***Money Mobile: Kiva* App Design**

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***Kiva* and *Money Mobile***

*Kiva* is a 501 non-profit organization that allows low-income entrepreneurs, students, and others living in underserved communities to work with lenders across nearly 100 countries, to help assist with the borrowers’ financial needs (Kiva, n.d.). The *Money Mobile* app is designed to assist borrowers and lenders in making this process easier and more intuitive, using industry standard UX (user experience) guidelines like those created by Google and Apple. A mobile app for borrowers will be developed, as well as a cloud-based variant for lenders, as will be described in greater detail.

**Borrower App**

**Borrowers**

The mobile app, *Money Mobile*, allows these borrowers (and potential borrowers) to apply for and track loans through *Kiva*. The majority of loans – over 4000 of them at the time of this article – are given to citizens of Africa and Asia, primarily for agricultural and food-related costs (according to current data at [www.kiva.org](http://www.kiva.org)) Because of the current needs and available infrastructure in impoverished communities like Asia and Africa (Eurasia Review, n.d.), this app has been designed specifically for users expected to access the app on technologically-limited embedded devices (i.e. flip-phones). The Borrower app wireframe is included in the attached file entitled "*Module 7 - Project 3 (Money Mobile (Kiva) Wireframe).png*".

**User Interface (UI)**

The *Money Mobile* app will be created using a responsive and reactive layout, so if a landscape orientation is used, UI elements will scale and reposition accordingly. The app will also include the *Kiva* logo on the left-end of the status bar, located at the top of each screen, which acts as a hyperlink to [www.kiva.org](http://www.kiva.org) and gives a satisfying “click” when pressed. “Money Mobile” text will appear centered on the status bar, using a stylized font specific to the *Mobile Money* brand. All other text will use a normal Sans/Serif font to provide consistency with Android OS (Material Design, n.d.).

On the bottom of each screen (far-right end), a menu icon (three vertical dots) appears as a shortcut to the menu/settings as recommended by Google (n.d.) for the Android OS. The menu will allow a pop-up dialog to display with an account icon and text link that each navigate to the *Kiva* account screen, as well as a light/dark mode toggle switch, which defaults to the current system settings and provides a high-pitch and low-pitch “click” when turning dark mode on and off, respectively. The color scheme will match *Kiva*’s dark/light green branding colors, as allowed by the *Kiva* Code of Conduct (Kiva, n.d.). Turning on dark mode interchanges the primary and accent colors and inverts any black/gray/white text and background color. Finally, a “Back” and “Donate” link (left-to-right) will appear at the bottom of the menu dialog. Selecting the “Donate” link navigates the user to the *Kiva* donation screen to help support *Kiva*’s crowdsourcing model. The “Back” button simply closes the dialog and navigates back to the previous screen.

**Login Screen**

The login screen consists of “Login” in large, stylized text, followed by “To access your *Kiva* account” underneath in smaller text. Down farther, a “Username” label and text entry box appear above a “Forgot Username” link. This is followed by a “Password” label and text entry box, which obscures the input text, as well as a “Forgot Password” link. Finally, a “Submit” button to submit the login credentials to *Kiva*’s database servers, via the *Kiva* API, is done to authenticate the user for account authorization purposes. A *Kiva* account will be created if none exists, as stated to the user at the bottom of the login screen. Pressing the “Borrow” button emits a subtle, but satisfying, “ding” for extra dopamine release!

**Main Screen**

Following a successful account login, the user is presented with the main screen of *Money Mobile*, along with a melodically-friendly “chime”, with “Loans” rendered in a large, stylized font. The bottom text is replaced with the message “Money Mobile helps those in need borrow through Kiva – a non-profit”. Under the “Loans” text, in smaller, bold text, three columns appear to identify the most crucial data for each loan:

* Loan ID
* Amount Due
* Due Date

The loans are ordered chronologically by due date. If no loan exists, the message “Click (or Select) the ‘Borrow’ button to get started!” appears instead. The ‘Borrow’ button is centered near the bottom of the screen and is the most prominent button on this screen. Underneath each amount due is a “PAY NOW” button, followed by a “Details” link to the very right of each. Although the most-sought after information is found on the main page of the app, further information regarding the loan, lenders, and related information can be found by clicking on the “Details” link. If multiple loans exist, the list of loans may be vertically-scrolled if needed. At the right-end of the status bar, a notification bell will be displayed and implements an attention-grabbing red notification dot to indicate any new updates/messages. Pressing the bell “clicks” and opens the notification list, with notifications reacting to typical touch/swipe gestures.

**Data Integrity and Security**

The loan-specific details, like the account details, are accessed via the *Kiva* API (application programming interface), which accesses *Kiva*’s own database servers, in order to keep all account information up-to-date. The data can be updated and cached locally on the user’s device, whenever the user opens the app, makes a payment requests a loan, or refreshes the page. Local files will be encrypted using AES (advanced encryption standard) for secure data storage and data in transit, along with HTTPS/TLS (hypertext transfer protocol secure/transport layer security) requests. SHA (secure hash algorithms) will be used for login credentials between the user interface and *Kiva* API. Optionally, a CDN (content delivery network) can be implemented in various locations to allow caching for lower bandwidth infrastructures, as bandwidths of only 50 Kbps to 384 Kbps (2G or 3G, respectively) may be a limiting factor.

**Accessibility**

By default, Text will be black with an 87% opacity for high-emphasis text (like column headers and title) and 60% opacity for secondary text (like user’s loan information). Alternative text will be provided for input fields, buttons, and other important information to users who rely on screen readers. These UI design elements, including the dark mode option, follow the WCAG (Web Content Accessibility Guidelines) created and maintained by the WAI (Web Accessibility Initiative) of the W3C (World Wide Web Consortium) (Level Access, n.d.) and provide accessibility to those with visual impairments, including content descriptions for screen readers.

**User Experience (UX) Design**

This UI was designed with the user (borrower) in mind, including their needs and requirements. I believe most people will be either applying for a loan or checking an existing loan to check the balance and due date and optionally make a payment. This is exactly the information I included on the main screen, attempting to minimize the number of UI elements, due to the hardware/infrastructure limitations imposed by the flip-phone device (embedded device) of the primary user group and to make an effort to avoid distracting the user or creating an efficient and less effective UX. The loan ID for each loan is also displayed so the user may distinguish between multiple loans (if present). The message to “Press (or select) ‘Borrow’ to get started” is shown to guide the user, in the case no current loans exist for the user. The “BORROW” button is centered near the bottom of the screen and sufficiently sized for easy access and discovery. The “Borrow” button, “PAY NOW” button, and “Details” link are spaced substantially apart to make the process easier and less prone to error.

Another user need, as shown in the borrower’s user story, is to have access to information about *Kiva* and borrowing. The *Kiva* logo (in the status bar) serves as hyperlinks to *Kiva*’s website to satisfy this need. The notification bell provides a way to notify the user of any important updates or new information, so that they can stay informed as requested. The details screen (accessed via the “Details” link) provides all the loan information required to track the loan payback process, as needed by the borrower persona.

**Lender Cloud App Recommendation**

Using these same UX design principles and guidelines, a more sophisticated app can be created for *Kiva* lenders, based on a cloud architecture instead. However, even though cloud-based systems have the capacity to scale and be more sophisticated than limited embedded systems, *Kiva* is a nonprofit, and scaling data in the cloud can be expensive. Therefore, it is recommended that much of the system UI code and input validation be integrated into the client’s device, to cut down on cloud costs; however, personally sensitive account information (passwords) should remain on encrypted servers instead. Various tabs can be used to show lenders the distinct categories of related information for the borrowers, loans, and lending information, to help facilitate the decision-making process and transactional processes that are required. Because the technological components involved in cloud-based computing will be greater than its flip-phone counterparts, animations will be implemented into the lender application for tasks like opening the notification list or menu. More complex colors and UI techniques can be integrated into the UI elements, such as shadows to help show hierarchy among UI components.

**References**:

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