

SARVAJANIK COLLEGE OF ENGINEERING AND TECHNOLOGY  
**COMPUTER ENGINEERING DEPARTMENT**



**B. Tech. IV, CO, SEM - VIII, DIV - I**  
**(Term : EVEN - 2025 - 26)**

Internship Presentation  
on  
**“MERN Stack Internship”**

**Subject Name :** Internship (BTCO16804)

**Prepared and Presented by**  
Krishna Kankotiya (Enrollment No. : ET22BTCO051)

**Guided by**  
Prof. (Dr.) Purvi Tandel

# Details of Company/Industry

- Name : Opash Software
- Address : 129, The Galleria Shopping Hub, Nr. Sanjeev Kumar Auditorium, Pal, Adajan, Surat
- Web-site : <https://www.opashsoftware.com/>
- Industry mentor's Details :
  - Name : Swapnil Raval
  - Contact number : +91 6359012471
  - E-mail : sra.opash@gmail.com

# Company Profile

- Software Development Company based in Surat, India
- Provides Custom Software Solutions
- Works with Modern Tech Stack
- Serves Startups and Enterprise Clients
- Expertise in Web, Mobile & Custom Application Development
- Focused on Scalable, Secure & Client-Oriented Solutions
- Delivered Projects Across Multiple Business Domains



# Presentation Outline

- Week 1 – JavaScript & TypeScript
- Week 2 – TypeScript + HTML + CSS
- Week 3 – Advanced TypeScript
- Week 4 – Frontend Mini Project
- Week 5 – React + TypeScript Fundamentals
- Week 6 – State Management & UI Patterns
- Week 7 – Advanced React + TypeScript
- Week 8 – Testing, Deployment & Review

<https://drive.google.com/file/d/1rtlinualLOk8GfnP-5i5QVnfq0q0scij/view?usp=sharing>

# Week 1 – JavaScript & TypeScript

- Internship Orientation & Understanding Development Roadmap
- Review some different websites for understanding
- Introduction to Full-Stack Workflow (Frontend–Backend Overview)
- Overview of MERN + TypeScript Architecture
- Understanding Industry Coding Standards & Best Practices
- JavaScript Fundamentals (Variables, Data Types, Functions, Arrays)
- Problem-Solving using Basic JavaScript Programs
- Introduction to TypeScript & Static Typing Concept
- Git & GitHub Workflow (Clone, Commit, Push)
- Created & Managed Repositories
- Uploaded JS & TS Assignments to Version Control

# Week 2 – TypeScript + HTML + CSS

- TypeScript Types, Interfaces & Enums
- Strongly Typed Functions
- Type Aliases & Union Types
- TypeScript Functions & Enums
- HTML Structure & Semantic Tags
- Form Elements & Input Handling
- CSS Flexbox & Layout Structuring
- Responsive Design using Media Queries
- Mobile-First Design Approach
- Built Static Login Page
- Added TypeScript-Based Form Validation
- Improved Code Readability with Type Safety

Implementation

# Week 3 – Advanced TypeScript

- DOM Manipulation using TypeScript
- Type-Safe Element Selection
- Dynamic Content Rendering
- Event Handling & Form Validation
- Preventing Default Form Behavior
- Async Programming (Promises, async/await)
- Error Handling with try/catch
- Fetch API Integration
- LocalStorage Data Persistence
- Data Retrieval on Page Reload
- Built Fully Functional To-Do App using TypeScript

## Implementation

# Week 4 – Frontend Mini Project

- Mini-project(skillswap) UI Setup
- Base UI layout
- Explore about some real word problems
- Implemented basic Operations
- Validation & Error Handling
- Refactored Code to Strict TypeScript
- loose JS to strict TS
- Project Review & Code Optimization

# Week 5 – React + TypeScript Fund

- React + Vite + TypeScript Setup
- Functional Components & Props
- Functional components Typed props & Functional components
- useState & useEffect with Types
- API Integration
- React Router Setup
- Dashboard & Profile routes
- Built Typed Forms (Login & Signup)
- Client-side validation in React TS

Implementation

# Week 6 – State Management & UI Patterns

- Context API with TypeScript
- Global Authentication State
- Error Boundaries Implementation
- Tables with Pagination
- Paginated data display
- Search & Filter Functionality ([Implementation](#))
- Filtered UI results
- Frontend mini project (Phase 1)  
Skillswap - [Implementation](#)

# Week 7 – Advanced React + TypeScript

- Implemented **Custom Hooks** for reusable logic (e.g., fetching services, managing wallet state)
- **Performance Optimization** using useMemo, useCallback, and minimizing re-renders
- Developed **Advanced Components**: Service Cards, Credit Wallet, Admin Dashboard elements
- **Code Refactoring & Strict Typing** for maintainable and error-free frontend
- Followed **Clean Code Principles**: modular components, proper folder structure, readable TypeScript
- Continued **Frontend Mini Project (Skill-Swap – Phase 2)s**
- Completed Dashboard & Marketplace functionality

# Week 8 – Testing, Deployment & Review

- React Testing Basics
- Project Documentation (README)
- Deployment on Vercel
- Code Review & Assessment
- UI/UX Improvements
- Final Project Demonstration

# SkillsSwap Project Overview

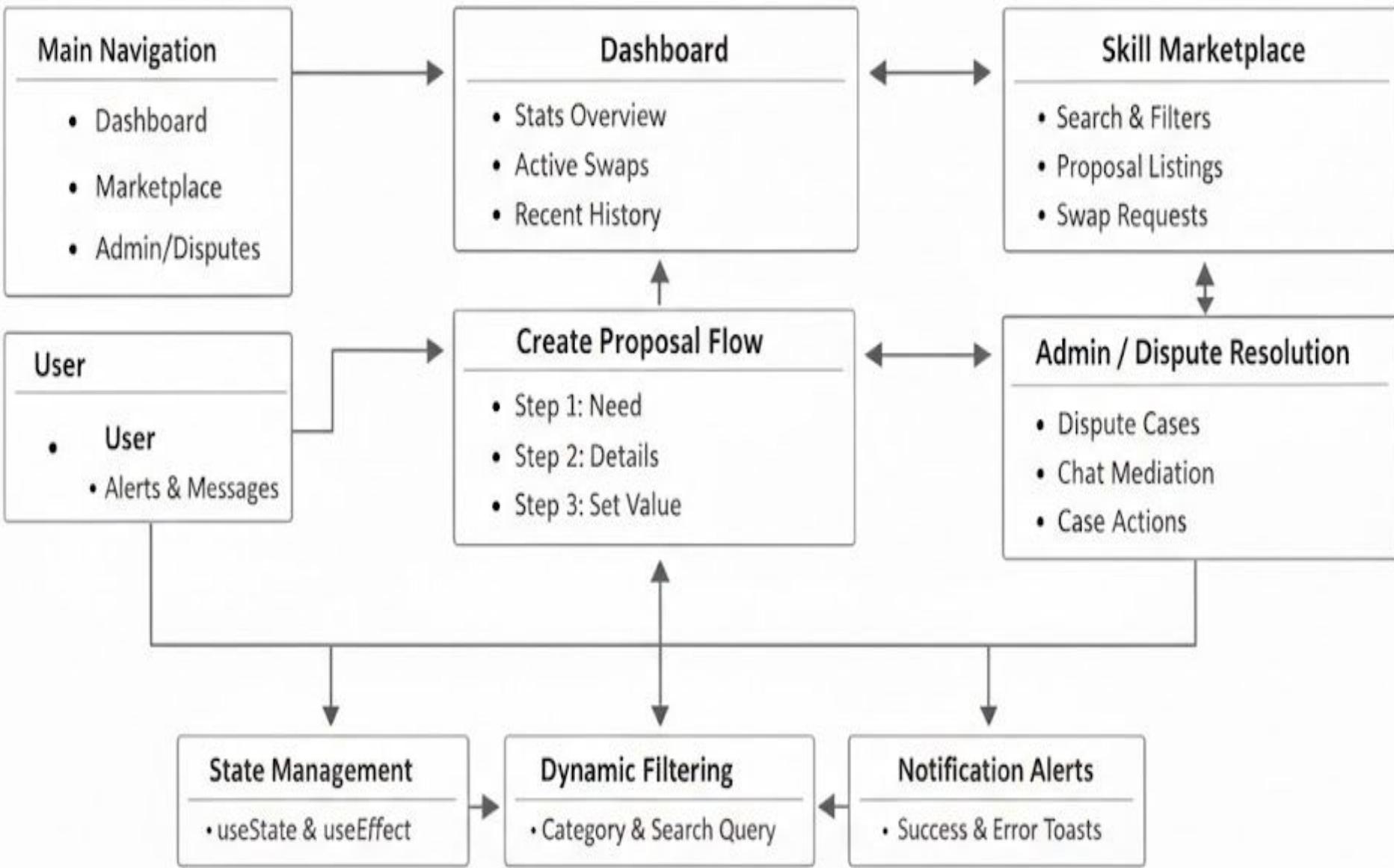
## ◆ Problem Statement

- Many freelancers and skilled individuals need services such as logo design, website development, content writing, or video editing.
- However, they may not always have sufficient funds to pay for these services.
- At the same time, they possess valuable skills that could benefit others.
- Traditional freelance platforms rely entirely on monetary transactions.
- There is no structured and secure system that allows direct skill-to-skill exchange.
- Lack of a fair value-exchange mechanism limits collaboration between skilled individuals.

## ◆ Proposed Solution

- A digital platform where users exchange services using **Time Credits** instead of money
- Introduces a time-based economy where value is measured by contribution, not currency
- Every skill is valued equally based on time invested
- **1 Hour of Any Skill = 1 Credit**
- Users can post service requests, accept offers, and complete tasks within the platform
- Credits are managed through a structured workflow to ensure fair exchange
- Enables transparent tracking of service status and credit usage
- Completely eliminates monetary dependency
- Promotes collaboration through fair, skill-based value exchange

# SkillSwap Feature Map & Process Workflow



# Dashboard Overview

## System Overview

 Create New Proposal

Tracking your value-exchange metrics.

AVAILABLE



**12.5h**

IN ESCROW



**3h**

COMPLETED



**12**

RATING



**4.9**

### Active Swaps

#### UI/UX Landing Page

With Sarah L. • Started 2 days ago

 ESCROWED

CONTRACT VALUE

**2 Time Credits**

DELIVERABLE

**SEO Blog Post**

 **Mark as Complete**

### Recent History



**Skill Transfer from Provider**

Completed recently



**Skill Transfer from Provider**

Completed recently



**Skill Transfer from Provider**

Completed recently

# Skill Marketplace

Barter your expertise for high-value services.

 Search skills or needs...

All

Design

Development

Marketing

Writing

Consulting

## Logo Design DESIGN

S

Needs: React Help

★ 4.8 • Sarah L.

2h

TIME CREDIT

Swap Now ↗

## Python Automation DEVELOPMENT

J

Needs: Copywriting

★ 4.9 • James K.

5h

TIME CREDIT

Swap Now ↗

## Social Media Strategy MARKETING

E

Needs: UI Design

★ 4.5 • Elena V.

3h

TIME CREDIT

Swap Now ↗

## Contract Review CONSULTING

M

Needs: Logo Design

★ 4.7 • Marcus T.

1h

TIME CREDIT

Swap Now ↗

# Swap Credits

Barter your expertise for high-value services.

Logo

All

Design

Development

Marketing

Writing

Consulting

## Logo Design

DESIGN

S

Needs: React Help

★ 4.8 • Sarah L.

2h

TIME CREDIT

Swap Now ➔

Tracking your value-exchange metrics.

AVAILABLE



10.5h

IN ESCROW



5h

COMPLETED

12

## ⌚ Active Swaps

### Logo Design

With Sarah L. • Started Just now

🔒 ESCROWED

CONTRACT VALUE

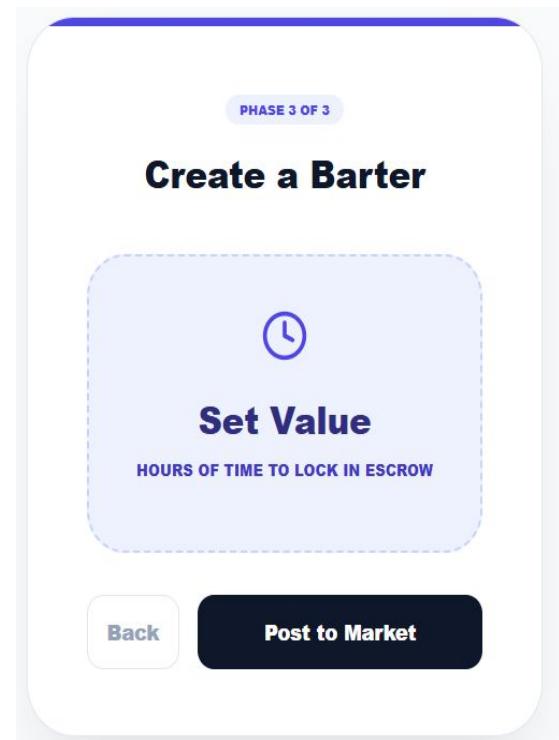
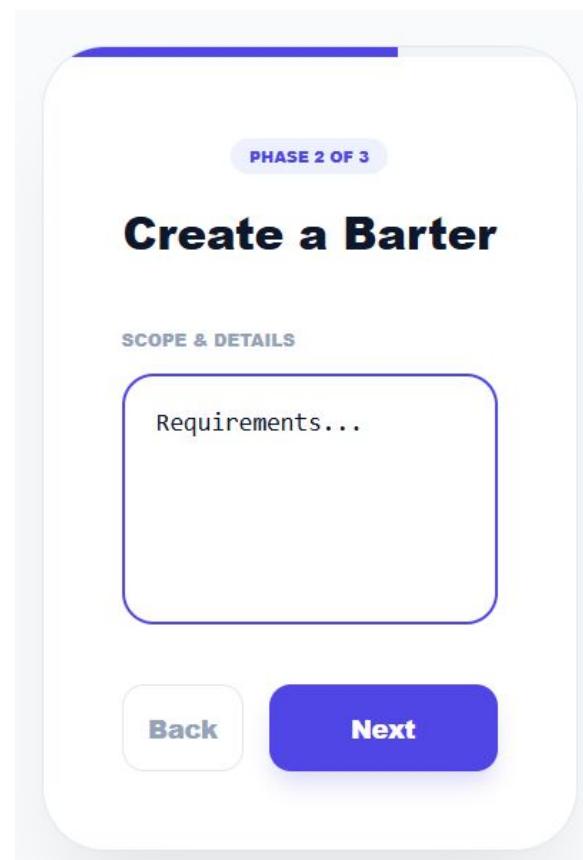
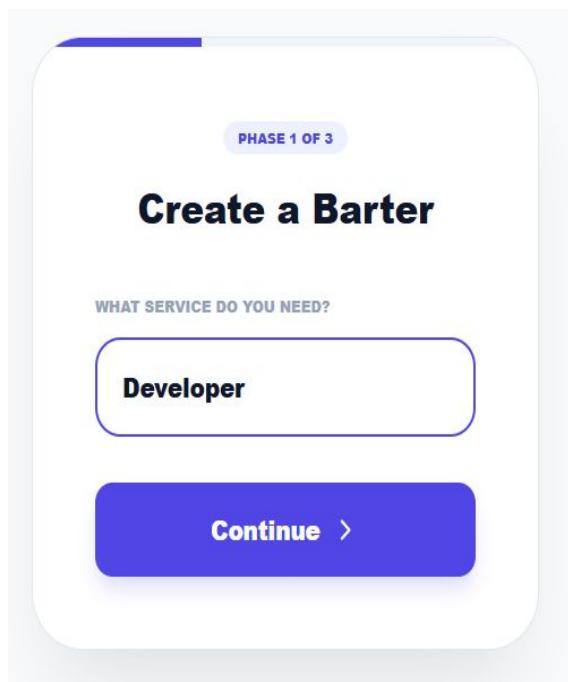
2 Time Credits

DELIVERABLE

React Help

⌚ Mark as Complete

# Create New Proposal



## Admin View

### Conflict Resolution

Disputed

Case #8821

#### Video Editing Swap

2 messages

Disputed

Case #8822

#### Logo Design Contract

2 messages

### Case Mediation #8821

VIDEO EDITING SWAP

Release

Refund

CLIENT

Provider did not meet quality standards.

PROVIDER

I followed the brief exactly.

Type a mediation message...



# Conclusion

- Successfully completed **8 weeks of structured frontend training**, covering JavaScript, TypeScript, HTML, CSS, and React.
- Strengthened **fundamentals** and applied them in real-world scenarios.
- Built **scalable and modular frontend applications** using React + TypeScript.
- Developed the **Skill-Swap frontend** with role-based UI, dynamic service workflow, and credit system visualization.
- Enhanced **problem-solving, debugging, and UI/UX skills** through hands-on projects.
- Gained **practical experience** in designing clean, maintainable code and responsive interfaces.

# References

- React Official Documentation - <https://react.dev>
- TypeScript Official Handbook -  
<https://www.typescriptlang.org/docs/>
- Node.js Documentation - <https://nodejs.org/en/docs>
- MDN Web Docs - <https://developer.mozilla.org>
- Stack Overflow - <https://stackoverflow.com>
- W3Schools - <https://www.w3schools.com>
- GeeksforGeeks - <https://www.geeksforgeeks.org>
- Medium - <https://medium.com>
- DEV Community - <https://dev.to>