

# **Project for CSGY6083: Principle of Database System**

## **Milestone 3**

### **TimeBank Platform Description**

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*note: TimeGarden and TimeBank are 2 names for our projects. The official name for submission is TimeGarden.*

#### **Choice: Web Software Application (JavaScript)**

TimeBank is a web-based task delegation platform designed as a standalone software application built with React.js, Vite, and modern web technologies. Each user can play dual roles (requester/provider). It operates as a responsive web application accessible through browsers, providing a marketplace for skill exchange and task delegation.

#### **Rationale**

Web-first delivery fits campus-wide usage across devices; React component model accelerates building reusable cards (tasks, proposals, contracts) and stateful widgets (wallet, chat). Tailwind ensures consistent spacing, accessible contrast, and fast iteration.

#### **Target Audience**

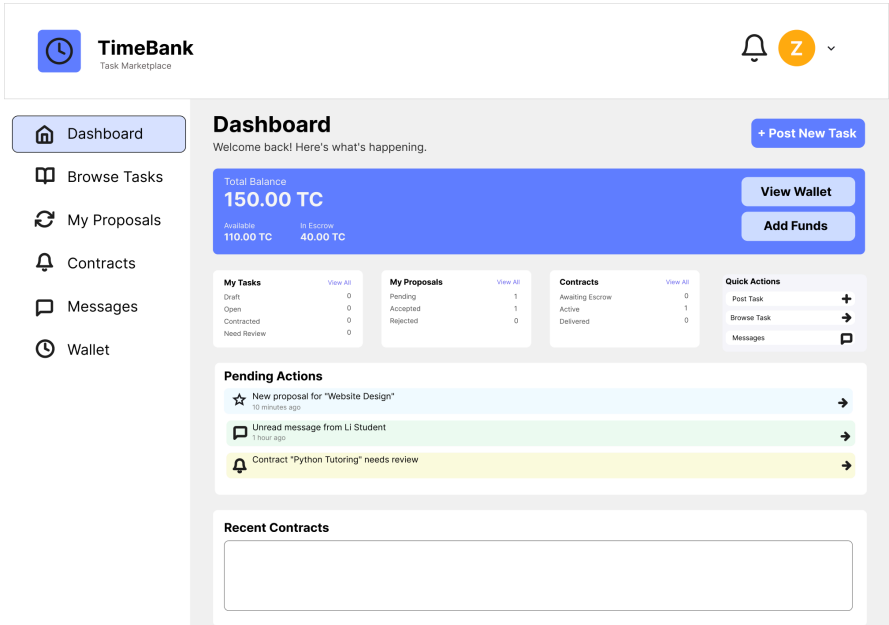
This platform is specifically designed for US university communities, including international students, domestic students, faculty members, and university staff who need academic support or want to offer their skills.

## UI Components Design and Functionalities

### - Layout Component

Design: Fixed header with TimeBank logo, navigation sidebar, and main content area

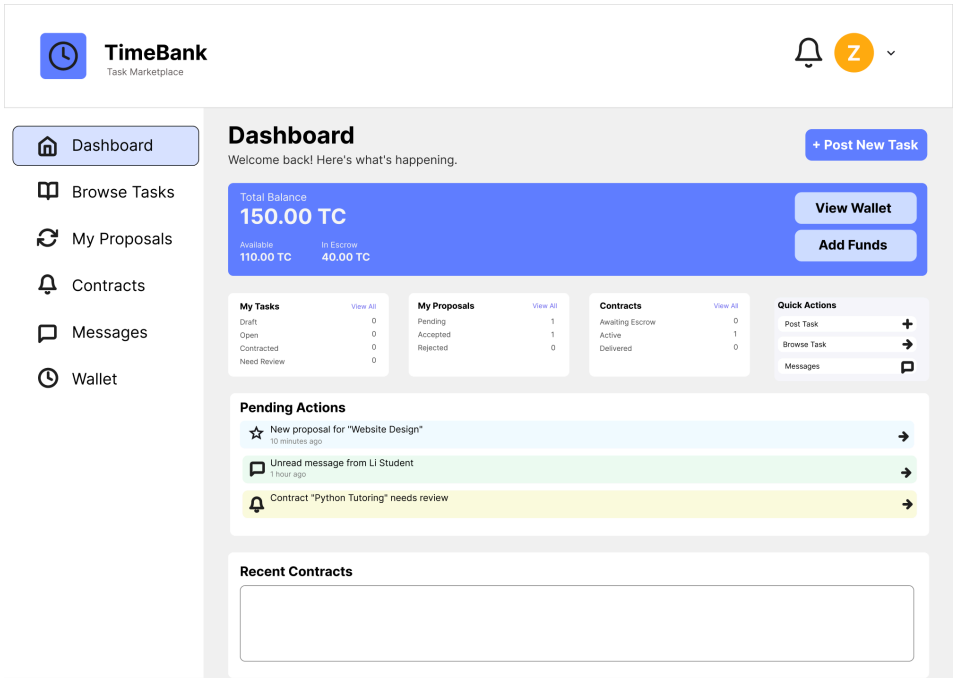
Functionalities: Header shows logo, Time Coin balance (ex., 150 TC displayed), notifications, and user profile dropdown. Sidebar navigation for Dashboard, Browse Tasks, My Proposals, Contracts, Messages, and Wallet.



### - Dashboard Component

Design: Multi-card layout with a gradient wallet card and a statistics grid

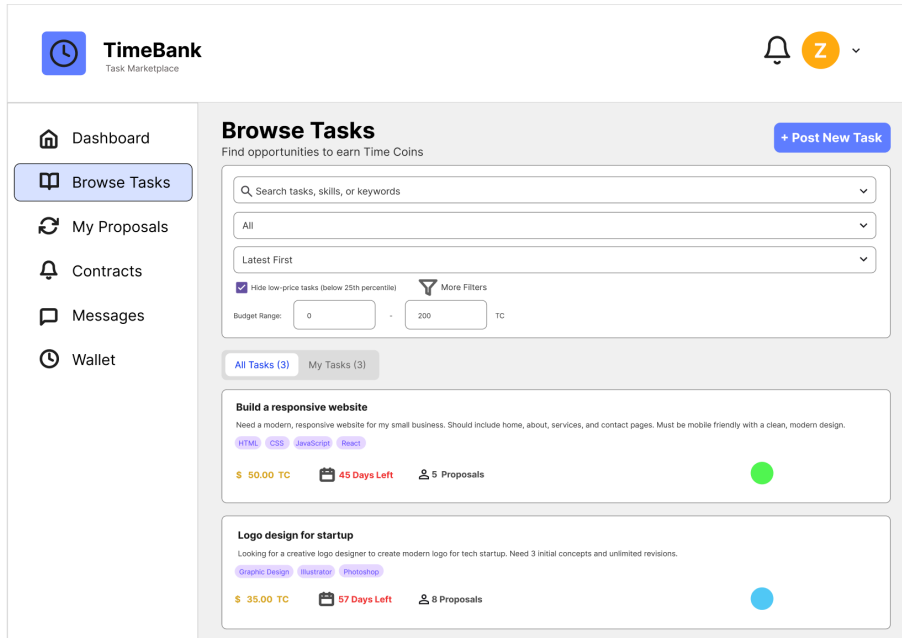
Functionalities: Large gradient wallet card shows total balance (ex., 150.00 TC), available vs. escrowed breakdown, and quick access buttons. “ Post New Task ” button is primary action for requesters. The stats grid displays My Tasks, My Proposals, and Active Contracts counts. Pending actions section for new proposals and messages.



## - Task List Component (Browse Tasks)

Design: Filterable card-based task browser with search functionality

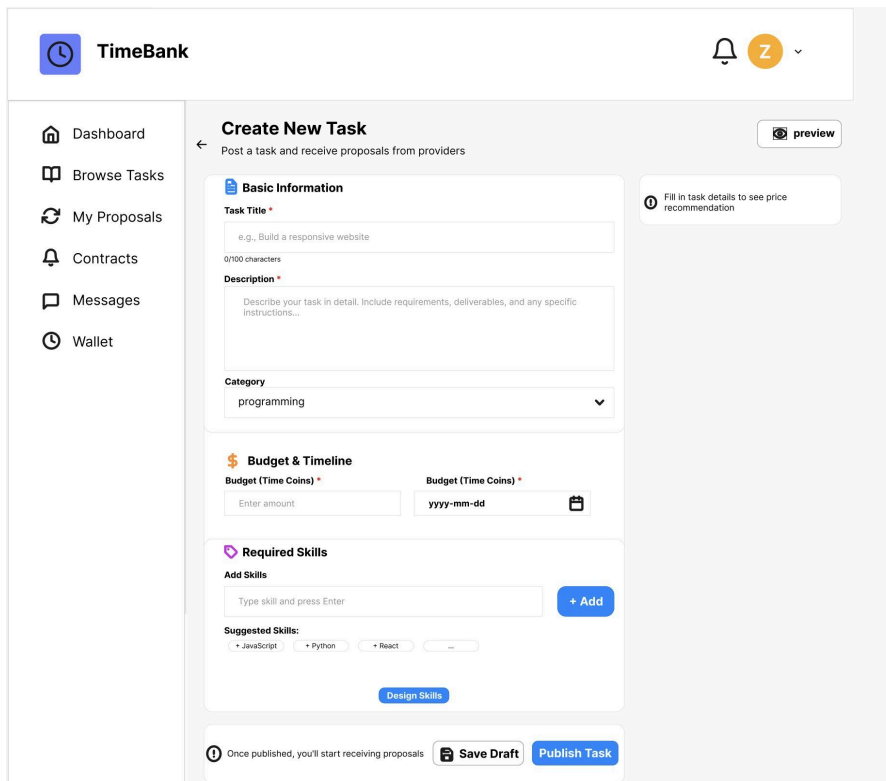
Functionalities: Search bar and filters for keywords, category, skills, and budget range. Task cards show title, budget, required skills, deadline, and publisher info. Toggle to hide low-priced tasks with warning badges.



## - Task Creation Component

Design: Two-column layout with form on left, pricing recommendation card on right

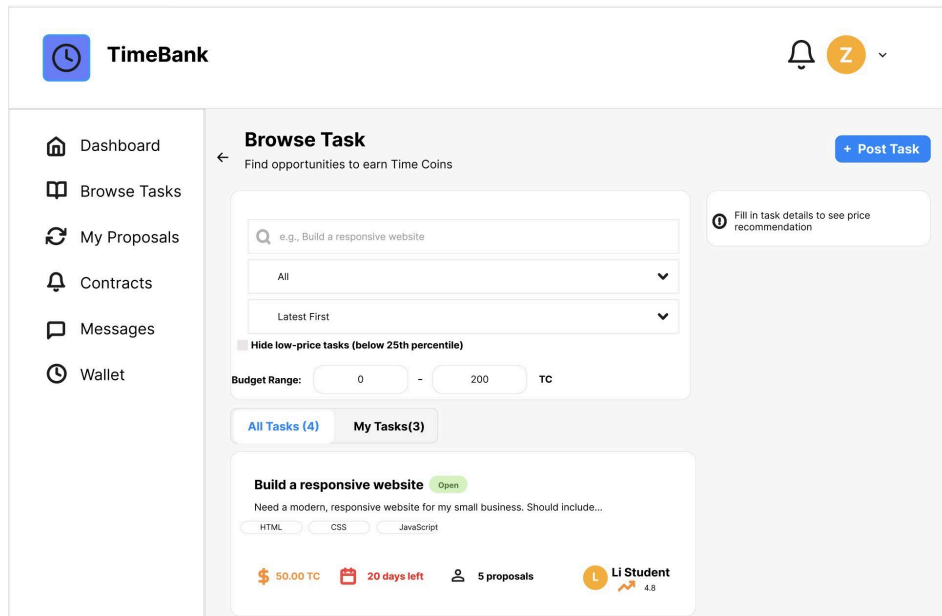
Functionalities: Task form fields for title, description, category, skills, deadline, and fixed budget. Right-side pricing card provides AI recommendations with confidence levels, one-click adoption, and floor validation warnings.



## - Task Detail Component

Design: Tabbed interface with overview, proposals, and messages tabs

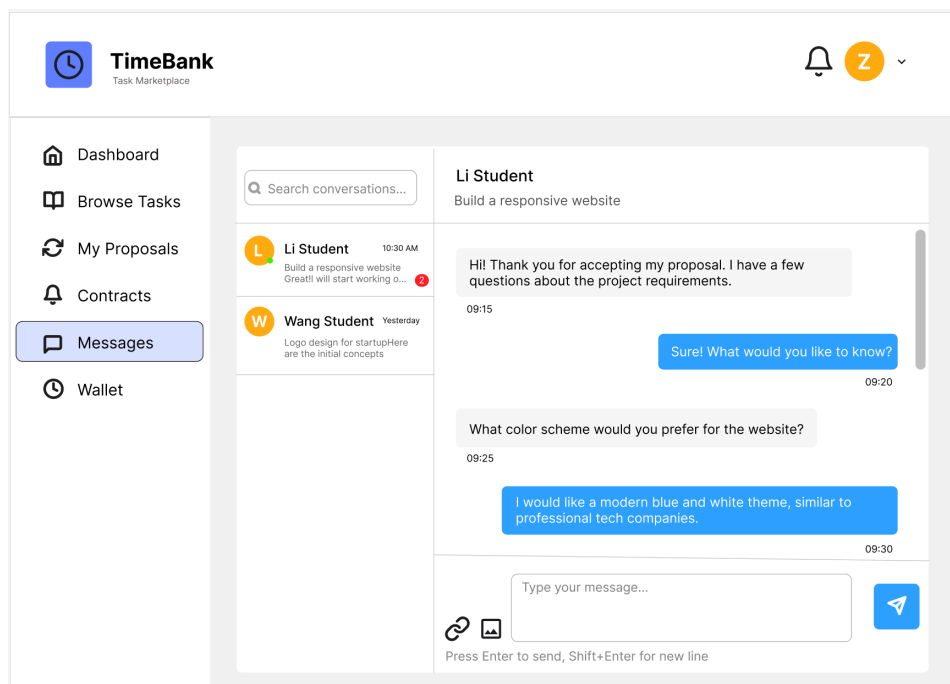
Functionalities: The Overview tab shows complete task details and budget. The Proposals tab displays a provider comparison table with accept/reject actions. Messages tab for task-specific conversations.



## - Message Component

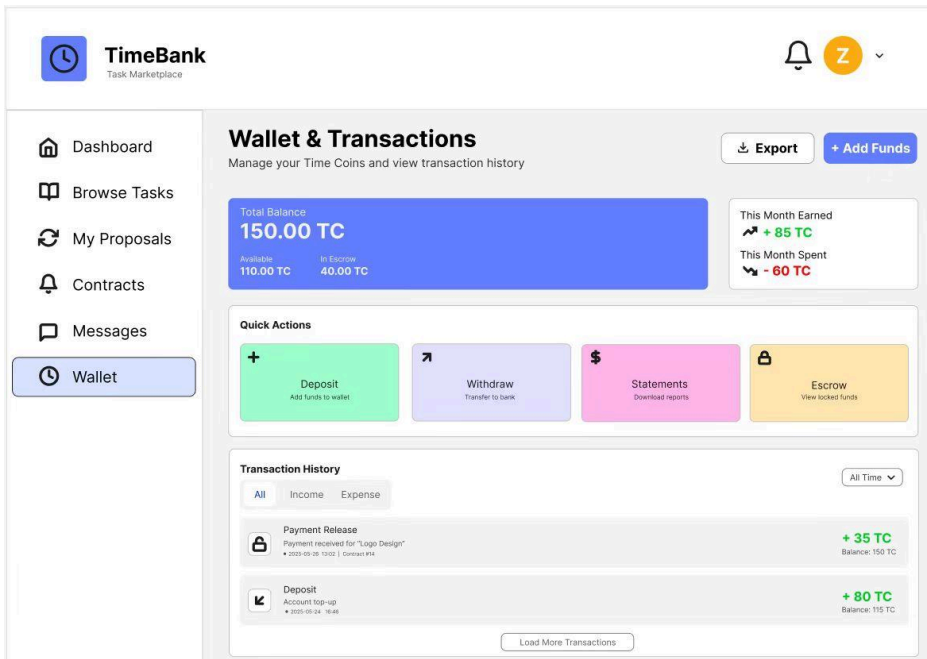
Design: Two-panel chat interface with conversation list and active chat view.

Functionalities: Displays ongoing conversations by project, supports real-time messaging, read status indicators, and file attachments within project discussions.



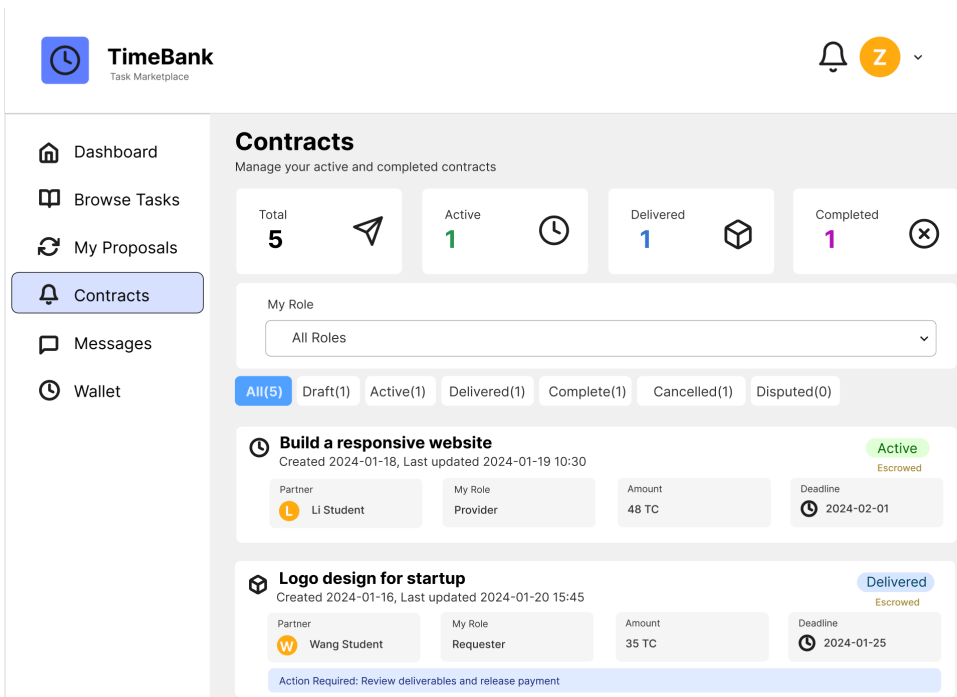
- **Wallet Component**

Design: Gradient dashboard summarizing TimeCoin balance, income, and expenses.  
Functionalities: Displays balance (Available/In Escrow), transaction history, quick actions (Add Funds, Export, View Escrow), and monthly earning/spending analytics.



- **Contract Component**

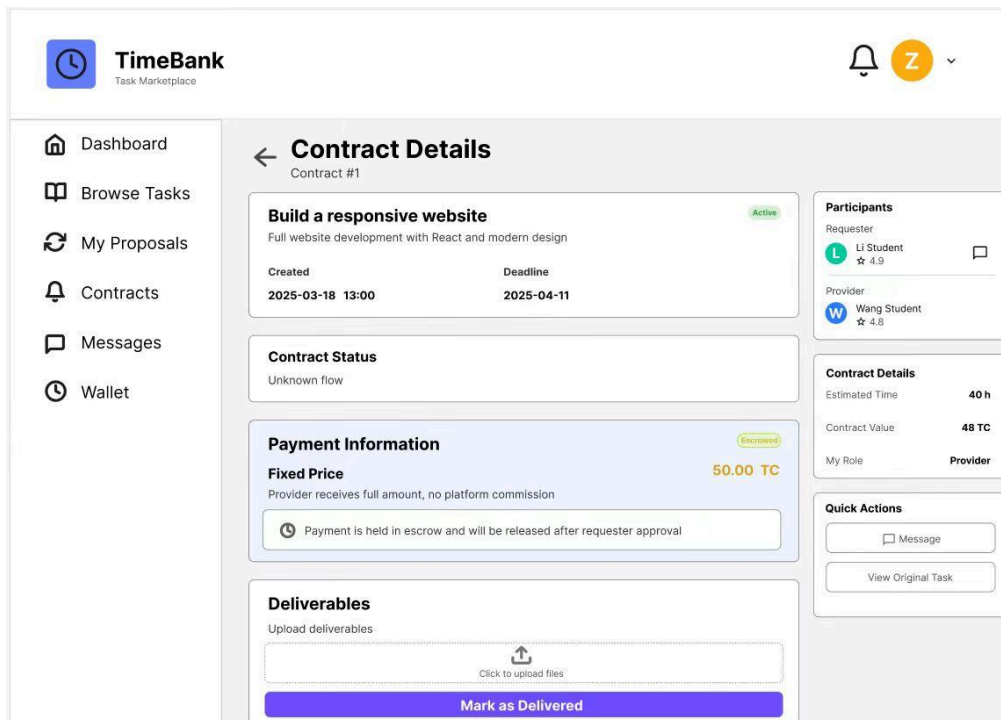
Design: Card-based contract overview with phase tracker and minimal status badges.  
Functionalities: Displays contract info, supports three payment phases (Unfunded → Escrowed → Released), includes escrow/release/cancel actions, and file upload for deliverables.



## - Contract Detail Component

Design: Contract summary with payment phases and action buttons

Functionalities: Contract information display, three-phase payment system (Unfunded → Escrowed → Released), escrow/release buttons, file upload for deliverables.



## - Pricing Card Component

Design: Interactive recommendation card with visual feedback

Functionalities: AI-powered price suggestions with confidence scoring, factor breakdown, acceptance rate prediction bar, one-click price adoption, and floor price warnings with auto-correction.

## - Authentication Components

Design: Clean forms with university-focused styling

Functionalities: Login form with email/password authentication. Registration form with role selection and skill profile setup.

## Key Design Principles

1. No Bargaining Model: Fixed pricing eliminates negotiation
2. Low Friction Discovery: AI matchmaking in one click
3. University-Focused: Designed for academic communities
4. Transparent Pricing: AI recommendations with confidence scoring
5. Escrow Protection: Secure payment system
6. Simple Wallet Reporting: One wallet card shows all at a glance
7. Easy Generate Report: one-click for CSV export
8. International Student Friendly: Simple English interface
9. Mobile-Responsive: Works on all devices