

- The system should have a register option.
- The user should be able to view details about the business, its goods, and services.
- The system must offer protection to data.
- The system must offer a secure registration option.
- Users ought to be able to purchase the goods they want.
- The system ought to accept online payments and produce bills with distinctive IDs.
- The user should be able to return the merchandise within a certain time frame if it is incompatible.
- The ability for users to submit and read evaluations and ratings.
- The administration must be able to control the staff.

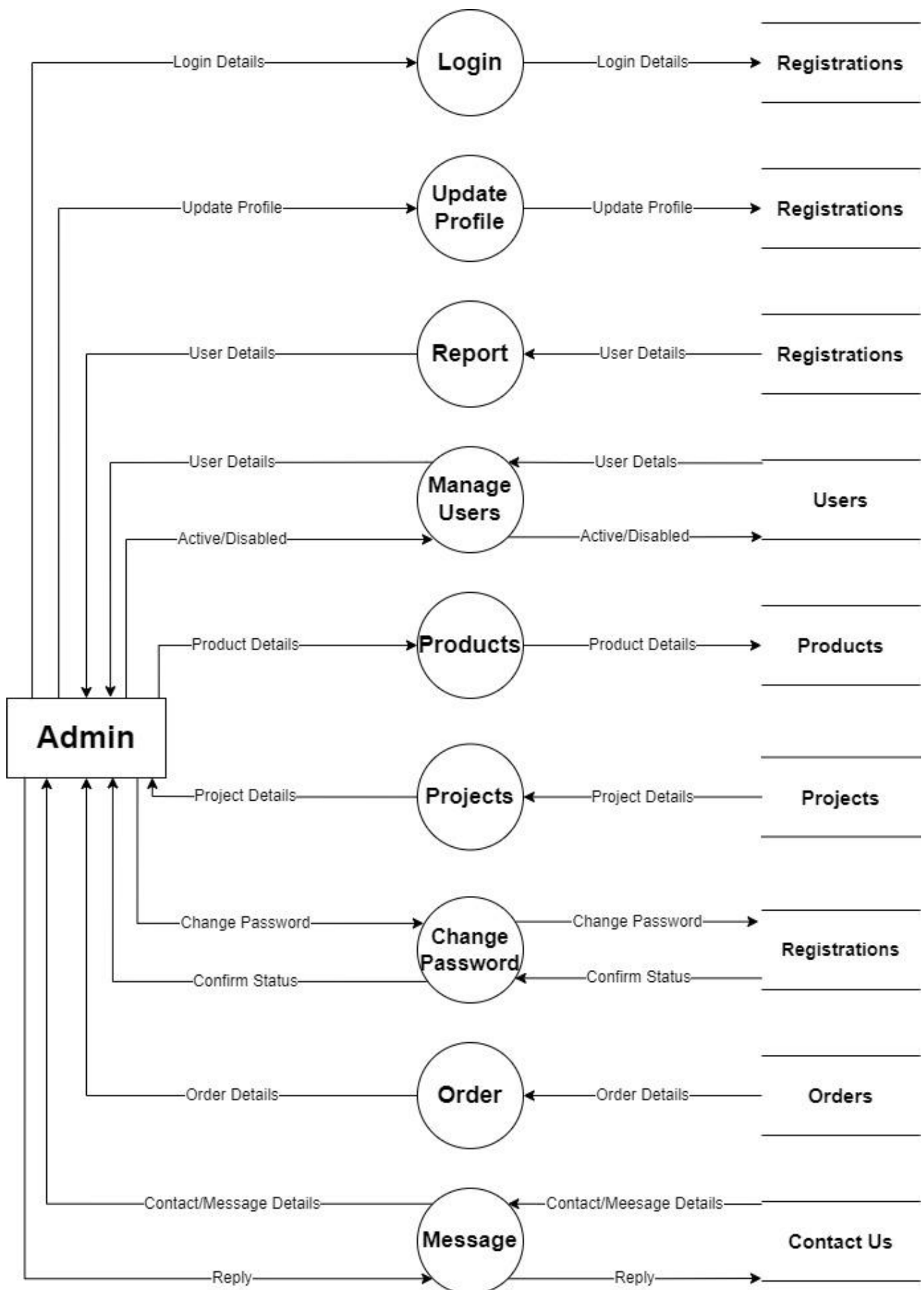
## 4.2 Use Case Diagram



## 4.3 Data Flow Diagram

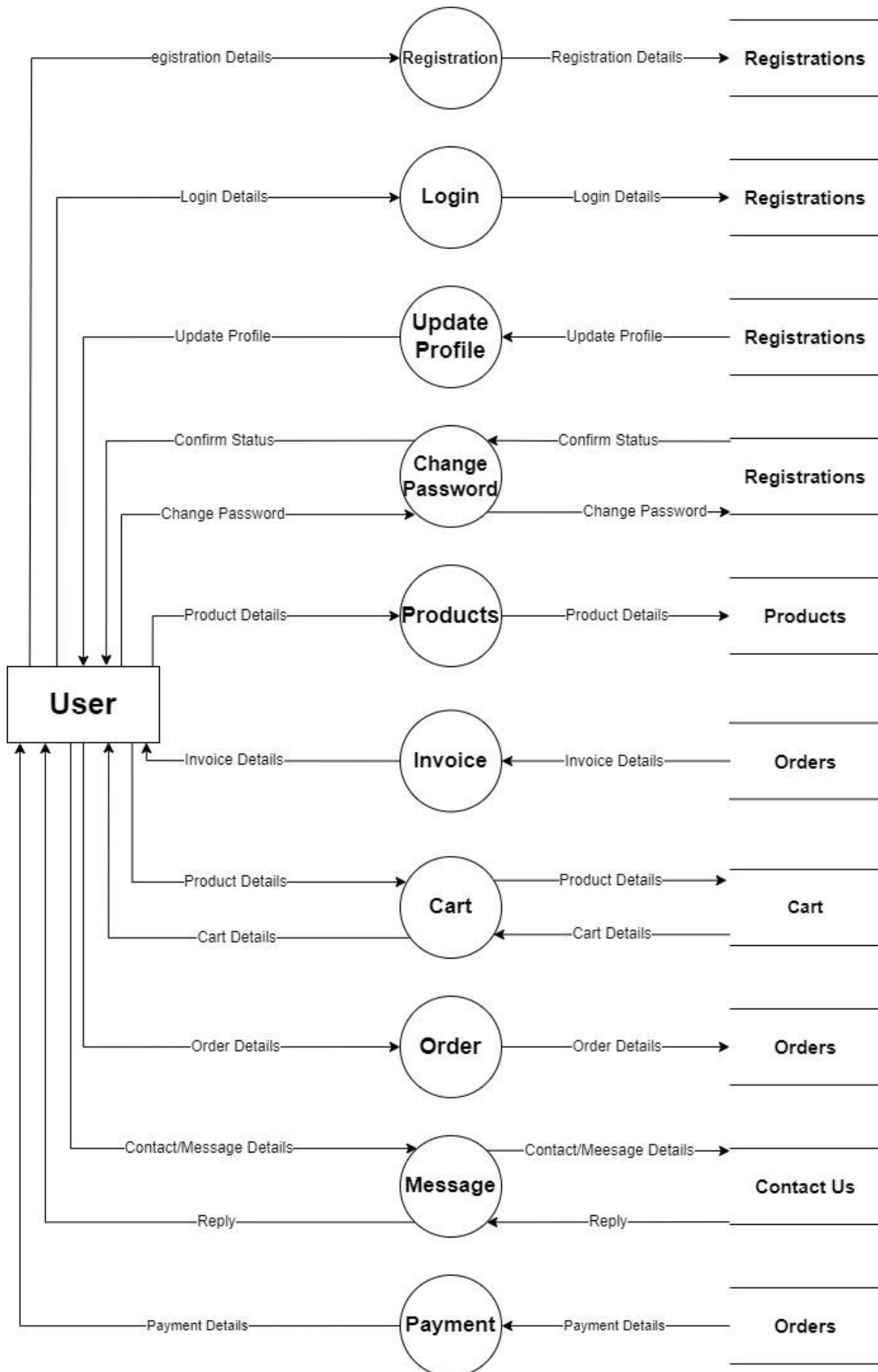


[Context Level]



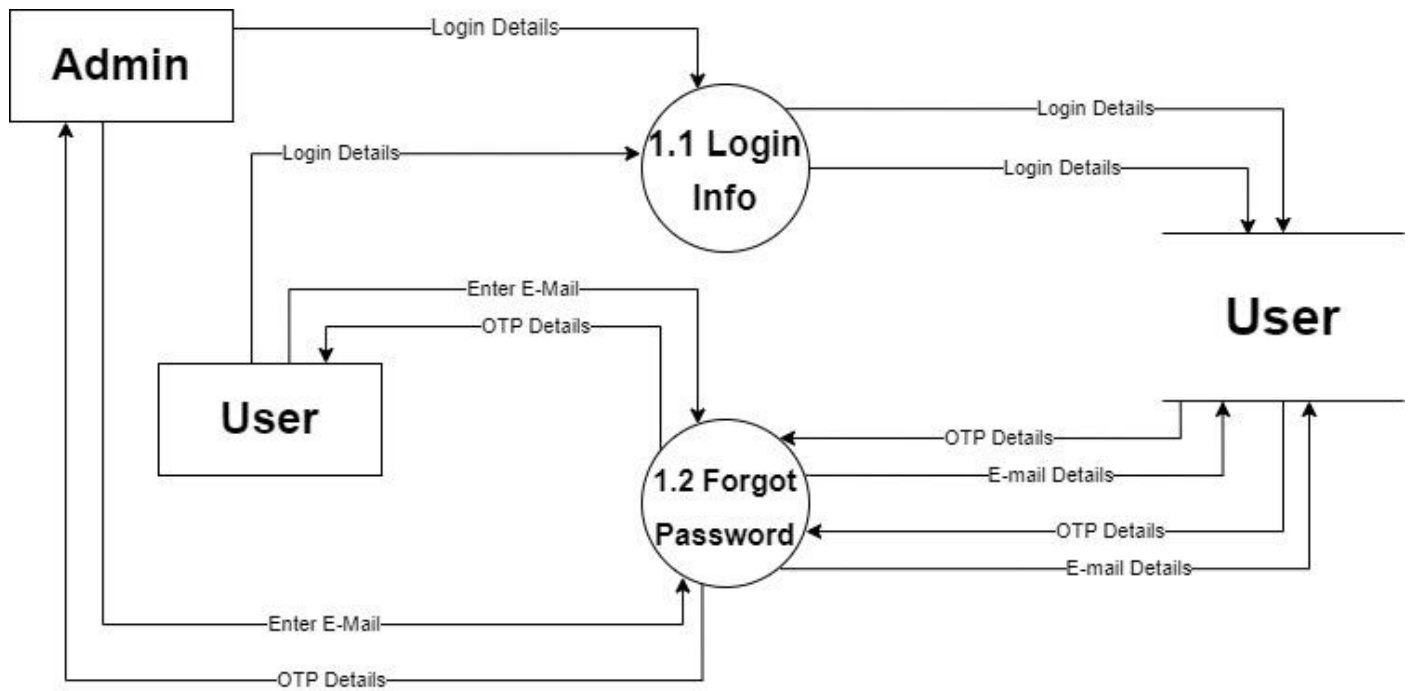
**[First level of Admin]**





**[First level of User]**

# [Second Level DFD]



## 5. System Design

### 5.1 Data Dictionary:

|                            |  |
|----------------------------|--|
| Name:                      | Login Detail   |
| Alias:                     | NULL   |
| Where used?/ How used?     | To login For User and Admin (Input/Output)   |
| Content Description:       | Email, Password  |
| Supplementary Information: | Email or Password must be Unique. Login Process takes detail and verify in database. |

|                            |  |
|----------------------------|--|
| Name:                      | Update Profile   |
| Alias:                     | NULL   |
| Where used?/ How used?     | To update data for User and Admin (Input)  |
| Content Description:       | Name, MobileNo., Email, Address, Pincode   |
| Supplementary Information: | Email or MobileNo. must be Unique. Update Profile Process takes detail and updates database. |

|                            |  |
|----------------------------|--|
| Name:                      | User Detail                              |
| Alias:                     | NULL                                     |
| Where used?/ How used?     | To show User Detail in Admin (Output)    |
| Content Description:       | Name, MobileNo., Email, Address, Pincode |
| Supplementary Information: | Admin can see user data.                 |

|                            |  |
|----------------------------|--|
| Name:                      | Product Detail                                       |
| Alias:                     | NULL   |
| Where used?/ How used?     | Product (Input/Output)                               |
| Content Description:       | Product id, Product name                             |
| Supplementary Information: | Product id must be Unique.<br>Admin can add Product. |

|                            |   |
|----------------------------|---|
| Name:                      | Change Password   |
| Alias:                     | NULL  |
| Where used?/ How used?     | Create New Password (Input)   |
| Content Description:       | Password  |
| Supplementary Information: | Enter old and new password.<br>If old password is correct than the user can create new password or else it won't allow. |

|                            |  |
|----------------------------|--|
| Name:                      | Order Details  |
| Alias:                     | NULL   |
| Where used?/ How used?     | Place Order or Order Status (Input/Output)   |
| Content Description:       | Product id, name, email, mobilenos., address, pincode, payment id, amount, order id, order date  |
| Supplementary Information: | Order id must be unique.<br>User can place the order.<br>Admin can see order status and details. |

|                            |  |
|----------------------------|--|
| Name:                      | Registration Detail  |
| Alias:                     | NULL   |
| Where used?/ How used?     | Registration For New User. (Input/Output)                      |
| Content Description:       | Name, email, address, pincode, password, User_id               |
| Supplementary Information: | User_id must be unique.<br>Only users can register themselves. |


|                            |   |
|----------------------------|---|
| Name:                      | Cart Detail                                   |
| Alias:                     | NULL  |
| Where used?/ How used?     | Product can be add to cart.<br>(Input/Output) |
| Content Description:       | Product id                                    |
| Supplementary Information: | User can add product to cart.                 |

|                            |  |
|----------------------------|--|
| Name:                      | Payment Detail   |
| Alias:                     | NULL   |
| Where used?/ How used?     | Payment for Products (Input)   |
| Content Description:       | User id, product id, payment id  |
| Supplementary Information: | Payment id is always unique.<br>User can pay online or cash on delivery. |


|                            |  |
|----------------------------|--|
| Name:                      | Invoice Detail   |
| Alias:                     | NULL   |
| Where used?/ How used?     | Generate Invoice on Purchase<br>(Input/Output)                               |
| Content Description:       | User id, product id, payment id, date  |
| Supplementary Information: | User and Admin can see invoice.<br>Admin can generate invoice for the order. |




## Table: cart

| Server: 127.0.0.1 » Database: project » Table: cart   |    |   |              |                    |            |      |                     |          |                               |
|---|----|---|--------------|--------------------|------------|------|---------------------|----------|-------------------------------|
| <a href="#">Browse</a> <a href="#">Structure</a> <a href="#">SQL</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Export</a> <a href="#">Import</a> <a href="#">Privileges</a> <a href="#">Operations</a> <a href="#">Tracking</a> |    |   |              |                    |            |      |                     |          |                               |
| <a href="#">Table structure</a> <a href="#">Relation view</a>   |    |   |              |                    |            |      |                     |          |                               |
|   | #  | Name  | Type         | Collation          | Attributes | Null | Default             | Comments | Extra                         |
| <input type="checkbox"/>  | 1  | sno  | int(30)      |                    |            | No   | None                |          | AUTO_INCREMENT                |
| <input type="checkbox"/>  | 2  | userid  | int(30)      |                    |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 3  | useremail   | varchar(70)  | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 4  | pid   | varchar(20)  | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 5  | pname   | varchar(80)  | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 6  | pdesc   | varchar(100) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 7  | pprice  | int(50)      |                    |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 8  | pquant  | int(20)      |                    |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 9  | ppricetot   | int(50)      |                    |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 10 | time  | timestamp    |                    |            | No   | current_timestamp() |          | ON UPDATE CURRENT_TIMESTAMP() |
| <input type="checkbox"/>  | 11 | ip  | varchar(30)  | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 12 | stat  | int(11)      |                    |            | No   | None                |          |                               |


## Table: contact

| Server: 127.0.0.1 » Database: project » Table: contact  |   |   |              |                    |            |      |                     |          |                               |
|---|---|---|--------------|--------------------|------------|------|---------------------|----------|-------------------------------|
| <a href="#">Browse</a> <a href="#">Structure</a> <a href="#">SQL</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Export</a> <a href="#">Import</a> <a href="#">Privileges</a> <a href="#">Operations</a> <a href="#">Tracking</a> |   |   |              |                    |            |      |                     |          |                               |
| <a href="#">Table structure</a> <a href="#">Relation view</a>   |   |   |              |                    |            |      |                     |          |                               |
|   | # | Name  | Type         | Collation          | Attributes | Null | Default             | Comments | Extra                         |
| <input type="checkbox"/>  | 1 | sno  | int(11)      |                    |            | No   | None                |          | AUTO_INCREMENT                |
| <input type="checkbox"/>  | 2 | userid  | int(30)      |                    |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 3 | username  | varchar(50)  | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 4 | useremail   | varchar(70)  | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 5 | subject   | varchar(100) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 6 | message   | varchar(500) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 7 | time  | timestamp    |                    |            | No   | current_timestamp() |          | ON UPDATE CURRENT_TIMESTAMP() |
| <input type="checkbox"/>  | 8 | ip  | varchar(50)  | utf8mb4_general_ci |            | No   | None                |          |                               |

## Table: newsltr

| Server: 127.0.0.1 » Database: project » Table: newsltr  |   |   |             |                    |            |      |                     |          |                               |
|---|---|---|-------------|--------------------|------------|------|---------------------|----------|-------------------------------|
| <a href="#">Browse</a> <a href="#">Structure</a> <a href="#">SQL</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Export</a> <a href="#">Import</a> <a href="#">Privileges</a> <a href="#">Operations</a> <a href="#">Tracking</a> |   |   |             |                    |            |      |                     |          |                               |
| <a href="#">Table structure</a> <a href="#">Relation view</a>   |   |   |             |                    |            |      |                     |          |                               |
|   | # | Name  | Type        | Collation          | Attributes | Null | Default             | Comments | Extra                         |
| <input type="checkbox"/>  | 1 | sno  | int(30)     |                    |            | No   | None                |          | AUTO_INCREMENT                |
| <input type="checkbox"/>  | 2 | useremail   | varchar(70) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 3 | time  | timestamp   |                    |            | No   | current_timestamp() |          | ON UPDATE CURRENT_TIMESTAMP() |
| <input type="checkbox"/>  | 4 | ip  | varchar(30) | utf8mb4_general_ci |            | No   | None                |          |                               |

## Table: product

| Server: 127.0.0.1 » Database: project » Table: product  |   |   |              |                    |            |      |                     |          |                               |
|---|---|---|--------------|--------------------|------------|------|---------------------|----------|-------------------------------|
| <a href="#">Browse</a> <a href="#">Structure</a> <a href="#">SQL</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Export</a> <a href="#">Import</a> <a href="#">Privileges</a> <a href="#">Operations</a> <a href="#">Tracking</a> |   |   |              |                    |            |      |                     |          |                               |
| <a href="#">Table structure</a> <a href="#">Relation view</a>   |   |   |              |                    |            |      |                     |          |                               |
|   | # | Name  | Type         | Collation          | Attributes | Null | Default             | Comments | Extra                         |
| <input type="checkbox"/>  | 1 | sno  | int(11)      |                    |            | No   | None                |          | AUTO_INCREMENT                |
| <input type="checkbox"/>  | 2 | pid   | varchar(100) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 3 | pname   | varchar(200) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 4 | pprice  | int(255)     |                    |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 5 | pdesc   | varchar(255) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 6 | imgpath   | varchar(200) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 7 | rating  | float        |                    |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 8 | time  | timestamp    |                    |            | No   | current_timestamp() |          | ON UPDATE CURRENT_TIMESTAMP() |
| <input type="checkbox"/>  | 9 | stat  | int(11)      |                    |            | No   | None                |          |                               |




## Table: project

| Server: 127.0.0.1 » Database: project » Table: project  |   |         |             |                    |            |      |                     |          |                               |
|---|---|---------|-------------|--------------------|------------|------|---------------------|----------|-------------------------------|
| <a href="#">Browse</a> <a href="#">Structure</a> <a href="#">SQL</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Export</a> <a href="#">Import</a> <a href="#">Privileges</a> <a href="#">Operations</a> <a href="#">Tracking</a> |   |         |             |                    |            |      |                     |          |                               |
| <a href="#">Table structure</a> <a href="#">Relation view</a>   |   |         |             |                    |            |      |                     |          |                               |
|   | # | Name    | Type        | Collation          | Attributes | Null | Default             | Comments | Extra                         |
| <input type="checkbox"/>  | 1 | proid   | int(11)     |                    |            | No   | None                |          | AUTO_INCREMENT                |
| <input type="checkbox"/>  | 2 | protile | varchar(50) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 3 | proloc  | varchar(50) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 4 | imgpath | varchar(50) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 5 | time    | timestamp   |                    |            | No   | current_timestamp() |          | ON UPDATE CURRENT_TIMESTAMP() |
| <input type="checkbox"/>  | 6 | stat    | int(11)     |                    |            | No   | None                |          |                               |

## Table: regdb

| Server: 127.0.0.1 » Database: project » Table: regdb  |   |           |              |                    |            |      |                     |          |                               |
|---|---|-----------|--------------|--------------------|------------|------|---------------------|----------|-------------------------------|
| <a href="#">Browse</a> <a href="#">Structure</a> <a href="#">SQL</a> <a href="#">Search</a> <a href="#">Insert</a> <a href="#">Export</a> <a href="#">Import</a> <a href="#">Privileges</a> <a href="#">Operations</a> <a href="#">Tracking</a> |   |           |              |                    |            |      |                     |          |                               |
| <a href="#">Table structure</a> <a href="#">Relation view</a>   |   |           |              |                    |            |      |                     |          |                               |
|   | # | Name      | Type         | Collation          | Attributes | Null | Default             | Comments | Extra                         |
| <input type="checkbox"/>  | 1 | userid    | int(11)      |                    |            | No   | None                |          | AUTO_INCREMENT                |
| <input type="checkbox"/>  | 2 | username  | varchar(50)  | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 3 | useremail | varchar(50)  | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 4 | password  | varchar(100) | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 5 | time      | timestamp    |                    |            | No   | current_timestamp() |          | ON UPDATE CURRENT_TIMESTAMP() |
| <input type="checkbox"/>  | 6 | ip        | varchar(30)  | utf8mb4_general_ci |            | No   | None                |          |                               |
| <input type="checkbox"/>  | 7 | stat      | int(11)      |                    |            | No   | None                |          |                               |

## Table: user

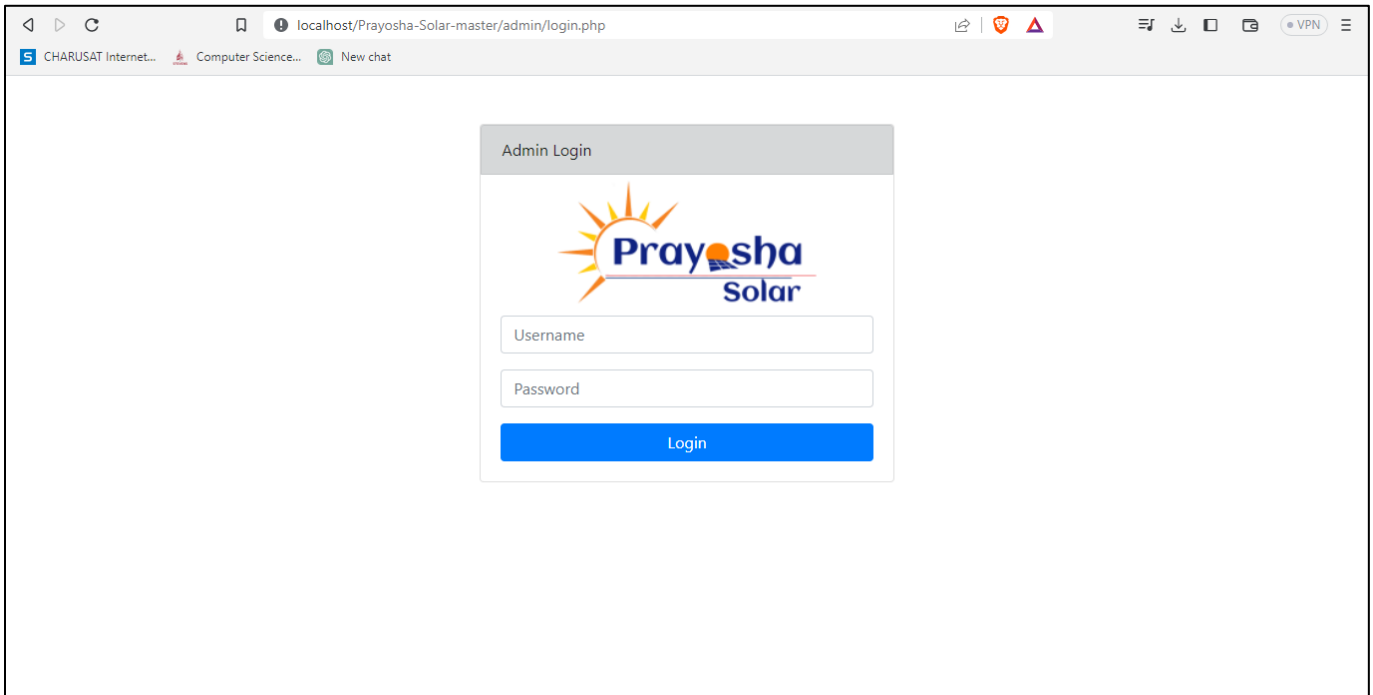
| Server: 127.0.0.1 » Database: project » Table: user         |   |   |             |                    |            |      |         |          |                |
|---|---|---|-------------|--------------------|------------|------|---------|----------|----------------|
| Browse Structure SQL Search Insert Export Import Privileges |   |   |             |                    |            |      |         |          |                |
| Table structure Relation view                               |   |   |             |                    |            |      |         |          |                |
|   | # | Name  | Type        | Collation          | Attributes | Null | Default | Comments | Extra          |
| <input type="checkbox"/>                                    | 1 | user_id  | int(11)     |                    |            | No   | None    |          | AUTO_INCREMENT |
| <input type="checkbox"/>                                    | 2 | name  | varchar(30) | utf8mb4_general_ci |            | No   | None    |          |                |
| <input type="checkbox"/>                                    | 3 | username  | varchar(30) | utf8mb4_general_ci |            | No   | None    |          |                |
| <input type="checkbox"/>                                    | 4 | password  | text        | utf8mb4_general_ci |            | No   | None    |          |                |

## 5.2 Screen Layouts:

### 5.2.1 Input Design


#### [Admin Side Input Design]

##### ➤ Admin side Login



The screenshot shows a web browser window with the address bar displaying 'localhost/Prayosha-Solar-master/admin/login.php'. The page features a login form titled 'Admin Login' with the 'Prayosha Solar' logo. The form includes a 'Username' input field, a 'Password' input field, and a blue 'Login' button.

Admin Login



Username

Password

Login

## ➤ Admin side product management

The screenshot displays the 'Prayosha - Admin Panel' interface. On the left is a dark sidebar with navigation links: Home, Users, Disabled Users, Products, Projects, Deleted Project, Contact Us, Newsletter, and Orders. The main content area is titled 'Products' and includes an 'Add Product' button. Below the title, there's a 'Show 10 entries' dropdown and a search bar. A table lists the products with columns: Sr No., Product ID, Product Name, Product Price, Product Description, Image Path, Time, Status, and Options. One product is listed: 'Solar Panel' with ID 'a1', price '18000', and description '330KW Polycrystal'. The 'Options' column for this product contains 'Edit' and 'Delete' buttons. Below the table, it says 'Showing 1 to 1 of 1 entries' and has 'Previous', '1', and 'Next' pagination links. At the bottom, a copyright notice reads: 'Copyright 2022-23 Prayosha Solar. all right reserved - designed by Atmik X Prapti.'

| Sr No. | Product ID | Product Name | Product Price | Product Description | Image Path  | Time                | Status | Options                                       |
|--------|------------|--------------|---------------|---------------------|-------------|---------------------|--------|---|
| 1      | a1         | Solar Panel  | 18000         | 330KW Polycrystal   | prdct_1.jpg | 2023-04-07 15:42:15 | 1      | <button>Edit</button> <button>Delete</button> |

## ➤ Admin side add project

The screenshot shows the 'Prayosha - Admin Panel' interface for the 'Projects' section. The sidebar is the same as in the previous screenshot. The main content area is titled 'Project' and includes an 'Add Project' button. Below the title, there's a 'Show 10 entries' dropdown and a search bar. A table lists the projects with columns: Sr No., Project Title, Product Location, Image Path, Time, Status, and Options. Eight projects are listed, each with an 'Edit' and 'Delete' button in the 'Options' column. The projects are: RADHNESADA SOLAR PARK, HARSAD SOLAR PARK, GUJARAT SOLAR PARK, AZURE SOLAR POWER PARK, AATASH SOLAR POWER PLANT, DHOLERA SOLAR PARK PH-I, LIVE LIFE PROJECT, and EASY GENERATE SOLAR PARK.

| Sr No. | Project Title            | Product Location    | Image Path | Time                | Status | Options                                       |
|--------|--------------------------|---------------------|------------|---------------------|--------|---|
| 1      | RADHNESADA SOLAR PARK    | BANASKANTHA, GJ     | pj_1.jpg   | 2023-04-04 18:07:19 | 1      | <button>Edit</button> <button>Delete</button> |
| 2      | HARSAD SOLAR PARK        | BANASKANTHA, GJ     | pj_2.jpg   | 2023-04-04 18:05:11 | 1      | <button>Edit</button> <button>Delete</button> |
| 3      | GUJARAT SOLAR PARK       | CHARANKA, GJ        | pj_3.jpg   | 2023-04-04 18:05:12 | 1      | <button>Edit</button> <button>Delete</button> |
| 4      | AZURE SOLAR POWER PARK   | KHADODA, GJ         | pj_4.jpg   | 2023-04-04 18:06:28 | 1      | <button>Edit</button> <button>Delete</button> |
| 5      | AATASH SOLAR POWER PLANT | SARDI SARKHANDI, GJ | pj_5.jpg   | 2023-04-04 17:46:55 | 1      | <button>Edit</button> <button>Delete</button> |
| 6      | DHOLERA SOLAR PARK PH-I  | DHOLERA, GJ         | pj_6.jpg   | 2023-04-04 17:46:58 | 1      | <button>Edit</button> <button>Delete</button> |
| 7      | LIVE LIFE PROJECT        | AHMEDABAD, GJ       | pj_7.jpg   | 2023-04-04 17:49:20 | 1      | <button>Edit</button> <button>Delete</button> |
| 8      | EASY GENERATE SOLAR PARK | DIU, GJ             | pj_8.jpg   | 2023-04-05 08:52:58 | 1      | <button>Edit</button> <button>Delete</button> |

## ➤ Admin side edit user

- Home
- Users
- Disabled Users
- Products
- Projects
- Deleted Project
- Contact Us
- Newsletter
- Orders

## Registered User

Show 10 entries

Search:

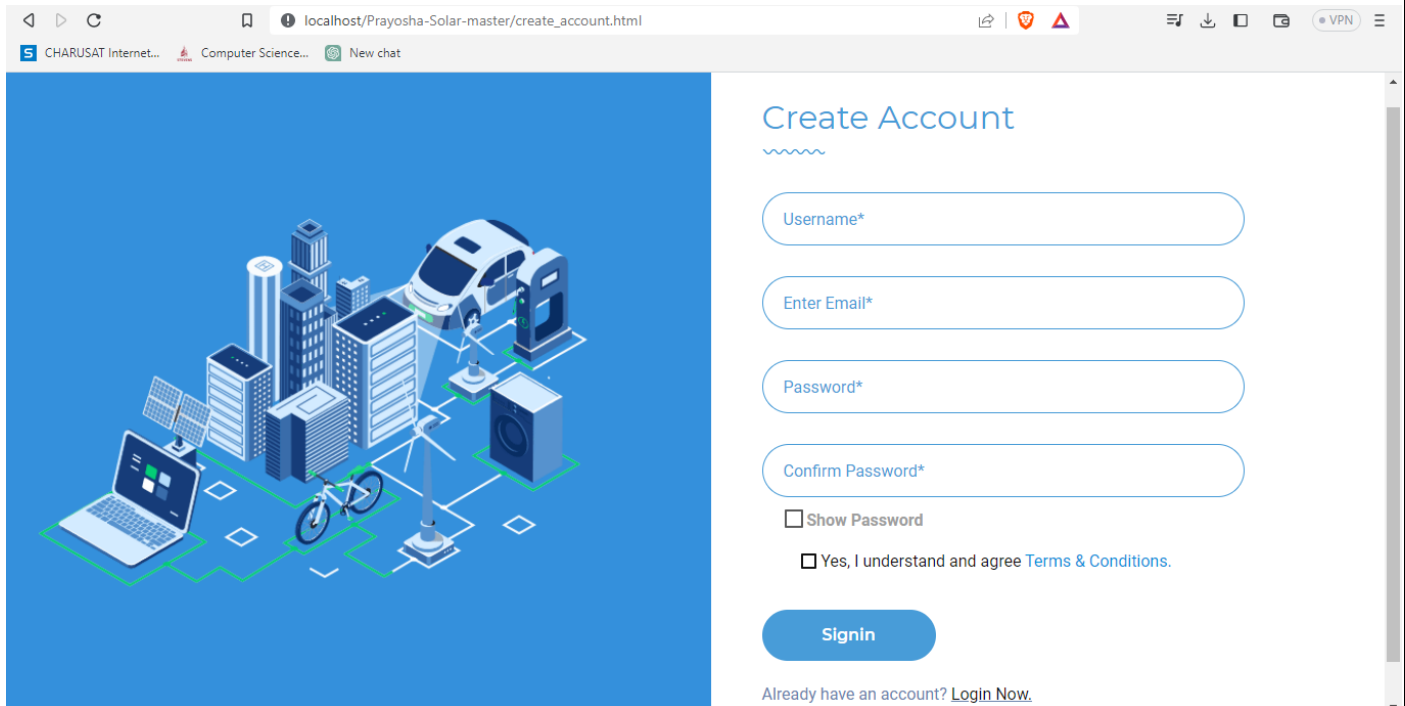
| User ID | Username | Useremail        | Password                         | Time                | IP Address | Status | Options                                      |
|---------|----------|------------------|----------------------------------|---------------------|------------|--------|--|
| 1       | atmik    | atmik@gmail.com  | 0cc175b9c0f1b6a831c399e269772661 | 2023-04-05 09:33:44 | ::1        | 1      | <a href="#">Edit</a> <a href="#">Disable</a> |
| 2       | Garvi    | garvi@gmail.com  | c4ca4238a0b923820dcc509a6f75849b | 2023-04-02 05:41:02 | ::1        | 1      | <a href="#">Edit</a> <a href="#">Disable</a> |
| 3       | Akshar   | akshar@gmail.com | 0cc175b9c0f1b6a831c399e269772661 | 2023-04-02 05:39:40 | ::1        | 1      | <a href="#">Edit</a> <a href="#">Disable</a> |

Showing 1 to 3 of 3 entries

Previous 1 Next

# [User Side Input Design]

## ➤ User Side Registration



localhost/Prayosha-Solar-master/create\_account.html

CHARUSAT Internet... Computer Science... New chat

### Create Account

Username\*

Enter Email\*

Password\*

Confirm Password\*

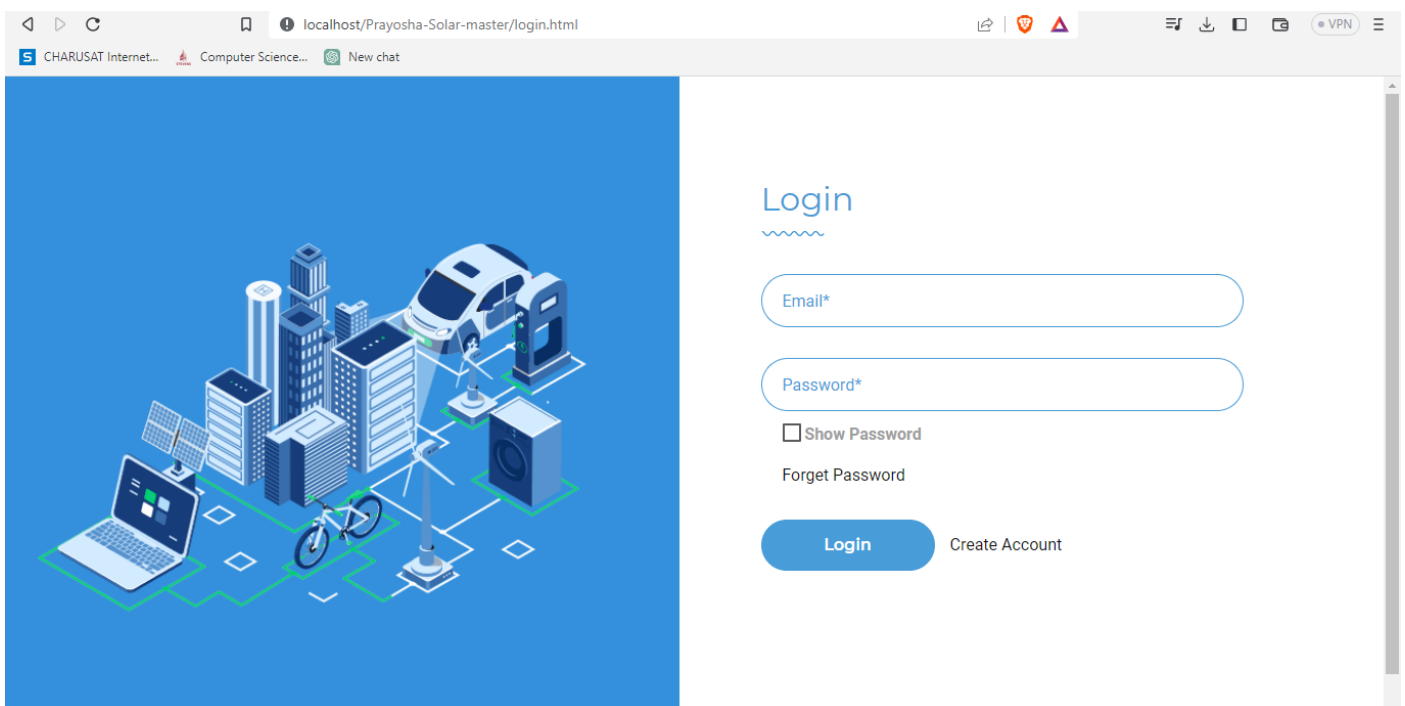
☐ Show Password

☐ Yes, I understand and agree [Terms & Conditions.](#)

[SignIn](#)

Already have an account? [Login Now.](#)

## ➤ User Side Login



localhost/Prayosha-Solar-master/login.html

CHARUSAT Internet... Computer Science... New chat

### Login

Email\*

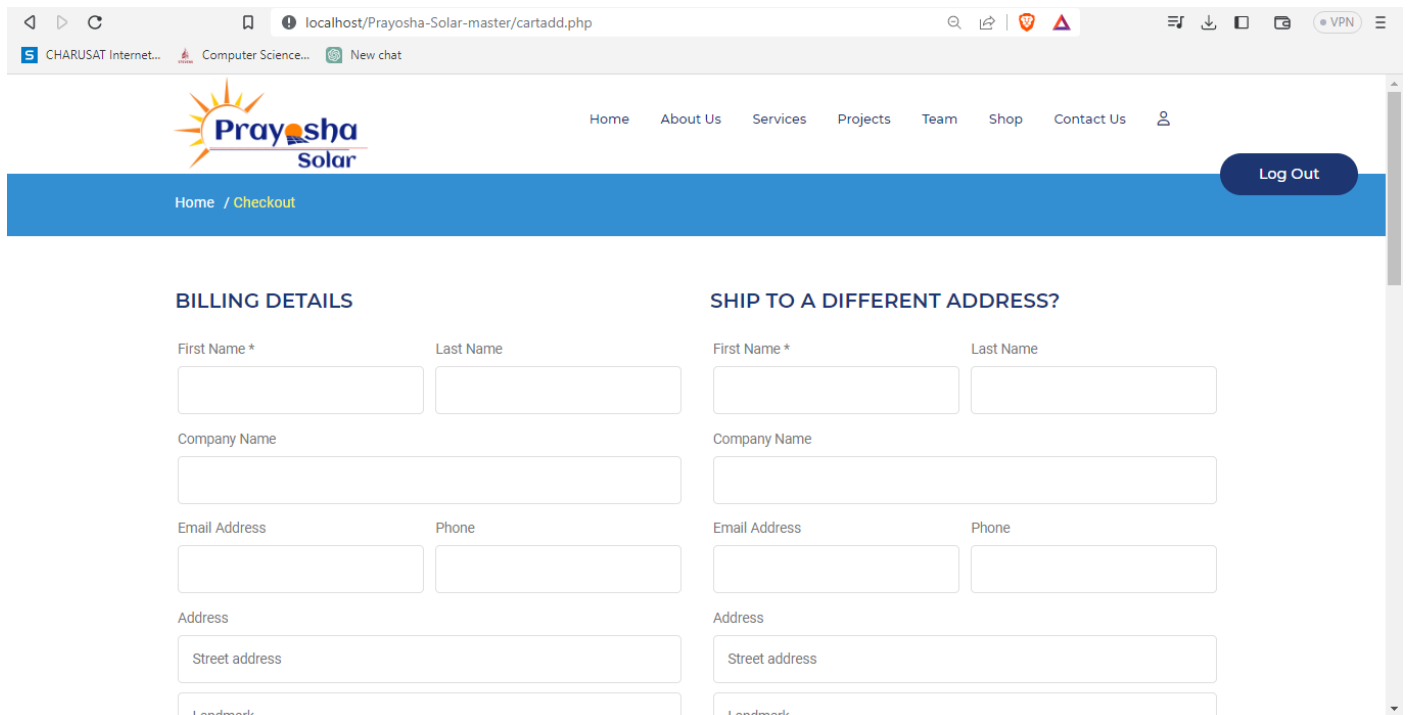
Password\*

☐ Show Password

[Forget Password](#)

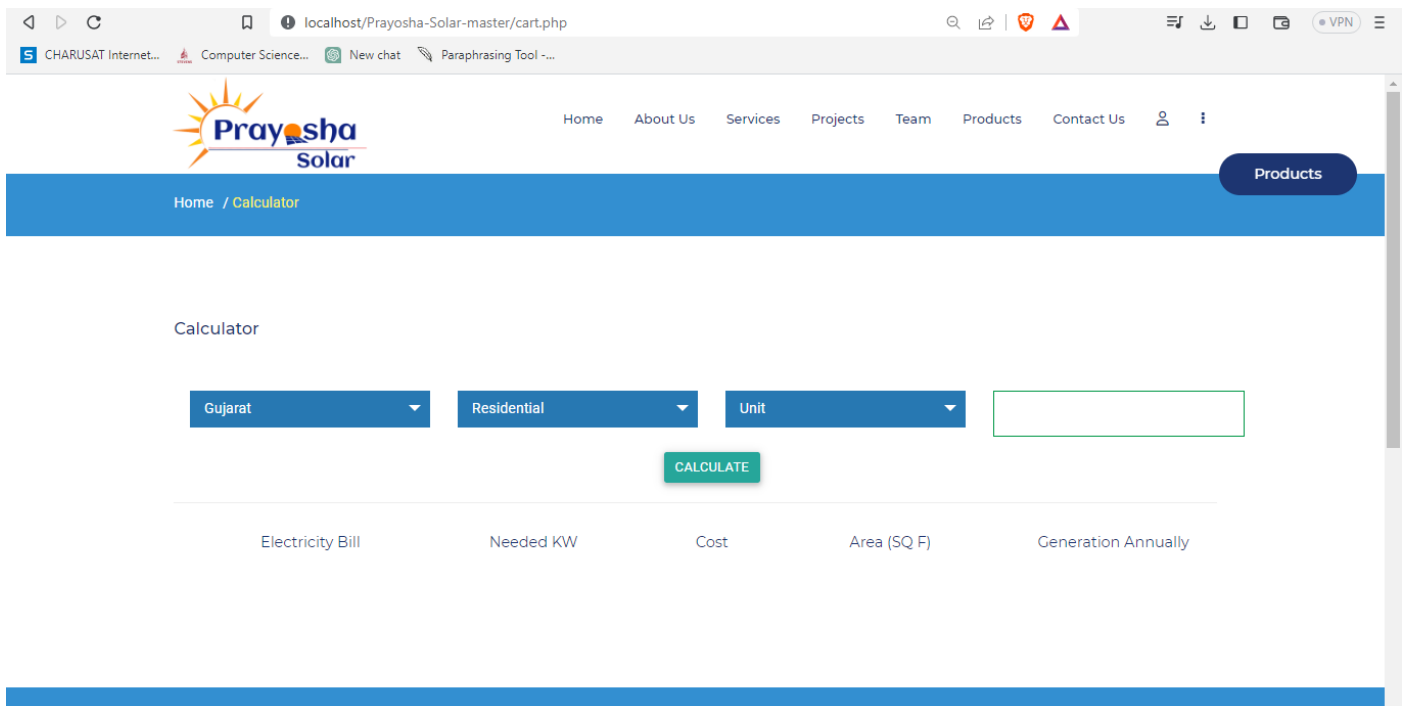
[Login](#) [Create Account](#)

## ➤ User side Order Details



The screenshot shows the checkout page of the Prayosha Solar website. The browser address bar indicates the URL is localhost/Prayosha-Solar-master/cartadd.php. The website header includes the Prayosha Solar logo, navigation links (Home, About Us, Services, Projects, Team, Shop, Contact Us), and a user profile icon. A blue banner at the top contains the text 'Home / Checkout' and a 'Log Out' button. The main content area is divided into two columns. The left column, titled 'BILLING DETAILS', contains input fields for First Name \*, Last Name, Company Name, Email Address, Phone, and Address (Street address and Landmark). The right column, titled 'SHIP TO A DIFFERENT ADDRESS?', contains identical input fields for shipping information.

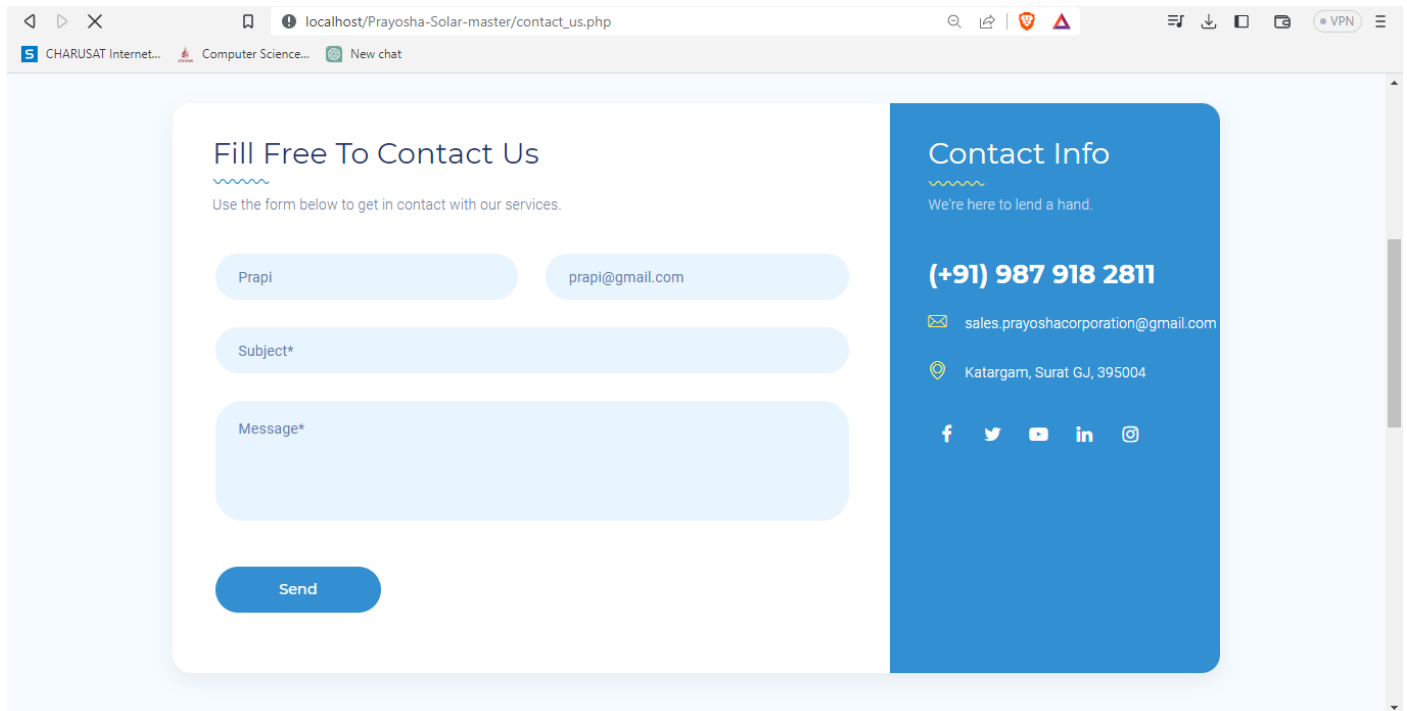
## ➤ User side Calculator



The screenshot shows the calculator page of the Prayosha Solar website. The browser address bar indicates the URL is localhost/Prayosha-Solar-master/cart.php. The website header includes the Prayosha Solar logo, navigation links (Home, About Us, Services, Projects, Team, Products, Contact Us), and a user profile icon. A blue banner at the top contains the text 'Home / Calculator' and a 'Products' button. The main content area is titled 'Calculator'. It features three dropdown menus: 'Gujarat', 'Residential', and 'Unit'. To the right of these is an empty input field. Below the dropdowns is a green 'CALCULATE' button. At the bottom, there is a table with five columns: Electricity Bill, Needed KW, Cost, Area (SQ F), and Generation Annually.

| Electricity Bill | Needed KW | Cost | Area (SQ F) | Generation Annually |
|------------------|-----------|------|-------------|---------------------|
|------------------|-----------|------|-------------|---------------------|

## ➤ User side contact panel



The screenshot shows a web browser window with the address bar displaying `localhost/Prayosha-Solar-master/contact_us.php`. The browser has three tabs: "CHARUSAT Internet...", "Computer Science...", and "New chat". The page content is divided into two main sections:

### Fill Free To Contact Us

Use the form below to get in contact with our services.

Prapi prapi@gmail.com

Subject\*

Message\*

Send

### Contact Info

We're here to lend a hand.

**(+91) 987 918 2811**

✉ sales.prayoshacorporation@gmail.com

📍 Katargam, Surat GJ, 395004

f t y in @



## 5.2.2 Output Design

### [Admin Side Output Design]

#### ➤ Admin side user reports

The screenshot displays the Prayosha Admin Panel interface. On the left is a dark sidebar with navigation links: Home, Users, Disabled Users, Products, Projects, Deleted Project, Contact Us, Newsletter, and Orders. The main content area is titled "Registered User" and features a table of user data. Above the table, there is a "Show 10 entries" dropdown and a search bar. The table has columns for User ID, Username, Useremail, Password, Time, IP Address, Status, and Options. It contains three rows of user data. Below the table, it says "Showing 1 to 3 of 3 entries" and includes "Previous", "1", and "Next" pagination links. The footer of the page states "Copyright 2022-23 Prayosha Solar. all right reserved - designed by Atmik X Prapti."

Prayosha - Admin Panel Admin

### Registered User

Show  entries Search:

| User ID <small>↑↓</small> | Username <small>↑↓</small> | Useremail <small>↑↓</small> | Password <small>↑↓</small>       | Time <small>↑↓</small> | IP Address <small>↑↓</small> | Status <small>↑↓</small> | Options <small>↑↓</small>                      |
|---------------------------|----------------------------|-----------------------------|----------------------------------|------------------------|------------------------------|--------------------------|--|
| 1                         | atmik                      | atmik@gmail.com             | 0cc175b9c0f1b6a831c399e269772661 | 2023-04-05 09:33:44    | ::1                          | 1                        | <button>Edit</button> <button>Disable</button> |
| 2                         | Garvi                      | garvi@gmail.com             | c4ca4238a0b923820dcc509a6f75849b | 2023-04-02 05:41:02    | ::1                          | 1                        | <button>Edit</button> <button>Disable</button> |
| 3                         | Akshar                     | akshar@gmail.com            | 0cc175b9c0f1b6a831c399e269772661 | 2023-04-02 05:39:40    | ::1                          | 1                        | <button>Edit</button> <button>Disable</button> |

Showing 1 to 3 of 3 entries Previous **1** Next

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## ➤ Admin side disabled users

localhost/Prayosha-Solar-master/admin/disabledusers.php

Prayosha - Admin Panel

Admin

### Disabled User

Show 10 entries

Search:

| User ID | Username | Useremail        | Password                         | Time                | IP Address | Status | Options              |
|---------|----------|------------------|----------------------------------|---------------------|------------|--------|----------------------|
| 3       | Akshar   | akshar@gmail.com | 0cc175b9c0f1b6a831c399e269772661 | 2023-04-07 22:04:28 | ::1        | 0      | <a href="#">Edit</a> |

Showing 1 to 1 of 1 entries

Previous 1 Next

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## ➤ User side Contact details

localhost/Prayosha-Solar-master/admin/contact.php

Prayosha - Admin Panel

Admin

### Contact Us

Show 10 entries

Search:

| Sr No. | User ID | Username | Useremail        | Subject | Message      | Time                | IP Address |
|--------|---------|----------|------------------|---------|--------------|---------------------|------------|
| 1      | 2       | Akshar   | akshar@gmail.com | tial    | hello world! | 2023-03-20 10:23:57 | ::1        |
| 2      | 0       | hari     | hari@gmail.com   | guest   | guest        | 2023-03-20 10:24:44 | ::1        |
| 3      | 1       | atmik    | atmik@gmail.com  | aa      | a            | 2023-03-20 10:57:54 | ::1        |
| 4      | 1       | atmik    | atmik@gmail.com  | aa      | a            | 2023-03-20 11:00:40 | ::1        |
| 5      | 1       | atmik    | atmik@gmail.com  | hey     | haha         | 2023-03-20 11:01:04 | ::1        |
| 6      | 0       | akshar   | a@g.com          | a       | aaaaaaa      | 2023-03-20 11:01:21 | ::1        |
| 7      | 2       | Akshar   | akshar@gmail.com | hey     | a            | 2023-03-20 11:02:12 | ::1        |
| 8      | 2       | Akshar   | akshar@gmail.com | aa      | a            | 2023-03-20 11:03:32 | ::1        |
| 9      | 0       | akshar   | a@g.com          | sdf     | fds          | 2023-03-20 11:04:22 | ::1        |

## ➤ Admin side newsletter

localhost/Prayosha-Solar-master/admin/newsletter.php

Prayosha - Admin Panel

Admin

Home  
Users  
Disabled Users  
Products  
Projects  
Deleted Project  
Contact Us  
Newsletter  
Orders

### Newsletter

Show 10 entries Search:

| Sr No. | Useremail       | Time                | IP Address |
|--------|-----------------|---------------------|------------|
| 1      | aksaf@gmail.com | 2023-03-20 15:38:17 | ::1        |
| 2      | aksaf@gmail.com | 2023-03-20 15:40:15 | ::1        |
| 3      | aksaf@gmail.com | 2023-03-20 15:40:44 | ::1        |
| 4      | aksaf@gmail.com | 2023-03-24 06:57:33 | ::1        |
| 5      | aksaf@gmail.com | 2023-03-24 07:45:14 | ::1        |
| 6      | aksaf@gmail.com | 2023-03-24 07:47:02 | ::1        |
| 7      | aksaf@gmail.com | 2023-03-24 08:33:58 | ::1        |
| 8      | aksaf@gmail.com | 2023-03-27 08:09:31 | ::1        |
| 9      | abc@gmail.com   | 2023-03-29 09:29:41 | ::1        |

## ➤ Admin Side order

localhost/Prayosha-Solar-master/admin/order.php

Prayosha - Admin Panel

Admin

Home  
Users  
Disabled Users  
Products  
Projects  
Deleted Project  
Contact Us  
Newsletter  
Orders

### Orders

Show 10 entries Search:

| Sr No. | User ID | Useremail       | Product ID | Product Name | Product Description   | Product Price | Quantity | Price Total | Time                | IP Address |
|--------|---------|-----------------|------------|--------------|-----------------------|---------------|----------|-------------|---------------------|------------|
| 1      | 1       | atmik@gmail.com | a3         | Solar Panel  | dfskj                 | 50000         | 2        | 100000      | 2023-04-07 05:05:10 | ::1        |
| 2      | 1       | atmik@gmail.com | a1         | ACDB         | Rayzon 350KW Monoperc | 75000         | 3        | 225000      | 2023-04-07 05:05:10 | ::1        |

Showing 1 to 2 of 2 entries

Previous 1 Next

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## ➤ Admin side dashboard

The screenshot displays the Prayosha Admin Panel. The browser address bar shows the URL `localhost/Prayosha-Solar-master/admin/index.php`. The page title is "Prayosha - Admin Panel". The sidebar on the left contains the following navigation items: Home, Users, Disabled Users, Products, Projects, Deleted Project, Contact Us, Newsletter, and Orders. The main content area, titled "Dashboard / Overview", features four summary cards:

| Category | Total No. | View Details                 |
|----------|-----------|------------------------------|
| Users    | 3         | <a href="#">View Details</a> |
| Orders   | 2         | <a href="#">View Details</a> |
| Products | 1         | <a href="#">View Details</a> |
| Projects | 8         | <a href="#">View Details</a> |

The footer of the dashboard states: "Copyright 2022-23 Prayosha Solar. all right reserved - designed by Atmik X Prapti."

## 6. Software Testing

### [Admin]

#### ❖ Login:

| Test Field | Test Data                      | Valid / Invalid | Test Result  |
|------------|--------------------------------|-----------------|--|
| Email Id   | Empty                          | Invalid         | Please enter Email Id  |
|            | shreya.com                     | Invalid         | Please enter valid Email Id                                    |
|            | shreya36@gmail.com             | Valid           | Inputted text is correct                                       |
| Password   | Empty                          | Invalid         | Please enter password  |
|            | shreya36                       | Valid           | Given password is same as exist in database                    |
| Login      | Empty                          | Invalid         | Please enter Email Id and password                             |
|            | shreya@gmail.com<br>shreya     | Invalid         | Email or password incorrect                                    |
|            | shreya36@gmail.com<br>shreya36 | Valid           | If Email and password is correct than login will be successful |

#### ❖ Billing Details:

| Test Field  | Test Data   | Valid / Invalid | Test Result                |
|-------------|---|-----------------|----------------------------|
| First Name: | Empty   | Invalid         | Please enter First Name    |
|             | Shreya  | Valid           | Inputted text is valid     |
| Last Name:  | Empty   | Invalid         | Please enter Last Name     |
|             | Patel   | Valid           | Inputted text is valid     |
| Email Id:   | Empty   | Invalid         | Please enter Email Id      |
|             | <a href="mailto:shreya@gmail.com">shreya@gmail.com</a>      | Valid           | Inputted email id is valid |
| Phone:      | Empty   | Invalid         | Please enter mobile no.    |
|             | 90xxxxxxxx  | Valid           | Inputted text is correct   |
| Address     | Empty   | Invalid         | Please enter address       |
|             | 57, Rachna Society,<br>Ring Road, Surat,<br>391490, Gujarat | Valid           | Inputted address is valid  |

❖ **Change Password:**

| Test Field       | Test Data  | Valid / Invalid | Test Result  |
|------------------|------------|-----------------|--|
| Old Password     | Empty      | Invalid         | Please enter old password  |
|                  | 12345      | Invalid         | Please enter valid password (if the password does not match in database) |
|                  | shreya@369 | Valid           | Given password is same as in database                                    |
| New Password     | Empty      | Invalid         | Please enter new password  |
|                  | Shreya1357 | Valid           | Inputted text is accepted  |
| Confirm Password | Empty      | Invalid         | Please enter new password  |
|                  | 1357       | Invalid         | Password mismatched (if password does not match new password)            |
|                  | Shreya1357 | Valid           | Password changed successfully  |

---

## 7. Future Enhancement

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### Future Enhancements:

- Info on current solar production
- Visualization and design of a virtual solar system
- Integrate energy storage
- Analysis and monitoring of energy use
- Social components and game mechanics
- Troubleshooting and remote supervision
- Individualized energy-saving advice
- Adaptation to smart house technology
- Improved customer service and chatbot help
- Report generation and analytics for solar installers.

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## 8. References and Bibliography

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1. W3School (<https://www.w3school.com/>)
2. GitHub (<https://github.com/>)
3. Solar Energy International (SEI)  
(<https://www.solarenergy.org/>)
4. Solar Energy Corporation of India Limited (SECI)  
(<https://seci.co.in/>)
5. SQL Injection by PortSwigger (<https://portswigger.net/web-security/sql-injection>)
6. SQL Injection Defense by Acunetix  
(<https://www.acunetix.com/blog/sql-injection-defense/>)