

NBP Insight Project

CodeBlack

The functional requirements our project meets.

1. Functional Requirements

The software will offer the following functionalities:

- ✓ • Fetch exchange rate data from the NBP API.
- ✓ • Perform statistical analysis, including:
 - ✓ ○ Calculation of the number of increasing, decreasing, and stable sessions over different time periods (1 week, 2 weeks, 1 month, 1 quarter, 6 months, 1 year) for a selected currency.
 - ✓ ○ Computation of statistical measures such as median, mode, standard deviation, and coefficient of variation for the above-mentioned periods.
 - ✓ ○ Monthly and quarterly distribution analysis of currency pair changes (e.g., EUR/USD) represented as a frequency histogram.
- ✓ • Display results in a user-friendly format as tables exported to CSV files.

2. Non-functional Requirements

- ✓ • The implementation language will be Python, and the development environment PyCharm.
- ✓ • The system will communicate with users via the Python console.
- ✓ • All project documentation and software will be provided in English.
- ✓ • Software requires an internet connection.
- ✓ • Historical exchange data is available from 2 January 2002 to the current date via NBP API.
- ✓ • The system communicates with the NBP API using the HTTPS protocol, providing a secure and encrypted connection for all data transfers.
- ✓ • Exchange rate data is only available on business days (Monday to Friday), because The National Bank of Poland (NBP) API provides exchange rates for currencies based on the daily rates set during business days. If a user requests exchange rate data for the last 1 week (e.g., from Monday to Sunday), the system will only retrieve data from the business days (Monday to Friday), ignoring the weekend days.
- ✓ • The functionality of our application is dependent on the NBP API for retrieving exchange rate data. The application relies on the availability and accuracy of the data

provided by the NBP API. Any changes, downtime, or disruptions in the NBP API may directly affect the operation and performance of the application.