Before commencing this paper, I wish to express my reservations regarding the use and glorification of the app in question. There are several issues that warrant consideration. Firstly, while the loans may indeed have zero interest on the clients' end, it is pertinent to acknowledge that these borrowers often deal with electronic bank accounts that are managed by third-party entities, which may impose exorbitant interest rates. Secondly, even from a Neo-liberal standpoint, providing financial assistance based solely on subjective narratives rather than viable business prospects is highly inefficient. The allocation of funds for "small businesses" could be better utilized in addressing critical infrastructure needs, such as enhancing soil fertility, ensuring access to clean water, improving roads, and promoting education, among other pressing priorities. Although further points could be raised, I personally view this initiative with skepticism and, in a professional capacity, I would refrain from engaging in any work related to it due to ethical considerations.

As a developer working on a micro-loan app for Kiva, your primary goal is to empower borrowers seeking micro-financing by providing them with accessible and relevant data locally. This data includes essential information such as the status of their loan applications, loan amounts, repayment schedules, and communication updates from lenders or the Kiva platform. Through the app's interface, borrowers can conveniently access their repayment history, enabling them to track their progress and meet repayment deadlines.

To achieve this, the app will utilize data fields from a CSV file that are most applicable to the borrowers' needs. Key fields will include Loan ID for unique identification, Loan amount to indicate the requested funds, Repayment term for the duration of repayment, Repayment schedule detailing installment amounts and dates, and Loan status reflecting the current stage of the loan process, whether it's funded, in repayment, or completed. Additionally, the app may display lender information for transparency if applicable.

Given the limited resources of an embedded system, it's crucial to design a lightweight and user-friendly interface. A text-based or menu-driven approach can be suitable, enabling borrowers to access loan details, check repayment status, and communicate with lenders through predefined messages, even without a constant internet connection.

As the app will cater to different users, each user will have distinct needs and roles. Borrowers will apply for micro-loans and view relevant loan information, while lenders will participate in funding loans, monitoring loan profiles, and receiving repayments. Administrators, on the other hand, will oversee the entire system, verify borrowers' information, and manage loan applications for smooth operations.

To meet the design requirements of the system, several key aspects must be addressed. Implementing robust security measures will safeguard sensitive borrower data and financial transactions. Offline access capabilities will enable borrowers to use the app even without internet connectivity, with the app storing and retrieving data locally. Data synchronization features will ensure that, when connected to the internet, the app updates and synchronizes data with the central Kiva database. Prioritizing an intuitive interface will facilitate ease of use, accommodating users with limited technical knowledge. Lastly, optimizing the app for low resource consumption is vital to ensure smooth performance on embedded systems with limited processing power and memory.

For the needs I picked the first five “story's” that came up.

[$575 helps Luisa to replenish her canteen stock.](https://www.kiva.org/lend/2615388)  [$500 helps Shiela May to purchase fishing supplies such as nets, rope, gasoline, and other items.](https://www.kiva.org/lend/2616844)  [$4,500 helps a member of Nazikosi Group to buy a solar powered irrigation pump.](https://www.kiva.org/lend/2617015)  [$100,000 helps Olusheno to purchase solar home systems that will be financed for rural customers in Namibia.](https://www.kiva.org/lend/2601263)  [$700 helps Griselda Beatriz to buy more fruits and vegetables to stock her business and continue selling.](https://www.kiva.org/lend/2613001)

After reviewing the five borrower stories, it is evident that each borrower has a specific financial need and purpose for seeking a loan through the platform. These stories provide valuable insights into the diverse range of funding requirements and potential impact of micro-loans on individuals and communities.

Luisa, for instance, requires $575 to replenish her canteen stock. This suggests that the data requirements for her loan application may be relatively straightforward, focusing on verifying her business details, current stock levels, and repayment history, among other basic financial information.

Shiela May's case involves a loan of $500 to purchase fishing supplies, such as nets, rope, and gasoline. Her data requirements may involve more specific details about the fishing supplies she intends to acquire and how they will contribute to her fishing enterprise's growth and sustainability.

For the member of the Nazikosi Group, who seeks $4,500 to buy a solar-powered irrigation pump, the data requirements could be more complex. Evaluating this loan may necessitate a thorough understanding of the group's agricultural activities, potential water usage, and anticipated increase in productivity due to the irrigation pump's implementation.

On the other hand, Olusheno's request for $100,000 to purchase solar home systems for rural customers in Namibia represents a larger-scale investment. This type of loan may involve extensive data requirements, including market research, financial projections, and a comprehensive business plan to assess the feasibility and impact of such an initiative.

Lastly, Griselda Beatriz requires $700 to buy more fruits and vegetables for her business. Her data requirements might involve verifying her previous sales records, understanding her target market, and assessing the potential return on investment for her business expansion.

In an embedded system UI/UX wireframe for the micro-loan app, the following key data should be displayed to effectively serve the needs of the borrowers:

1. Loan Status: This information is crucial for borrowers to know the current stage of their loan application, whether it's in progress, funded, or in repayment. It helps borrowers stay informed about the status of their financial request and plan accordingly.
2. Loan Amount: Displaying the requested loan amount prominently allows borrowers to quickly verify the funds they have applied for, ensuring accuracy and avoiding confusion during the application process.
3. Repayment Schedule: Providing a clear and detailed repayment schedule is vital for borrowers to understand their payment obligations. This data helps borrowers plan their finances and ensure timely repayments, avoiding potential late fees or penalties.
4. Repayment History: Including a history of previous repayments helps borrowers track their progress in repaying the loan. It provides them with a sense of achievement and motivates them to continue meeting their financial responsibilities.
5. Communication Messages: The ability to view messages and updates from lenders or the Kiva platform is essential for borrowers to stay informed about any important changes or instructions regarding their loan.
6. Lender Information (if available): If the app allows borrowers to see information about the lenders supporting their loan, it can create a sense of connection and gratitude towards the lenders, strengthening the borrower-lender relationship.
7. Offline Access Status: Indicating whether the app is currently operating in offline mode or connected to the internet is crucial for borrowers, as it helps them understand if they can access certain features or if they need to wait for connectivity.
8. Loan Purpose: Displaying the intended purpose of the loan (e.g., business expansion, education, agriculture) reinforces the significance of the loan for borrowers, reminding them of their goals and aspirations.

In the context of the micro-loan app for Kiva, the lender's access to specific data is crucial to make informed lending decisions and support borrowers effectively. Lenders need detailed information about the borrowers, including their profiles, business details (if applicable), and repayment history. This data allows lenders to assess the risk and viability of providing funds to particular borrowers. Additionally, access to loan details, such as the loan amount, repayment term, and repayment schedule, helps lenders understand the terms of the loan and plan their investments accordingly.

Communication updates are also vital for lenders, as they need to receive timely information on loan progress, repayment status, and any messages from borrowers or the platform. This helps lenders stay informed about the loan's performance and address any potential issues promptly.

To cater to the lender's needs, the app should consider incorporating specific data fields from the CSV file that are most applicable. The borrower ID is essential for unique identification and linking borrowers to their respective loan applications. Borrower information, including personal details, location, and business-related information, provides lenders with a comprehensive understanding of the borrower's background and financial situation.

Loan-specific data fields, such as the loan amount, repayment term, repayment schedule, and loan status, enable lenders to assess the loan's potential risk and track its progress. Communication messages offer valuable insights into borrowers' updates and ensure effective communication between lenders and borrowers.

Given the available resources on an embedded system, the app's interface should be designed with simplicity in mind. A text-based or menu-driven interface can efficiently provide lenders with the necessary data without overburdening the system's limited resources.

In this micro-loan app, there are three main user roles: borrowers, lenders, and administrators. Borrowers apply for micro-loans, access their loan details, repayment status, and communicate with lenders. Lenders, on the other hand, provide funds to borrowers, review borrower profiles, and receive updates on loan progress and repayments. Administrators are responsible for managing the entire system, verifying borrower information, and overseeing loan applications and transactions.

To meet the design requirements for the system, robust security measures are essential to protect borrower and lender data, as well as financial transactions. A user-friendly interface will enhance the lender's experience, making it easy to navigate and access relevant borrower information efficiently. The app should prioritize data synchronization between the embedded system and the central server to ensure real-time loan status updates. Moreover, providing offline functionality allows lenders to access essential data and make lending decisions even when internet connectivity is limited.

Optionally, data analytics features can be incorporated to help lenders assess the risk of lending to specific borrowers based on historical data and repayment trends. This would enhance the lender's ability to make informed decisions and contribute to the overall effectiveness and success of the micro-loan app in supporting borrowers' financial needs.