**Capstone II – Final Presentation**

**Grant Saylor, Kyle Smith, Anthony Tran, Jiayi Xu**

**2/26/2021**

**Topic:**

***Total Runtime: 15-20 minutes***

**Presenters:**

* ***Anthony***
* ***Grant***
* ***Kyle***
* ***Jiayi***

***PRE-REQUISITES FOR GRANT:***

***AUTO HIDE TASKBAR***

***HAVE EMULATOR OPEN***

***HAVE FIREBASE OPEN***

***CLOSE ALL OTHER APPS***

***USE ALT-TAB TO SWITCH APPS***

**Transcript:**

***<Grant Saylor>***

**1 min – 5 mins:**

***SLIDE 1 – TITLE SLIDE***

**Hi everyone, this is Grant Saylor speaking. We are Libraworks and our app is Virtual Library. In this presentation, myself, Kyle, Anthony and Jiayi will present demos to showcase the refinements that have been done since the end of Capstone 1. First though I’ll start with a refresher of what Virtual Library is.**

**<NEXT SLIDE>**

***SLIDE 2 – A REFRESHER ON VIRTUAL LIBRARY***

**From the top down, Virtual Library is a through and through library application, providing a software layer to existing free-libraries. You may have seen these libraries dotted around your neighborhood or city, they are donation based and our application provides a way to see them on a map complete with their circulation.**

**The development team consists of myself, Grant Saylor, along with Kyle Smith, Anthony Tran and Jiayi Xu and is primarily designed in Kotlin for Android devices, with a bit of XML sprinkled in for page design.**

**<NEXT SLIDE>**

***SLIDE 3 – WHERE WE ARE IN DEVELOPMENT***

**Since you last saw a showcase of our app, at the end of capstone 1 we had just completed an overall prototype of our app, a very barebones experience that gave a taste of what Virtual Library was. In the months since we have begun feature additions, back-end improvements, and further refinement. From this point on we will focus on further polishing the application for a stable release.**

**<NEXT SLIDE>**

***SLIDE 4 – OVERVIEW OF NEW TECHNOLOGIES***

**In capstone 2 we have added various new technologies to Virtual Library such as Firebase authentication for secure o-auth user profiles, event handling via asynchronous tasks as you saw in our tech talk this quarter, along with experimentation of new and more complex android-app layouts. A demo showcasing all of these will follow.**

**<NEXT SLIDE>**

***SLIDE 5 – DEMO: USER AUTHENTICATION AND MAPS***

**<ALT TAB>**

**For our first demo I’d like to detail the user authentication and map functionality.**

**<LOGGED OUT TITLE SCREEN>**

**Here we are on the title screen of the application. Virtual Library allows you do everything but check out a book as a non-logged in user. When you reach the checkout screen you would be redirected to log-in.**

**<CLICK ON THE LOGIN BUTTON>**

**Here we have the sign in screen, utilizing the Firebase login utility.**

**<TYPE TEST@TEST.COM AND SAY LINES BELOW:>**

**Because I’ve logged in with this user before I am only asked for my password. If this was a new account it would also ask for my name.**

**<BACK ON TITLE SCREEN>**

**Now you can see that the title screen is slightly different. There are buttons to view your profile, sign out or delete your account.**

**<CLICK USER PROFILE>**

**This is the user profile screen where you can enter in personal information or add a book to your personal collection.**

**Kyle will demonstrate adding books to a user profile later in the demo.**

**<GO BACK TO TITLE SCREEN>**

**<CLICK ON VIEW LIBRARIES>**

**Now I’ll show you one of the main screens in our application, the map screen.**

**The map zooms into your geolocation and presents you with libraries added by other users.**

**If I want to add a map to the screen I can type in a name and click add library.**

**<TYPE NAME/ADD LIBRARY/DRAG TO MOVE>**

**I can move this library anywhere I want.**

**If I were to leave this screen and come back, you’ll see the library is still present on the screen.**

**<LEAVE/COME BACK>**

**As you can see all of the libraries repopulated.**

**Down on the bottom left you can see a “favorite libraries” button, clicking this <CLICK IT> you’ll see some favorites along with empty spots.**

**By long pressing a library <LONG PRESS LIBRARY> you can add this to your list for easy access. Long pressing <LONG PRESS LIBRARY> again will remove it from the list.**

**We wanted this screen to be easy to read, use and understand. A simple way to access libraries and see what books they have.**

**This however is just one way to see libraries and books, I’m going to hand it over to Anthony to demo the other major screen, the search screen.**

**<NEXT SLIDE>**

**<ALT TAB>**

***<Anthony Tran>***

**10 mins – 15 mins:**

***SLIDE 6:***

**Hi, My name is Anthony and I’m going to talk about the search functionality of our application. Our Virtual library application definitely needed to have a search function implemented so that it provides users with the greatest of ease and access when searching for books in our database. To begin, the user is required to type in a book title to begin searching through our database.**

**<TYPES IN “THINK AGAIN”>**

**After typing a search input and then searching, the program performs an async task to check and match the search input to book titles in our Book Database. If there is a match then the screen will populate up to 3 of the search results that match the user input**

**<PRESSES SEARCH BUTTON>**

**As you can see, the screen the populates any books that match the search results. The book cover is shown as well as the title, author and its corresponding ISBN**

**We also  implemented the search so that the capitalization of the search input does not matter, making it much easier for searching.**

**<TYPES IN “fOuR wINds” THEN PRESS SEARCH BUTTON>**

**Like previously, the book cover and information is populated, even though the title contains incorrect capitalization.**

**Here we can try another search input.**

**<TYPE “IN” IN THE SEARCH THE PRESS SEARCH RESULT)>**

**Our search functionalities are implemented to allows us to search using substrings of potential titles. Here are the search results for “IN”**

**If we press the forwards and backwards button at the bottom, then it will flip pages of search results.**

**<PRESS FORWARDS AND BACKWARDS WITH 2 SECONDS IN BETWEEN>**

**<CLICK A TEXT BOX WITH THE BOOK INFORMATION>**

**If we press on the text boxes, it will pop up a toast notification, which in the future will instead connect to other activities screens for further access and information.**

**Now lets try typing in some gibberish**

**<TYPE IN GIBBERISH AND PRESS SEARCH>**

**If there isn’t a match to anything in our database, then the application will send the user a notification that nothing was found, and wipe away previous books cover and information from previous searches**

**It’s still a work in progress but this is the current iteration of our search menu and its functionalities.**

**Now I’ll hand it over to Jiayi to talk about the library screen.**

**<NEXT SLIDE>**

**<ALT TAB>**

***<Jiayi Xu>***

**15 mins – 20 mins:**

***SLIDE 7:***

**<START FROM: MAIN PAGE>**

***Hi, this is Jiayi. I am here to talk about the Library View page.***

***For this page is to show each library’s information, like total books and copies of each book.***

***You can see the map button, Grant introduced this part before. Here is to show we can go through with Map and to see different libraries information.***

***When you click the library button, we use intent bundle to do data sync job.***

**<CLICK ON BIBLIOTHECA ALEXANDRINA>**

***As you can can see, the library’s name shows on top of the screen, and also you can see the Total books there.***

***This total books present the total books of this library, each library will have the same functionality.***

***Now, you can see there have three books in this library.***

***For each book, you can click the books cover to see how many available copies and how many total copies of this book.***

**<CLICK BOOK’S COVER: TO SHOW AVAILABLE COPIES AND TOTAL COPIES)**

***If user found the book in this library, they can click the “Begin Checkout” button to do check out, and it will jump to the barcode scanner screen.***

**<CLICK: BEGIN CHECKOUT>**

***For the feature change, we need to change the image scrollable or swipeable to make this page more flexible, and present more covers for user. Our group still working on this.***

***I will hand over to Kyle to introduce barcode scanner.***

**<NEXT SLIDE>**

**<ALT TAB>**

***<Kyle>***

**5 mins – 10 mins:**

**<START AT BARCODE SCANNER>**

***SLIDE 8:***

**Hello everyone, this is Kyle, and I’m going to talk about our check in/out process.  This activity is designed to handle a few different situations, depending on whether the user is trying to update a library circulation, or their personal collection, whether the book is being returned or checked out of a library, or even if that book is new to our database or not.  When the user arrives at this scan screen, our code detects what activity the user just came from.  If the user was previously at a library screen, that activity will pass the ID of the library here to the scanning screen for the checkout process.  If no library ID was passed, then we know the user arrived here from their user profile screen, and that they are going to be adding a book to their personal collection.**

**<MOVE MOUSE DOWN NEAR THE SWITCH, MAYBE TOGGLE IT BACK AND FORTH.  LEAVE IT ON CHECK-IN>**

**We can use this switch on the page to indicate whether the user is attempting to check out a book, or return a book that they have previously checked out.  This flips the state of a boolean that will adjust the way we update our database when the user hits the checkout button, which I discuss later.**

**<GESTURE TO THE CAMERA VIEW>**

**This black box on the screen inside of the gold frame is normally where we would be seeing the view of the camera on the device, but since we are using a phone emulator for this demo, it doesn’t display anything.  On actual hardware we would use this to scan the barcode on the back of the book to obtain the book’s 13-digit ISBN, which we then use to grab information from a book API.  Since this is on an emulator, we have an ISBN currently hard coded so we can see the checkout process despite not having a camera.  As soon as the barcode is scanned and we obtain that ISBN, we read through our database and check if that book is already in our records.  If it is not, we utilize the API to grab some information about it, such as the cover image of the book, the title, the author, and the publication date.  If the book is part of our DB already, we simply read a few of the attributes we want to display during checkout process, such as the title and cover.  Once the information is obtained, either from the API or from our DB, they are stored in local variables, waiting to be pushed or updated in the DB.  We wait to make any changes to the DB until the user clicks the checkout button below, confirming that this book is the one the user is wanting to complete the process with.**

**<MOVE MOUSE DOWN TO CHECKOUT BUTTON, CLICK IT SOMETIME WHILE I’M TALKING>**

**Once the user is ready, they can hit the checkout button and the information is sent to our database on Firebase.  Depending on whether this information is going to the library or user profile section, which the program determined earlier, the information will go to our database.  For the library portion, that means it will read the current inventory of that particular book and adjust it accordingly.  If the book is brand new and not in our records, that information is also sent to that section of our database, to make any future transactions with that title more efficient.  If this book was being added to the user collection, then it pushes that data to that location instead of the library part of our database.  As you saw, when the user clicks the button, we display the cover and send a toast notification as well to confirm to the user that the information was sent.  They can now safely back out of the screen.**

**<NEXT SLIDE>**

**In Capstone 3 we plan on adding new features like scrollable elements instead of utilizing button clicks to navigate pages. You saw an example of that on our search screen. In addition, we’d like to spice up our title screen by adding parallax scrolling and dynamic book covers. This will just make the initial presentation to the user more exciting.**

**Another focus will be tidying up the visual design as we’ve spent most of our time this capstone building out technologies.**

**Lastly we’d like to implement the capability to checkout from user personal collections instead of just from a public library.**

**<NEXT SLIDE>**

**Here are our development resource tool sources:**

**<NEXT SLIDE>**

**Here are the public domain sources we used for artwork:**

**<NEXT SLIDE>**

**Thank you! Does anyone have questions?**