- **Team Members:** Sultanov Daniyar, Tazhibayev Sultanbay, Elik Shyngynkhan

Group: SE-2326

- **Instructor:** Gulsipat Abisheva

CURRENCY CONVERTER

INTRODUCTION

The Currency Converter is a mobile application designed to provide real-time currency conversion between various international currencies. It ensures seamless, quick, and accurate conversions by fetching up-to-date exchange rates from online sources.

RELEVANCE

Why is this important?

- Increasing globalization requires reliable and efficient currency conversion tools.
- Many existing apps contain ads, lack customization, or require constant internet access.
- Our app addresses these issues by offering a user-friendly, ad-free, and offline-capable solution.

IDEA AND PURPOSE

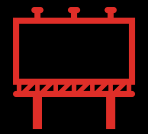
Main Objectives:

Provide real-time currency conversion with up-to-date exchange rates.

Offer offline mode by caching exchange rates.

Include historical conversion tracking.

Support multi-language UI for accessibility.



Ensure a minimalistic and intuitive user experience.

COMPARISON ANALYSIS

- **Our Advantage:**
- Fully ad-free experience.
- Multi-language support (English, Russian, Kazakh).
- Customizable interface with dark mode and font selection.

FEATURE	XE CURRENCY	CURRENCY CONVERTER PLUS	EASY CURRENCY CONVERTER	OUR APP
Real-Time Exchange Rates	✅	✅	✅	✅
Offline Mode	✅	✅	✅	✅
Historical Data	✅ (Limited)	❌	❌	✅
Multi-Language Support	❌	❌	✅	✅
Ad-Free Experience	❌ (Premium)	❌ (Premium)	❌ (Premium)	✅
Customization (Themes, Fonts)	❌	✅	❌	✅

WORK DIVISION

Team Responsibilities:

Daniyar: Project Manager & API Developer (exchange rate fetching & offline caching).

Sultanbay: Frontend Developer & Presentation (UI design using SwiftUI, multi-language support).

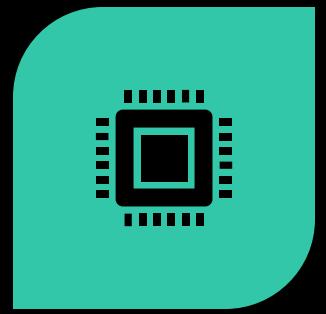
Shyngynkhan: Backend Developer & Report Writing (historical data storage & optimization).

ARCHITECTURE OF MOBILE APP

ADOPTING MVVM ARCHITECTURE:

PRESENTATION LAYER (VIEW): UI BUILT WITH SWIFTUI.

LOGIC LAYER (VIEWMODEL): MANAGES API CALLS, DATA PROCESSING, AND UI UPDATES.



DATA LAYER (MODEL & API INTEGRATION): FETCHES AND STORES EXCHANGE RATES.

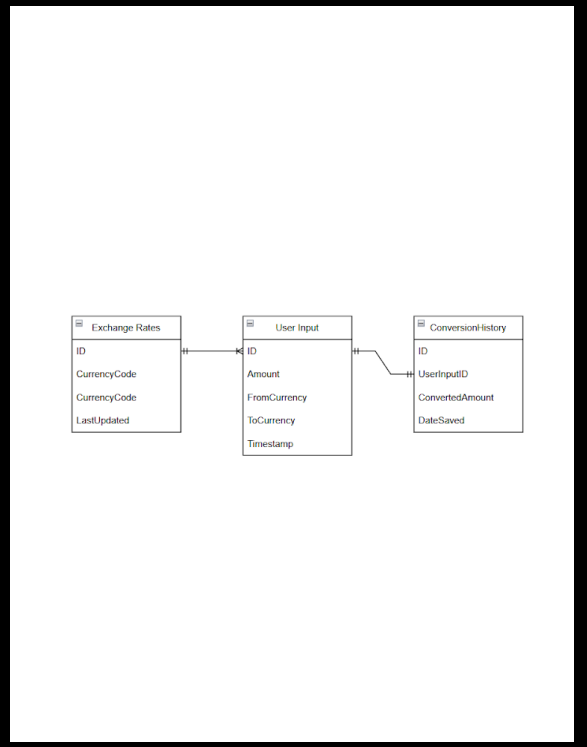
DIAGRAMS

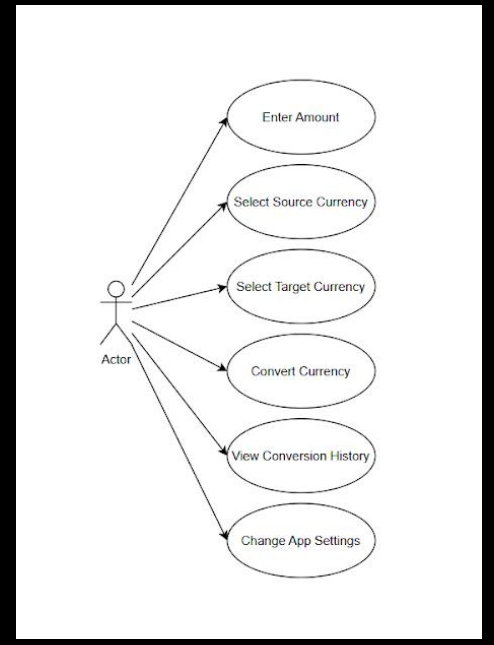
Use Case Diagram:

- Users can enter an amount, select currencies, convert currency, view conversion history, and change settings.

Entity-Relationship Diagram (ERD):

- Represents database structure for user inputs, exchange rates, and conversion history.





FUNCTIONAL & NON-FUNCTIONAL REQUIREMENTS

Functional:

- Real-time currency conversion.
- Offline mode with cached exchange rates.
- Multi-language support.
- User interface customization.
- Secure API integration.

Non-Functional:

- Fast response time (<2 seconds).
- Secure API key storage.
- Optimized UI with Auto Layout.
- Minimal memory usage.

TECHNOLOGIES USED

Programming Language: Swift

Frameworks: SwiftUI, Combine

Networking: URLSession, Alamofire

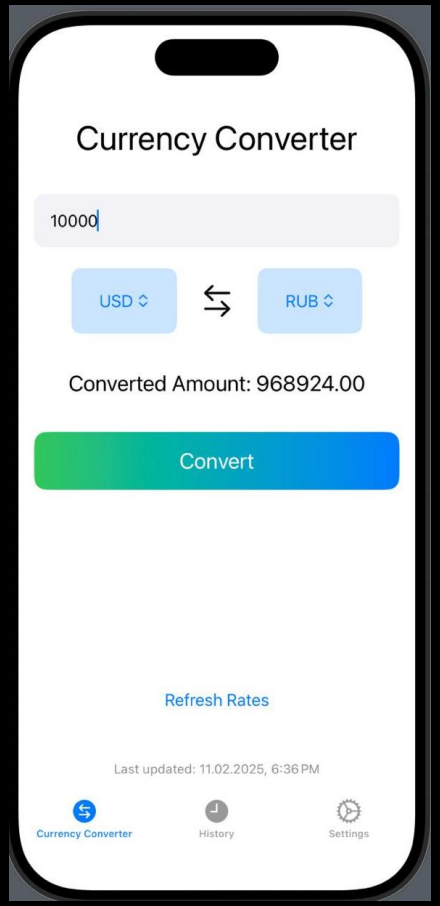
Data Storage: UserDefaults (optional Core Data for extended history)

Error Handling: Combine Framework & Alert Views

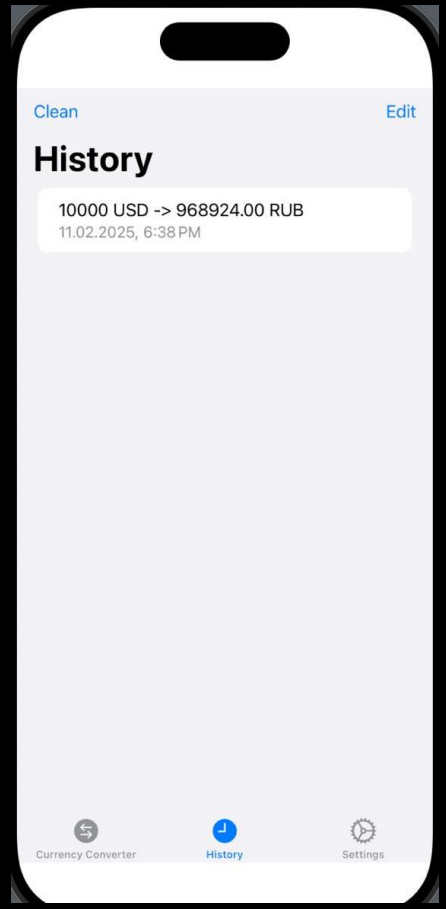
Localization: Localizable.strings (English, Russian, Kazakh)

USER INTERFACE

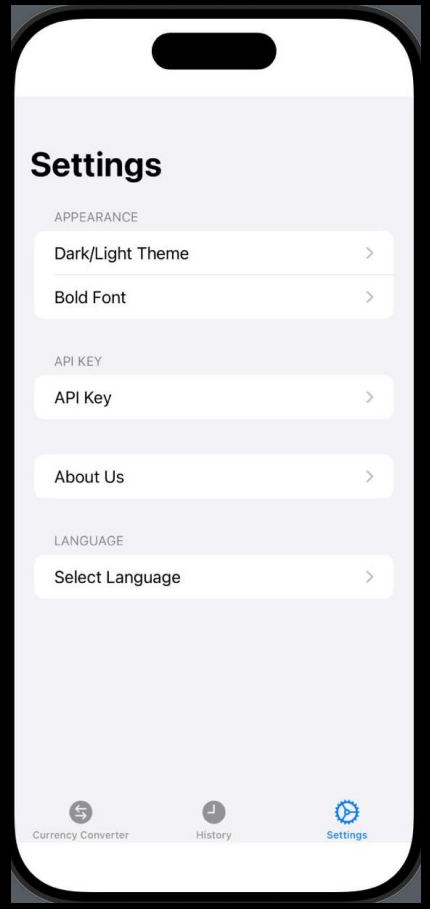
Home Screen: Input fields for conversion, real-time rate display.



Conversion History: Tracks past transactions.



Settings: Theme, language, API key management.



BUSINESS MODEL & SWOT ANALYSIS

Revenue Streams:

Freemium Model with a Premium Subscription ($2.99/month).

Affiliate marketing with financial services.

API monetization for third-party usage.

BUSINESS MODEL & SWOT ANALYSIS

SWOT Analysis:

Strengths: User-friendly, offline mode, multi-language, ad-free.

Weaknesses: Dependency on API, limited historical data.

Opportunities: More API integrations, premium features, expansion to Android/web.

Threats: Market competition, API pricing changes.

ECONOMIC EFFECTIVENESS

Metric	Baseline (T0)	Target (T1)	Expected Change
Offline Conversion Rate	70%	90%	+20%
User Retention (30 days)	50%	70%	+20%
API Response Time	2.5 sec	1.5 sec	-1 sec
Subscription Rate	N/A	5%	Future Implementation

PRACTICAL VALUE

Real-World Benefits:

Travelers: Convert currency offline while abroad.

Remote Workers: Quick multi-currency conversions for transactions.

Online Shoppers: Calculate real-time prices in their local currency.

Forex Traders: Access exchange rate history and trends.

CONCLUSION

Summary:

Efficient, accurate, and ad-free currency conversion.

Multi-language support and UI customization.

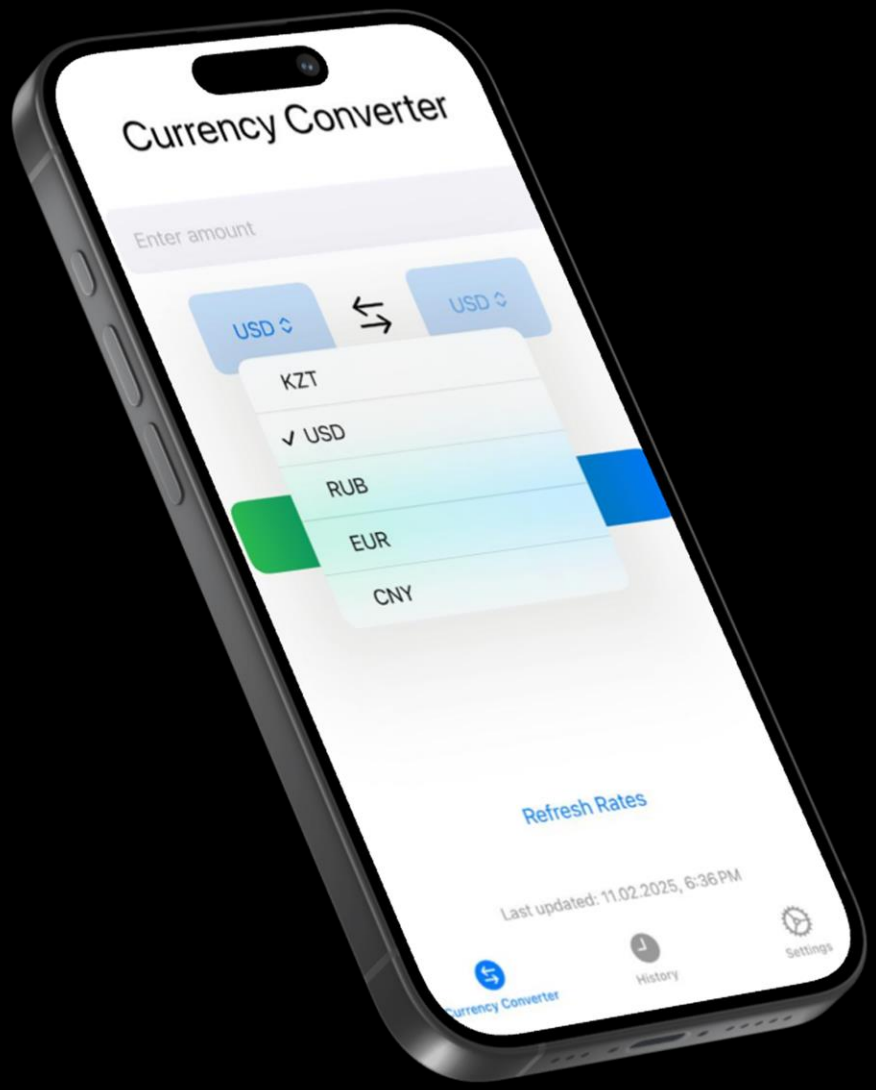
Economic potential through subscriptions and partnerships.

Future Enhancements:

Adding exchange rate trend analysis.

Expansion to Android and web platforms.

AI-based currency forecasting.


Currency Converter
Enter amount
USD
USD
KZT
USD
RUB
EUR
CNY
Refresh Rates
Last updated: 11.02.2025, 6:36 PM
Currency Converter
History
Settings