MFA Capabilities of the IBM Cloud

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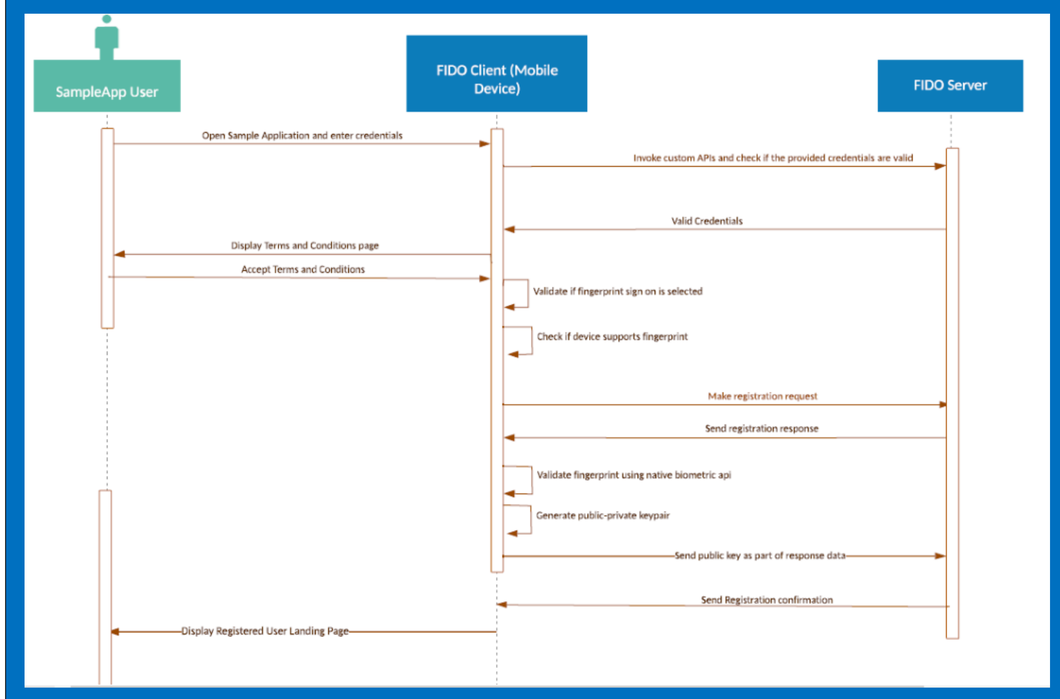
Introduction

I worked at PPS InfoTech, an IT-focused government consultant that mainly work on projects for the Department of Education.

I learned about a prototype mobile application they previously built for the Federal Student Aid Office. It was a proof-of-concept multi-factor authentication (MFA) application that would be used for performing user authentication during website logins.

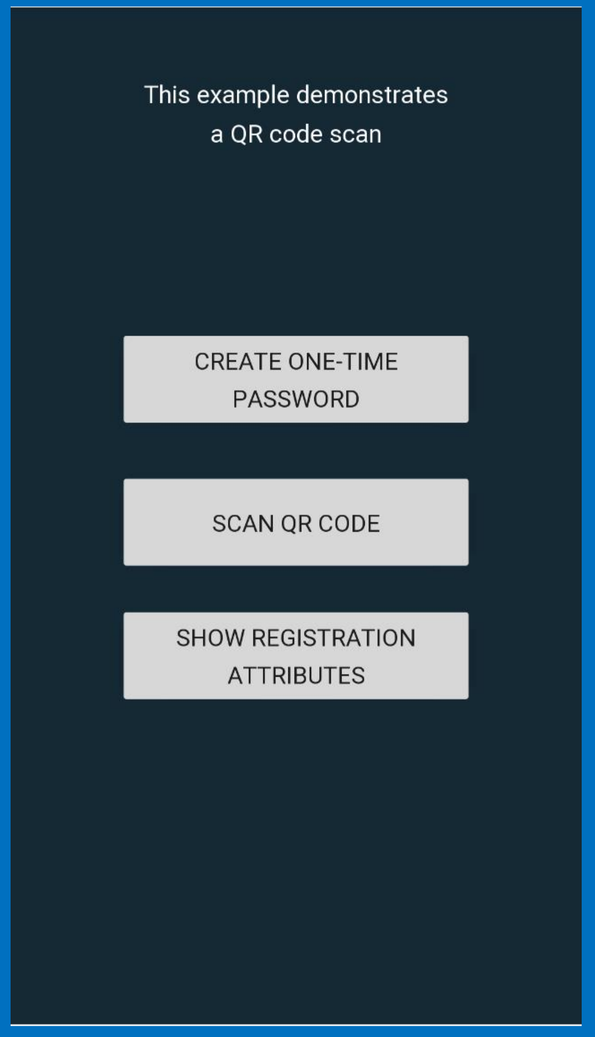
I was tasked broadly with continuing this project. My main objective was to conduct research on this application's MFA capabilities, specifically by performing authentication testing on the IBM Cloud.



This is an example of the authentication workflow for a FIDO-compliant authenticator. It displays the interactions between the client, application, and server, that would take place during biometric (e.g. fingerprint) authentication. Image credit: PPS Infotech

Activities:

- How does MFA work? I learned about FIDO Alliance and researched its universal authentication frameworks. FIDO = Fast Identity Online, an international consortium of technology companies focused on creating open, secure standards for consumer authentication.
- I had fun time tinkering with the app in Android Studio. Here's a sample of the UI for scanning QR codes!
- I learned the basics of Android Studio and mobile design.
- I worked with IBM-Verify SDK (Software Development Kit), which allowed the mobile app to interact with the IBM Cloud.
- And now, for my main accomplishment, the culmination of my work:
  I implemented a sample app for registering and authenticating an IBM Cloud user.



App Details:

- The main functionality of my app includes the receival and scanning of a QR code for authentication on the IBM Cloud.
- Additionally, I created a user interface for creating one-time passwords and seeing phone or registration attributes. This was helpful for me to test that I was receiving and sending the correct information from the Cloud server.

Site Information:

PPS InfoTech

Website: https://ppsco.com/

9201 Corporate Blvd, Suite 400, Rockville, MD 20850

Main Supervisor: Kumar Shah

"Our mission at PPS is to provide the best IT services that will help the most people to expand their knowledge, live in safety and security, and live healthier and more productive lives."

Future Work:

- In the future, I would like to add support for fingerprint or other types of biometric scanning for user authentication.
- I worked on my own sample app, and a great next step for me is to integrate my app with the prototype app created by PPS Infotech.
- Apart from implementing additional functionalities, I would enjoy taking the time to add some vibrant colors and clean up the UI.

Acknowledgments:

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