**Kiva Interface & Design**

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**Screen Design Rationale:**

The screen design presented in the Kiva interface wireframe focuses on the primary goal of delivering the necessary information to Kiva clients at the lowest cost to power and data possible. The justification for this is that Kiva serves mostly underserved communities with interest-free, crowd-funded loans. Many of these clients in these communities do not have the same available resources as the other communities, so the consideration of low-resource devices such as flip phones has been a foundation for this project. This section details how and why the design is structured in its current format and will reasonably explain how these designs correlate with the goals. Pairing each bullet point to its corresponding screen in the Kiva Wireframe PDF will elaborate each screen. It is of note to keep in mind that graphics (buttons or images) have been kept to a minimum to reduce upload resources to the devices, and all clickable buttons take the form of textual hyperlinks to allow for better performance on the device (reduces load times, especially in bad service areas). The basic guidelines and best practices are drawn from Android and Apple’s UI/UX development websites, referenced at the end of this project.

* Embedded Device:

The embedded device shows a common representation of a flip phone mobile device. Many (not all) versions are installed with an LCD non-touch screen, which has to be a consideration for the design of an interface, especially when developing controls. Presented on the left information bar are two common navigation tools (the advanced navigation controller with buttons for up, down, left, right, select/OK) and a 9-key navigation/key-text entry). Understanding the input method is the first step to developing a well-thought-out design concept that will suit the situation and allow the needs of Kiva clients to be met. The screen is proportionally sized to the login screen Kiva could present, with options to log in, register a new user, a help link, and a view full site link (for users who may not have low-power/low-memory restrictions). The principle concept of this frame is to show what might not be obvious, the hardware setup a client could potentially be working with.

* Home Screen:

Keeping with the most basic of designs, with the user goal of reducing power, data, and memory consumption to as low as possible, the Home Screen may seem a little bit bland. Though this might be visually less appealing, the functionality and interaction experience are not lost in the plainness of the screen. In fact, usability and navigation have been enhanced by keeping graphical interfaces out of the design, increasing device performance, and simplifying items into a uniform top-to-bottom text-link list rather than buttons across varying locations of the screen. This uniformity creates an easy navigation flow from one object to the next, considering that it could be difficult to navigate with directional buttons rather than touching anywhere on the screen. Starting at the very top is a search bar, which will remain between all screens for quick loan searching (later iterations may change the “search” prompt to “search loans” for clarity). Next will be a Kiva logo, which will identify the application that the user is currently interacting with. Below that, down the left-hand side of the screen is a list of clickable “link” style buttons. Simple one or two-word textual descriptions for what the link will contain on its next page. The list is also ordered from greatest importance to least importance (not necessarily most used, just most relevant to the overall goal of acquiring Kiva’s interest-free loan.). Since navigation is done on a keypad, the cursor location will be identified by a slight change of the text, becoming a bit brighter, and slightly larger in font size, accompanied by bold and underlined font. If the client clicks their “OK” button, the radio button on the left side of the text will change its border from black to white, showing that they clicked on it before loading the page they chose. In this example scenario, we see that “My Loans List” is highlighted with bold and underlined font, showing the cursor location and the button has been clicked, signifying the client proceeded with this choice. Also worth noting in this screen, at the very bottom, are a couple of links, highlighted in green to signify their importance to the Kiva functions of “Help” and “View Full Website” for users that might not have device restrictions.

* My Loans Screen:

This screen follows the simplistic design format that will flow throughout the wireframe. Keeping with best practices, any buttons, logos, or other design implementations carried between pages will stay consistent within each individual page (in this case, the search bar, the Kiva logo, and the “link” style textual list down the left side). Above the Kiva logo will be a consistent text display showing what page the user is on. In this case, it displays “My Loans Screen” to give the user a bearing on their location within the system. The cursor locator and navigation work the exact same between screens, keeping a uniform interface and interaction as the user progresses deeper into the system, and continuing to deliver a low-cost, higher-performance experience. The list on the My Loans page will be alphabetic, but the user may be able to change the order (filtering by preference of things like newest to oldest, but we must be careful not to put too much code into the design to keep the memory consumption low). Near the bottom of the page is a list navigation. Since the screen is only so large, each “My Loans” page should be restricted to a maximum number of items to keep the text size readable (for example, 5 loans per page). Now, there may not be a need for a “Next page” type of navigation system, but if it is required, this design implements the use of that (take note that, since only one page exists, the options to navigate to the start page “<<”, last page “<”, next page “>”, and end page “>>”, are all grayed out, signifying that they are not functional at this point, which follows best practices and guidelines). Of note on this page are the links on the bottom. Instead of using graphical buttons to help with navigation, there are “link” type text buttons (highlighted in green and underlined to signify their significance as Kiva page operations) that indicate “Help”, “Home”, and “Back”. In this screen, the user has selected “House Fund” from the list, which takes us to the last screen of the wireframe.

* House Fund Screen:

Again, this screen will follow the uniformity of logo, title, and search bar consistency, along with Kiva navigation text buttons at the bottom of the screen. This page is presented because it shows the data representation to the client. One of the major goals, according to the borrower user story of the Kiva Project, the user wishes to stay informed and be able to pay back their loan. Using categorized data from the Kiva CSV spreadsheet, the design has been chosen to represent only the most vital information upfront to the user. The reason for this design decision is that we can make a smaller request for data from the Kiva cloud server, requesting only the exact information we need to achieve the goal. This includes Loan ID, Funded Amount, Loan Status (which can show active, inactive, or another type of option), Disperse Date, Lender Term, Repayment (schedule), and Repaid (progress). There may be other data that the user wishes to know, so further options have been added below the vital financial statistics. First, a Make Payment option is presented. This option was put below the financial statistics so that the user could review their data before deciding on whether or not to make a payment. This is an exercise in increasing user experience. Below that, is an option to discover more information. Other information that may be contained on this page is further lender details contained in the Kiva database (such as names of individual loaners, group loaners, how many loaners, locations of loaners, etc.). The values and data types must be represented properly to the user, to ensure that the Kiva Code of Conduct is followed. All of this data, their values, and their types, are the minimal requirements to complete the clients' goals with this low-resource application.

Of note, there are a couple of breaches of best practices and basic principles in user interface(UI)/user experience(UX) design, but they are done with a purpose. Keeping texts and fonts consistent (same size, same color, same style) is a basic guideline for UI/UX design (Apple Inc., 2024) (Google LLC., 2024), however, given the nature of the components needed in this project, certain features (such as bold, larger, brighter colors that signify the cursor location) have been enhanced against these best practices. Color, style, and size have been used in different ways (however remaining consistent between the methods they apply to) to reduce graphical images. This, however, does keep with the spirit of UI/UX design, enhancing the user experience and allowing a seamless interface between application components, which is beneficial to a borrower, by using color and font to aid in guiding navigation (Issacharoff, 2022). Consequently, this also benefits Kiva because it keeps cloud billing costs lower by keeping data usage (uploads and downloads) to a minimum which allows them to operate within their non-profit organization model. Keeping costs as low as possible to maximize funding for borrowers is a key aspect and is addressed in their Code of Conduct which requires that developers be mindful of data usage when interacting with their services and APIs.

**Kiva Cloud Adaptation Recommendation:**

Keeping this application minimal in cost of data transferring (transferring only necessary data to and from clients) helps Kiva to continue servicing underserved communities. This allows them to fulfill their vision of interest-free non-profit loans to groups or individuals who could benefit from this system while managing expenses. Designing a system that caches data, only retrieves data when it needs updating or is requested by the program/user, and draws only the data that is necessary for each user (either borrower or lender) to accomplish their goals as well as Kiva’s goals.

This brings the design to the communication required between components. In order to achieve this overall mission of a cost-reduced, interest-free, crowd-funded, and non-profit business model, communication between the users and the system must be carefully crafted. To adapt the system to this model, and the goals it is to achieve, data offered to lenders and borrowers must be carefully considered. The design must not permit access and transfer of all information categories found within the Kiva CSV files. The application (and the code that supports its function) should be securely designed to transfer necessary (pre-determined) information to each type of user. This means that the different users will require different sets of information. For example, whereas the borrowers only need the vital financial statistics details (and perhaps a bit of information about the person or group lending to them), the lender may want to know more information to help them determine whether or not to consider loaning. Information such as the needs of the borrower (such as what the money is to be used for, how it will help enhance that person’s quality of life or business performance, and even their prior loans and the successes that those loans have brought them), the location of the borrower (city, country, etc.), who has contributed to this loan already, and more. Many pieces of research-type information are not a “required” part of servicing a loan that could still be offered to aid the lender in making a more informed decision. This, in consideration, is a necessary part of the system. However, some of this information (such as location, other lenders, etc.) should still be treated as a “deliver upon request” style of communication. Carefully designing an interface and the behind-the-scenes programming that makes it functional is a vital step in offering the best possible service at minimal cost. Retrieving data once (caching) unless necessary is a component that needs to be implemented on the lender’s side of the interaction. Having the back end appropriately processing data retrieval will help ensure that communication between the clients and the cloud platform remains efficient while still delivering necessary components to each party. The UI design implements the retrieval method that will achieve these goals, by only offering what data is useful to each user. Another key concept that could be utilized to streamline this process is filtering. Oftentimes, a lender is looking for something specific (like location, age range, or even the amount of the loan). If the lender can focus on particular goals they might have (such as helping a particular area that is underserved), this can reduce the amount of data that Kiva must provide and which the customer has to sift through to help them accomplish this.

Even though there are different categories of data that each party is mostly interested in, there are some intersectional data requirements. The categories will mostly consist of vital financial statistics, criteria such as Loan ID (so both parties can track and monitor the loan), repayment schedule, balance remaining, and other important categories that affect both parties. It is important to address what information both parties will require and keep the transfer of that data between server and client simplistic and minimal to keep the cost of operating the system low.

**References**

Apple Inc., (2024).Developer.apple.com. <https://developer.apple.com/design/human-interface-guidelines/color/>

Google LLC., (2024). *Design Principles.* Developer.android.com. <https://developer.android.com/design/ui/wear/guides/foundations/design-principles>

Issacharoff, D. (2022, November 1). Color theory fundamentals every web designer should know. *Elementor.* <https://elementor.com/blog/color-theory-web-design/?utm_source=google&utm_medium=cpc&utm_campaign=10759652828&utm_term=&lang=&gad_source=1&gclid=CjwKCAjwnei0BhB-EiwAA2xuBvuvUlDPL_GR3iSOYpSgtZ0M0sDy0hxUS0aR4rYc1Fs6Wh_MsU-IbRoCZv0QAvD_BwE>