Take-Home Project: Rate Card Calculator Replica

Project Overview

Replicate the Rate card calculator using AI-powered development tools.

Reference Site: https://ratecard.youpalgroup.se/

Technical Requirements

Stack & Tools

- **Frontend:** Next.js 14+ with TypeScript
- **Backend:** Supabase (Database, Auth, Storage)
- **Styling:** TailwindCSS + Shadcn/UI (or similar)
- **AI Development:** Use Cursor, Windsurf, or similar AI IDE
- **Time Limit:** 24 hours

Core Features to Replicate

1. Custom Resource Calculator

You must recreate the first calculator with the following functionality:

- **Region Selection:** Dropdown with options (Euro Asia, Middle East, etc.)
- **Role Selection:** Dropdown with various roles (Database Developer, Full Stack Developer, etc.)
- **Seniority Levels:** Radio buttons or selector (Intermediate, Advanced, Expert)
- **Real-time Calculation:** Display monthly rate in selected currency
- **Currency Display:** Show rate with proper formatting and currency symbol

2. SWAT Team Calculator

Replicate the second calculator including:

- **Role Selection:** Dropdown with available roles
- **Workload Options:** Selectable percentages (2 days/week = 40%, 3 days = 60%, 4 days = 80%, Full-time = 100%)

- **Duration Selection:** Multiple options (1 month, 2 months, 3 months, etc.)
- **Discount Logic:** Apply duration-based discounts (-5% for 2 months, -10% for 3+ months)
- **Pre-negotiated Discount:** Display and apply the base discount
- **Dynamic Pricing:** Real-time calculation based on all selections

3. UI/UX Requirements

Your interface must match the original design:

- **Dark Theme:** Professional dark interface with proper contrast
- **Layout:** Two-column or tabbed layout for both calculators
- **Typography:** Clean, readable fonts with proper hierarchy
- **Interactive Elements:** Smooth transitions and hover effects
- **Mobile Responsive:** Works well on all device sizes
- **Calculator Toggle:** Easy switching between both calculators
- **Professional Styling:** Consistent spacing, colors, and components

Data Management

Database Setup

- Import the provided rates spreadsheet data into Supabase
- Create proper database tables for:
    - Regions with their pricing multipliers
    - Roles with base rates
    - Seniority levels with rate adjustments
    - Currency information and conversion rates

Business Logic Implementation

- Accurate rate calculation algorithms
- Proper handling of discounts and multipliers
- Currency conversion calculations
- Form validation and error handling
- State management for calculator inputs

Required Integrations

You must implement 2 of the following 3 integrations:

Option 1: Email Quote System

- **Service:** Resend, SendGrid, or similar email service
- **Features:**
    - Send calculated rates via email
    - Professional email templates with company branding
    - Include all selected parameters and final calculations
    - Support for both calculator results in one email
    - Email validation and delivery confirmation

Option 2: PDF Export Functionality

- **Service:** React-PDF, Puppeteer, or similar PDF generation
- **Features:**
    - Generate professional PDF rate cards
    - Match the visual design of the calculators
    - Include company branding and contact information
    - Show all selected parameters and calculations
    - Download functionality with proper file naming

Option 3: Multi-Currency Support

- **Service:** Fixer.io, ExchangeRate-API, CurrencyAPI, or similar
- **Features:**
    - Real-time currency conversion from multiple sources
    - Support for major currencies (AED, USD, EUR, GBP, PKR, etc.)
    - Currency selector dropdown in both calculators
    - Live exchange rate fetching with caching (refresh hourly)
    - Proper number formatting for each currency
    - Display conversion rates ("1 AED = 0.27 USD")
    - Handle API failures with fallback rates
    - Currency symbols and flag icons (bonus)

Technical Implementation Details

Performance Requirements

- Fast loading times (under 3 seconds)
- Smooth real-time calculations
- Efficient API calls with proper caching
- Optimized bundle size and images
- Proper error boundaries and loading states

Code Quality Standards

- Clean, well-organized TypeScript code

- Proper component architecture and separation of concerns
- Custom hooks for calculator logic
- Utility functions for calculations and formatting
- Comprehensive error handling
- Comments for complex business logic

Security & Best Practices

- Secure API key management
- Input validation and sanitization
- Rate limiting for external API calls
- Proper environment variable handling
- HTTPS enforcement for production

AI Development Requirements

AI Tool Usage

- Use AI development tools for at least 70% of your development process
- Document your AI-assisted workflow
- Show examples of complex code generated by AI
- Demonstrate how AI helped solve integration challenges

AI Development Report

Create a 1-2 page report covering:

- **Tools Used:** Which AI development tools you utilized
- **Code Generation:** Specific examples of AI-generated code blocks
- **Problem Solving:** How AI helped overcome technical challenges
- **Time Savings:** Estimated time saved compared to traditional development
- **Integration Assistance:** How AI helped with API integrations
- **Business Logic:** AI assistance with calculation algorithms
- **Most Valuable Help:** The most significant way AI assisted your development

Submission Requirements

1. Live Demonstration

- **Deployed Application:** Working live demo on Vercel or similar platform
- **Sample Data:** Pre-populated with realistic test data
- **Working Integrations:** All selected integrations must be functional
- **Responsive Design:** Demonstrate mobile and desktop views

- **Error Handling:** Show how the app handles errors gracefully

2. Source Code Repository

- **GitHub Repository:** Public repository with clean commit history
- **README Documentation:** Comprehensive setup and deployment instructions
- **Environment Setup:** Clear documentation of required environment variables
- **Code Organization:** Well-structured folders and file naming
- **Comments:** Proper documentation of complex logic

3. Video Demonstration

Create a 3-4 minute screen recording showing:

- Complete walkthrough of both calculators
- All integrations working (email sending, PDF generation, currency switching)
- Mobile responsiveness demonstration
- Quick code overview highlighting key components
- AI development tools in action (optional but preferred)

4. Documentation Package

- **AI Development Report** (1-2 pages)
- **Technical Architecture** overview
- **API Integration** documentation
- **Deployment Guide** with environment setup
- **Business Logic** explanation for calculations

Evaluation Criteria

UI/UX Accuracy (40%)

- How closely the design matches the original
- Professional appearance and attention to detail
- Smooth user interactions and transitions
- Mobile responsiveness and cross-browser compatibility
- Accessibility considerations

Calculation Logic (30%)

- Accuracy of rate calculations
- Proper implementation of discounts and multipliers
- Correct business logic for both calculators
- Error handling for edge cases

- Data validation and user feedback

Integration Quality (20%)

- Successfully working integrations
- Proper error handling and user feedback
- Security best practices
- API performance and caching
- Professional implementation

AI-Powered Development (10%)

- Effective use of AI development tools
- Speed and quality of development
- Documentation of AI assistance
- Innovation in AI-assisted problem solving

Timeline & Submission

Deadline

Complete and submit within 48 hours of receiving this project and the rates spreadsheet.

Submission Process

1. **Email your submission** with all required components
2. **Include live demo URL** and GitHub repository link
3. **Attach your video demonstration** and documentation
4. **Provide environment setup instructions** for local development

Provided Resources

You will receive Ratecard:

> **https://docs.google.com/spreadsheets/d/1XnDb6q1J6o9j-T0sMsnlkYOYeikYu3ps/edit?usp=sharing&ouid=103189507529775180268&rtpof=true&sd=true**
>
> **https://docs.google.com/spreadsheets/d/1XZMV7nSvHxWTND1nJy7d50pQ1RN5wU1bvA-SVzQ3YFI/edit?usp=sharing**
>
> **Business Logic is explained at the end as well.**

Success Indicators

We're evaluating your ability to:

- **Rapidly Clone Complex Applications:** Build production-ready replicas quickly
- **Handle Real-World Business Logic:** Implement accurate calculations and workflows
- **Integrate External Services:** Successfully connect and use third-party APIs
- **Leverage AI Development Tools:** Use AI to accelerate development significantly
- **Deliver Professional Results:** Create polished, user-ready applications
- **Work Under Time Constraints:** Deliver quality results within tight deadlines

Questions?

If you have any questions about the requirements, business logic, or technical specifications, please reach out immediately. We encourage clarification rather than assumptions.

This project showcases your ability to rapidly build professional business applications using modern AI-powered development workflows. Good luck! 🚀

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Note: This document contains all the information you need to complete the project successfully. Please read through it carefully before starting development.

Business Logic Documentation

Custom Resource Calculator

Formula:

Final Monthly Rate = Base Role Rate × Regional Multiplier × Seniority Multiplier

Components:

1. Base Role Rates (AED/month):

- Database Developer: 8,000 AED
- Full Stack Developer: 10,000 AED
- Frontend Developer: 9,000 AED
- Backend Developer: 9,500 AED

2. Regional Multipliers:

- Euro Asia: 1.0× (base)
- Middle East: 1.15× (+15%)
- Europe: 1.3× (+30%)
- North America: 1.4× (+40%)

3. Seniority Multipliers:

- Intermediate: 1.0× (base)
- Advanced: 1.25× (+25%)
- Expert: 1.6× (+60%)

Example:

Full Stack Developer + Middle East + Expert = 10,000 × 1.15 × 1.6 = **18,400 AED/month**

SWAT Team Calculator

Formula:

Final Rate = ((Base Rate × Seniority) × Workload%) × Duration Discount × Pre-negotiated Discount

Components:

1. Workload Percentages:

- 2 days/week = 40%
- 3 days/week = 60%
- 4 days/week = 80%
- Full-time = 100%

2. Duration Discounts:

- 1 month: 0% discount
- 2 months: -5% discount
- 3 months: -10% discount
- 4+ months: -15% discount

3. Pre-negotiated Discount:

- SWAT Teams: 20% base discount

Example:

Quality Assurance (7,000 AED) + Advanced (×1.25) + 3 days/week (60%) + 3 months (-10%) + SWAT discount (20%) = ((7,000 × 1.25) × 0.60) × 0.90 × 0.80 = **3,780 AED/month**

Currency Conversion Logic

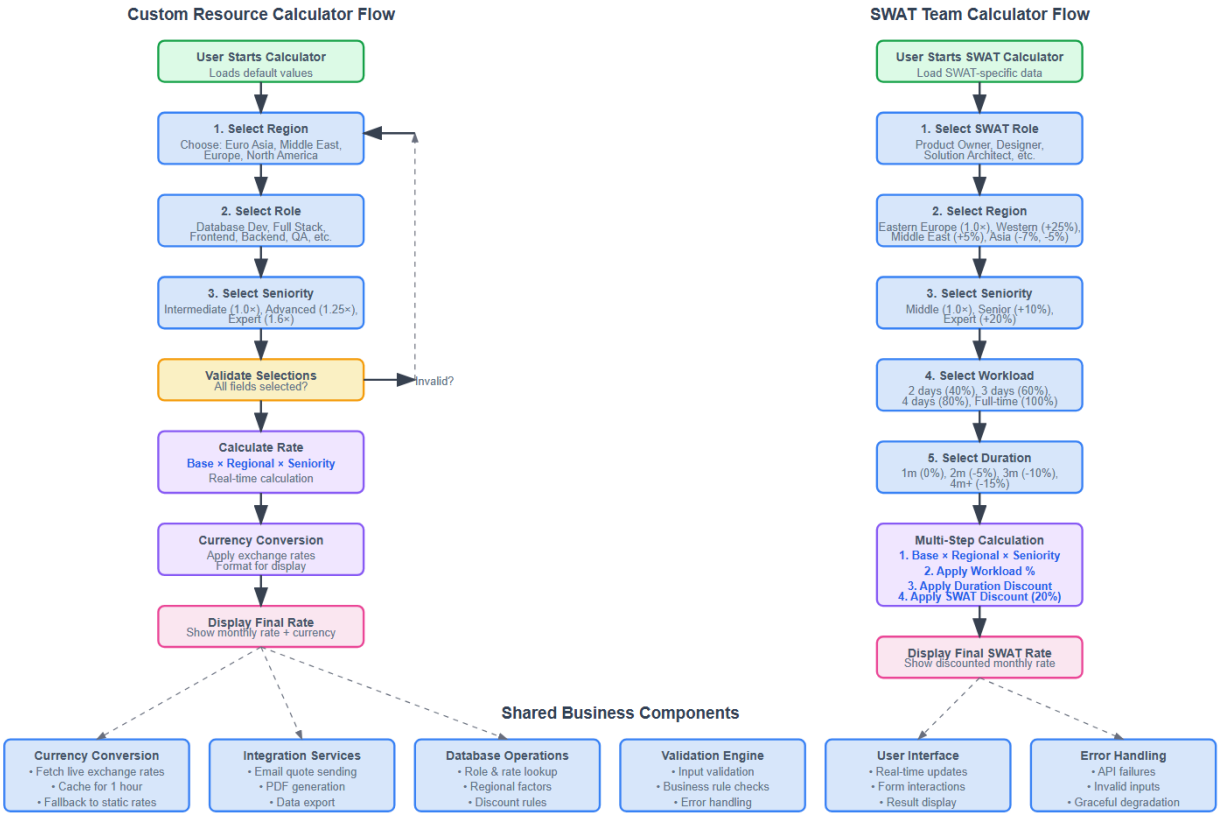
Formula:

Converted Rate = Base Rate (AED) × Current Exchange Rate

Supported Currencies:

- AED (base currency)
- USD, EUR, GBP, PKR

Complete Business Flow - Rate Card Calculators



Key Business Rules & Validation

- Custom Resource: Base Rate × Regional Multiplier × Seniority = Final Monthly Rate
- SWAT Team: ((Base × Regional × Seniority) × Workload%) × Duration Discount × SWAT Discount (20%)
- All calculations update in real-time as user changes selections
- Currency conversion applied after final calculation using cached exchange rates
- Input validation: All dropdowns must have valid selections
- Error handling: Graceful fallbacks for API failures, invalid data
- Performance: Sub-second calculation updates, cached data where possible
- Integration: Email/PDF export triggered after successful calculation