**Milestone: Data Priorities**

Justin Starr

Department of STEM

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Professor Erin Tirrell

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Kiva is a lending company that allows people to invest in low-income entrepreneurs and students in almost 100 countries. For borrowers, it is important that they be able to access their data using an embedded system (flip phone), and lenders must be able to access the information they need through the use of a cloud-based application. The following is an analysis that evaluates the data requirements for borrowers, discusses changes if any to these data requirements after reviewing borrow stories, recommends borrower data priorities for UI/UX development, and evaluates the data requirements for lenders.

The different users that will need to be able to access the system (from an embedded device) are borrowers and the system administrator or system developer/tester. The data that borrowers want to access locally are information about Kiva themselves and the process for borrowing from Kiva. Borrowers also need to be able to access information that helps them stay informed such as requesting a loan, the progress of their loans being funded, if the loan has been disbursed, and the ability to track their loan repayment progress. An administrator or system developer/tester needs to be able to access the system if any problems arise and something does not work correctly. They also need to be able to make modifications to the system as needed.

The data fields that will be most applicable to borrowers that are provided from the loans.csv file from Kiva are as follows: “LOAN\_ID”, “LOAN\_NAME”, “ORIGINAL\_LANGUAGE”, “DESCRIPTION”, “FUNDED\_AMOUNT”, “LOAN\_AMOUNT”, “STATUS, ACTIVITY\_NAME”, “SECTOR\_NAME”, “LOAN\_USE”, “COUNTRY\_NAME”, “TOWN\_NAME”, “CURRENCY”, “BORROWER\_NAMES”, “BORROWER\_GENDERS”, and “REPAYMENT\_INTERVAL” (Kiva, 2023). The remaining two .csv files do not contain information that the borrowers need to be able to access. The type of interface that is possible with the limited resources of an embedded system specifically for a flip phone is one with a simple screen that can display text with limited graphics and a keypad that utilizes T9 technology for typing and navigating the screen.

Functional and non-functional requirements should both be taken into consideration when designing a system (Sharp et al., 2019, 11.3.1 Different Kinds of Requirements). The design requirements of the system for borrowers are that the system be easy to access and navigate. Borrowers must be able to access the system from a flip phone. The information must be displayed in a manner that is conducive to scrolling on an embedded device. The system must be able to display information on a device that has limited resources such as memory, meaning that there cannot be so much information and/or images that the page would be unable to load properly. The design must incorporate accessibility elements such as a focus on objects so that the user can see where they are when navigating the system. The system should incorporate design elements that include Kiva’s design theme while ensuring the text is easy to read. The design must incorporate a method for borrowers to view a profile of themselves, see information about Kiva, request loans, be able to be informed regarding loans they actively participate in including the ability to track their loan payback process. The system should be able to be viewed in different languages and should take into consideration the way information is presented to people in different cultures. It should be reasonably fast and secure while considering the available technologies in various regions across the globe. Also, the system should be able to display the appropriate data to borrowers from the appropriate .csv files from Kiva.

The following five user stories were reviewed: Vangie, Jemalyn, Emma, Vard, and Julieta (Kiva, 2023). Vangie works to support her family, buys and sells charcoal, wants to save to expand her business, and will use the loan to purchase more charcoal to sell. Jemalyn is married with children, works to support her family, wants to save money to send her children to college, and will use the loan to purchase items like shampoo, groceries, etc. To sell in her general store business. Emma is also married and has children. She works to provide for her family, wants to send her children to college, and with a loan will purchase additional grocery and personal care products to sell in her general store. Vard has two sons who work abroad. Vard runs a farm and needs a loan to buy more seeds and fertilizer for her farm, as well as to hire workers. Vard was unable to repay a local loan due to circumstances and has secured a second chance loan through Kiva and a secondary partner. Julieta is married and has a general store business. Julieta needs a loan to invest in a sanitary toilet to reduce health/hazard risks to her family. I believe the data requirements I have previously discussed capture the needs of the user stories that were reviewed. One design requirement that I would add is that the system must be capable of running in places where the only access to the internet would be through the user's embedded device, through a mobile carrier.

The data that I would want to display in a UI/UX wireframe for an embedded device would include all the information related to Kiva, what they do, and how to borrow money. This is important so that the borrowers understand how the loan process works and how it affects borrowers. I would make sure information that relates specifically to the borrower is made available so that if mistakes are made or changes need to be made or updated that can happen. I would also want to incorporate a way for borrowers to request loans and track the status of these loans and their repayment process. This is important so that borrowers can monitor the status of their loans, have up-to-date information that pertains to them and any money they have borrowed, as well as to provide an easy and convenient method for requesting loans. I would also want to display information for loans that have not been paid yet which are still in the process of being funded so that the borrower is not left feeling like they do not know what is happening in the process of being funded. Because the data is being displayed for an embedded device, I would want to ensure there are links to each portion of the system that the borrower would need to access, that can be easily navigated through the use of the device's arrow buttons or similar.

Data that the lender wants to be able to access is information about potential borrowers and their requests, information about their and others’ lending data, and data about borrower loan payments including how much has and has not been paid back to the lender.

For lenders, the data fields from the lenders.csv that will be most applicable are as follows: “PERMANENT\_NAME”, “DISPLAY\_NAME”, “CITY”, “STATE”, “COUNTRY”, “PERSONAL\_URL”, “OCCUPATION”, “LOAN\_BECAUSE”, “OTHER\_INFO”, and “LOAN\_PURCHASE\_NUM” (Kiva, 2023). A much broader spectrum of interfaces is possible with the use of a cloud-based application. This can range from desktop, tablet, and mobile devices that include the use of graphical user interfaces.

The different users of the system will be lenders, Kiva staff, system administrators, and/or system developers/testers. Lenders need to be able to access the system to view potential borrowers and their related information such as what they are trying to accomplish and how much capital they are trying to raise. Lenders also need to be able to access information on how to become a lender, how much money they have lent to and to what borrowers, the status of the loans being disbursed, and how much money has been repaid to them. Kiva staff needs to be able to access the system in case borrowers have trouble or do not understand how to do something. They need to be able to assist both lenders and borrowers if there is a problem with a loan. System administrators and or system developers/testers need to be able to access the system to make modifications when problems arise. They need to be able to add/remove/modify users for the system. System developers/testers need to be able to access the system to make changes or updates to the system when necessary.

Again, functional and non-functional requirements are to be taken into consideration in the system design (Sharp et al., 2019, 11.3.1 Different Kinds of Requirements). The design requirements for the cloud-based application is that it needs to be accessible from devices that are capable of connecting to the internet. It needs to allow lenders to explore borrower requests, provide a method for analyzing lending data, and follow loan payments so that lenders can forecast how they will loan funds and plan the recycling of previously paid funds. The application needs to run on a server capable of handling a minimum of 10,000 lenders as well as Kiva staff and administrators (users). The system needs to be able to store information regarding borrowers, lenders, and their related loan information. The system should display to its users information about Kiva and provide a method for users to log in and see all data as it related to the user. The system shall conform to Kiva themes including chosen color schemes and sounds where applicable. The system must be easy to use and navigate, with enough allocated resources, such as system memory and processing and network speeds, to ensure no bottlenecking or long processing times occur. The system will be maintained and supported primarily through the cloud provider; however, system administrators, developers, and testers must have access to make changes/updates to the system as necessary. The system must provide a method for storing information as it pertains to all borrowers, lenders, and their related loan information. The system must be secure and stored in a secure facility with limited access by authorized personnel only. To adhere to cultural requirements, the system must be capable of displaying information in languages from all services countries, in the correct orientation (how the text is displayed). The system must display information to users in an intuitive way such as incorporating the use of a dashboard to ensure information is displayed in a friendly and readable manner to users, making data easier to understand.

**References**

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