**Technical Requirements for a Real Estate Scoring System**

**1. Project Name**

The project REScore (short of real estate score), is a scoring system designed for “scoring”, evaluating a more accurate price of the real estate. Design, development, implementation, and comprehensive technical support of an advanced real estate scoring system for automated property valuation, investment risk assessment, and market trend analysis. The system leverages data analytics and machine learning algorithms to evaluate property characteristics, location, market conditions, and financial indicators, providing accurate and dynamic property valuations. It is designed to support real estate professionals, investors, and financial institutions in making informed decisions by offering real-time insights into property investment potential, risk levels, and market positioning. The solution includes integration with external data sources, a user-friendly interface for managing and reviewing scoring results, and continuous updates to ensure system accuracy and relevance in changing market conditions.

**2. About the Team**

Our team consists of three highly skilled professionals: Tursunqulov Olimjon, a UI/UX designer, Asadbek Khasanov, a backend developer, and Bekhzod Irgashev, a frontend developer. The UI/UX designer has 3 years of experience, currently working at Uzum, a unicorn startup, and holds a bachelor's degree in Computer Science. Our backend developer brings 4.5 years of experience, working for a US-based company, with expertise in C# and .NET, and also holds a bachelor's degree in Computer Science. The frontend developer has 5 years of experience and is currently employed at the largest IT company in the country – EPAM Systems, specializing in React and TypeScript. The technology stack we apply includes C# and .NET for the backend, React and TypeScript for the frontend, Figma for UI/UX design, and Python for AI/ML development.

**3. Project Purpose**

Our product is designed to help banks and financial institutions make more informed lending decisions and minimize losses from mortgage defaults by utilizing a real estate scoring system. With global mortgage-related losses reaching $600 billion in 2023 and up to 45% of those losses attributed to selling foreclosed properties at a loss, our scoring system provides critical insights into property values, neighborhood trends, and marketability. By leveraging this data, banks can reduce their risk exposure, optimize property management, and improve recovery rates, saving millions in potential losses from foreclosures.

**4. Conceptual Model**

The system integrates real-time data updates from geospatial platforms (e.g., Google Maps), real estate listings, and economic indicators to provide up-to-date scoring for each property.

Each property is assigned a score on a **scale from 1 to 100** (or other customizable scales) representing its overall risk and marketability. A higher score indicates a more favorable property for lending or investment.

The system provides **recommendations** for lending terms (e.g., down payment requirements, interest rate adjustments) based on the property score and borrower risk.

**5. Team Member Roles**

Asadbek Khasanov – responsibility included collecting the data to train the model. Parsing data from domtut.uz took almost 8 hours. Also responsible for creating the web API and training the AI model. Closely worked with other team member while integrating the API with the front end.

Bekhzod Irgashev – reponsible for creating the front end of the project. Worked on high level architecture, API request & response contracts and assisted in finding libraries for data parsing.

Olimjon Tursunqulov – designed the every part of our work that needed an artistic touch. Was a key player in discussions with mentors due to his rich user experience knowledge. Prepared the UI of the system and the presentations.

**6. Functional Requirements**

The **functional requirements** of the real estate scoring system include the ability to collect and integrate data from multiple sources, such as geospatial data, real estate market trends, neighborhood quality metrics, and borrower profiles. The system must process this data in real-time and generate a comprehensive score for each property, reflecting its overall marketability and risk level. It should provide an interactive dashboard for bank users to view property scores, breakdowns of individual factors, and recommendations for lending terms. Additionally, the system should allow banks to filter and sort properties based on risk levels, market trends, and geographic locations. It must also generate detailed reports on individual properties and portfolios, enabling better decision-making and foreclosure management. Finally, the system should include machine learning capabilities to refine predictions and scoring models over time.

**7. Diagrams and Visualization**

**8. Integrations**

While working on this project, we got the usage of the following third party systems:

1. YandexAPI & Yandex Suggest Maps API
2. OpenStreetMap databases
3. DomTut.uz

**9. Additional Information**

While we are only showcasing real estate scoring system for banks, we see endless opportunities in our system that creates a rating system for the locations. This idea is already implemented in all of the developed countries where they even use it for other purposes, such as marketing (where to put the billboards), business expansion (where in the city would be the biggest demand for a new branch of the supermarket), and etc. Thank you for your attention!