Design Review I: Teacher To-Do

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Team Introduction

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Sam Gerstner	• Team Lead/Backend Developer
Alexander Frenette	• Backend Developer
Noah Nannen	• User Interface Developer
Shlok Sheth	• Full Stack Developer
Chris Aungst	• Project Sponsor
Italo Santos	• Graduate Mentor
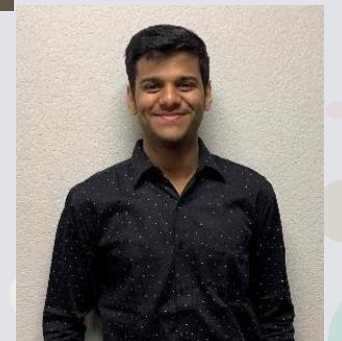
Introduction

- There are currently over 2,600 vacant teaching positions in Arizona and this trend can be seen across the nation.

- The Arizona Department of Education has started a new program that allows

undergraduate education students to fill these positions in lieu of the traditional student teaching experience.

- The College of Education must track all of the requirements associated with the STIC program. This is currently done via a manual process that takes a lot of time.

The Problem

- COE staff currently use a manual process to track requirements for each individual student teacher in an Excel spreadsheet.

- The STIC program is available to 12 different degree programs each with different requirements that must be managed.

- COE staff spend over 500 hours each semester on this process that could be used to provide other services to COE students.

- Accuracy and completeness are key aspects of this process because we must represent the University in a positive light.
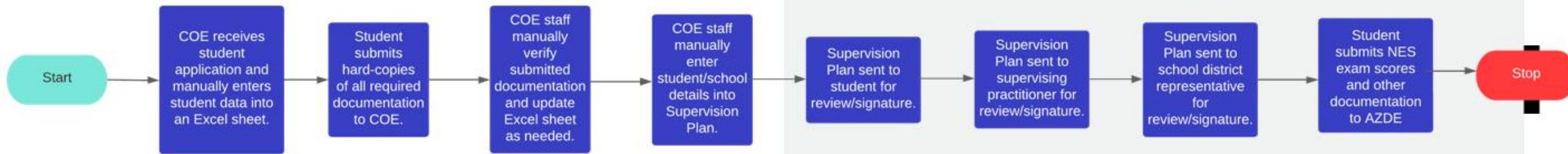
Solution Overview

- COE is looking for a web application
  - Help them manage and track student requirements in the STIC program
- Allows for storage tracking and storing any needed documentation
  - Allow for COE staff to easily view requirements for each students
- Ability to generate progress reports to see an overview of students' progress
  - Have it based on individual tracking
- Create the product in a mobile friendly web application
  - Allows both students and COE faculty to view the application
  - Tracks missing and completed requirements for different students
- The goal is to streamline the process of tracking student requirements associated with STIC
  - Reduce the administrative burden on COE staff

Functional Requirements

- Users can login using their NAU username and password
- COE can designate users as administrators to view all student data
- Students can login to see completed and remaining STIC requirements
- Students can upload supporting documentation to the application for review/approval by administrators
- Administrators have their own dashboard for viewing student progress
- Administrators can search for students and generate reports
- Administrators can review and approve supporting documents uploaded by students

Non-Functional Requirements

- Highly fault tolerant

- Redundancy of data storage

- Horizontal scalability through reverse-proxy/gateway

- Modularity and reusability
  - Each functionality can be derived from API

- Portability
 - Ability to replace front end as backend is independent

Environmental Constraints

- We have a lot of latitude with this project.
- Java
  - Spring Web: MVC & REST
- FileMaker Pro API
- CAS: Central Authentication Service
- Google Oauth2 services
- FERPA compliance
- Electronic Signatures
  - United States Electronic Signatures in Global and National Commerce (ESIGN) Act
  - Uniform Electronic Transactions Act (UETA),

Risks & Challenges

- The Primary risk is data protection
  - Ensuring protection of FERPA protected data is a high priority
- Reduced the risk of problems through our chosen technologies
  - Ensured all technologies were compatible before we began creation of the project.
  - All technologies are Java-based or able to be accessed through Java
- Reduced the risk of technical errors in code
  - Using a language that all team members are familiar with
- Ensure accuracy of data we read and produce
  - Need to ensure all student data is correct and accurate
  - Can drastically affect a student's progress
  - Any inaccuracy can lead to a false positive or negative
  - Can lead to acceptance to students who don't meet all requirements

Project Timeline
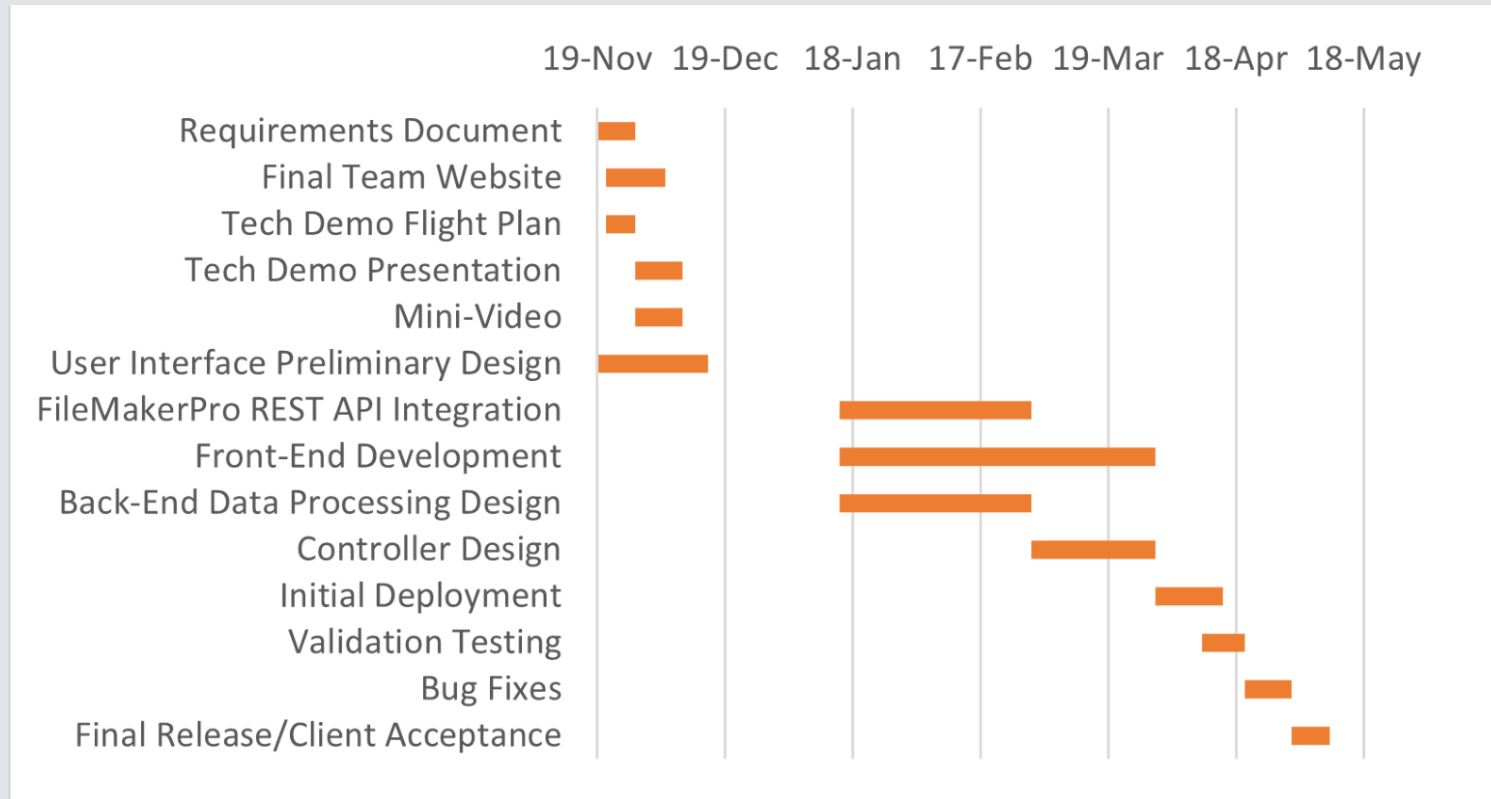
Conclusion

- The shortage of teachers in both Arizona and across the nation has created a demand for new teachers that cannot currently be met. States like Arizona are taking measures to address this shortage and get more qualified teachers in the classroom.

- By reducing the administrative burden of tracking and updating program requirements, our application will allow COE staff to spend that time on other services that benefit their students.

- We hope that our application will encourage more students to participate in the STIC program and help ensure a better future for all Arizona students.

- Our website will try to enable the full potential of the student teachers and help them track and follow through the journey seamlessly.