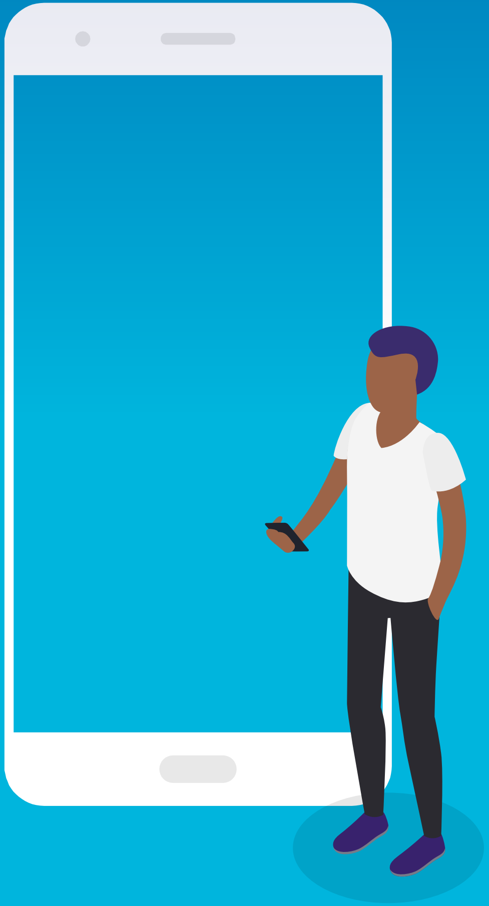
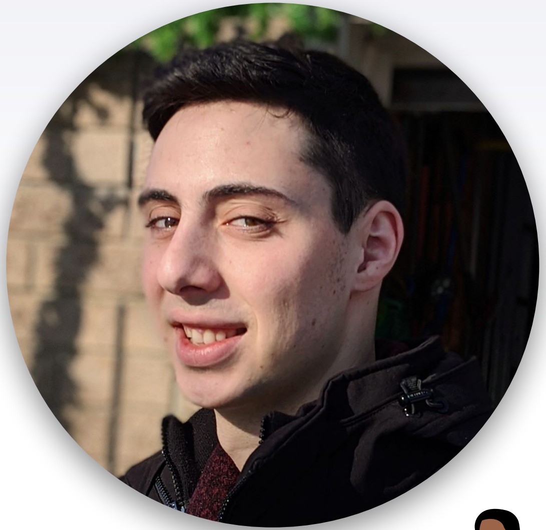
Class Application



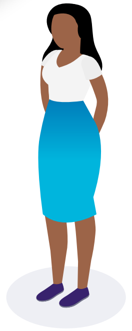
Our Team

Systems Developer
Database Admin

Process Analyst
Quality Assurance Analyst
Designer



Engineer
Team Lead
DevOps



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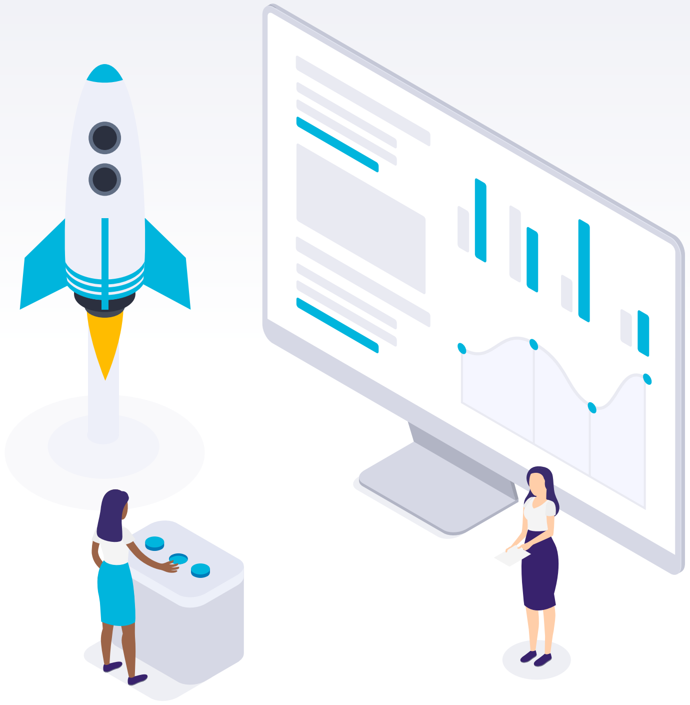
Introduction

Let's start with our description and problem statement



Proposal Timeline

- Outline Project **Objectives**
- Define **Measures of Success**
- Estimate Project Duration with **Activity Diagram**
- Perform **Risk Analysis** and note **Countermeasures**

Project Goals

- Develop centralized platform where students & alumni get updates about courses & events
- Helps management measure performance of school
- Develop Mobile and Web Applications Simultaneously

Objectives

- Application will be modularized based on user groups (student, management & alumni)
- Use **Banner** for authenticating all user groups.
- Web and Mobile platforms will use similar tech stack
- Program has Messaging System for communication between all users
- Management has extra powers:
  - Add/drop classes
  - Track discussions & messaging for harassment

Measures of Success

- Separate modules for each user group, with its own features (moving users between groups is also possible)
- Program redirects to **Banner** for logging in users
- Simplified maintenance due to similar tech and tools used by program
- Intra- and Inter-group communication is successful (and chat-room creation is enabled)
- Program informs management of harassment and cyber-violence
- Management is able to add/drop and edit classes

Technology Stack

Frontend

- React and React Native
  - Can use same framework for mobile and web

Server

- Go-Lang for HTTP Server with in-built concurrency
- Will work as an API with RESTful API endpoints or GraphQL
- NGINX for reverse proxy

Database

- Relational and user-permission managed
- Will handle events such as updates, harassment tracking, ...

Deployment & Production

- Amazon Web Services for hardware management
- Combine with Docker for CI deployment pipeline

Security

- Handled by the university
- SSL Encryption with Bearer-Token access

Testing

- Continuous Integration with **TravisCI**
- UAT Testing for mobile and web separately

Project Estimation

COCOMO

- Will follow **Semi-Detached** system model

- $E = a\,(KLOC)^b$
  $= 3.0\,(15)^{1.12}$
  $= 62.28$ person-months

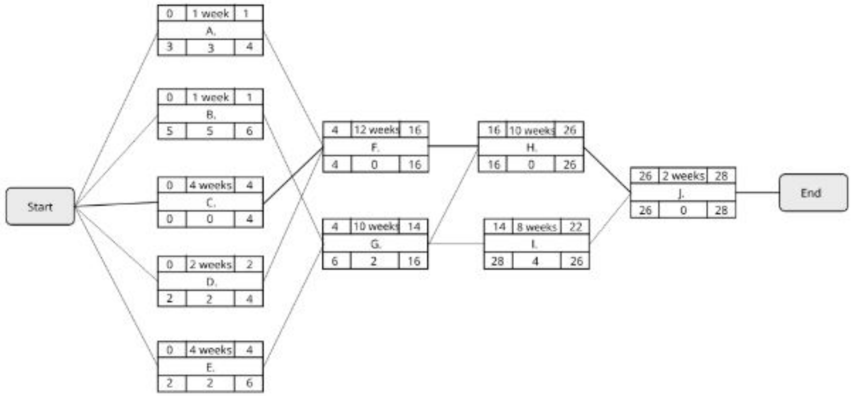
Albrecht Complexity Multipliers

- Used to estimate total function points

External User Types	Estimate	Complexity	Total
EI	6	4 (Medium)	24
EO	10	5 (Medium)	50
EQ	4	3 (Low)	12
LIF	4	10 (Medium)	40
EIF	2	10 (High)	20
		Total Function Points (FP)	146

Activity Diagram

- A: Development Server Setup (1 wk)
- B: Mobile Env Setup (1wk)
- C: Data collection (4wks)
- D: Create software architecture for server (2wks)
- E: Design UI/UX (3wks)
- F: Server Development (6 sprints, 12wks)
- G: Mobile application Development (5 sprints, 10wks)
- H: Quality Assurance (5 sprints, 10wks)
- I: User Acceptance Testing (2 sprints, 2wks)
- J: Set up production server and deployment (1 sprint 2wk)



Risk Analysis

Tech Setup Complications

- Initial setup may be hard to modify in later stages
- **Solution**: Conduct extensive prior research

Vague Requirements

- Requirements spec. page is too broad
- **Solution**: Follow Agile and connect with client after every increment

Inconsistent Data

- Test data from client can have faults.
- **Solution**: Spend time cleaning and pre-processing data

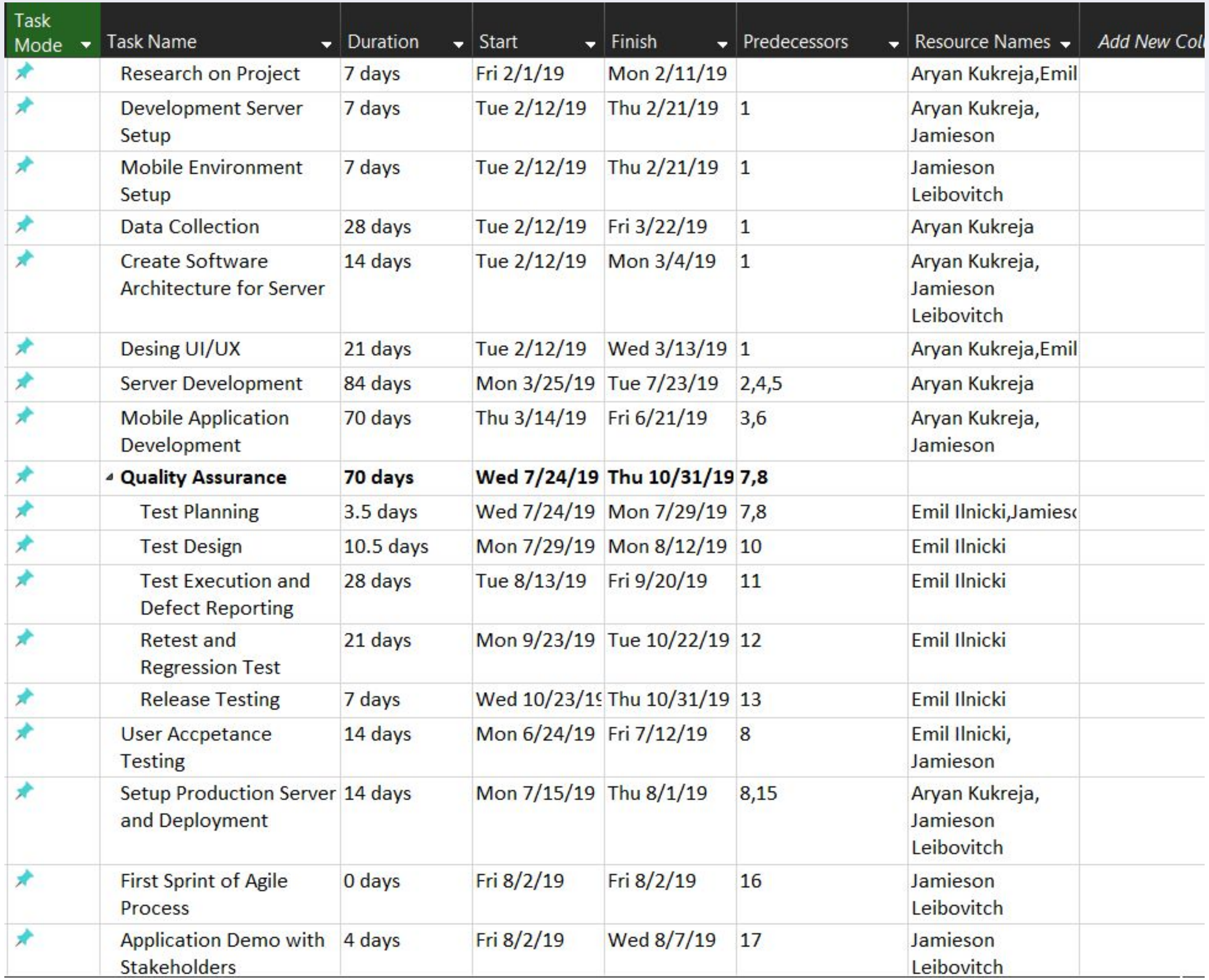
Unclear Client Design

- Requirements can be misinterpreted
- **Solution**: Use SQA group to interface with client

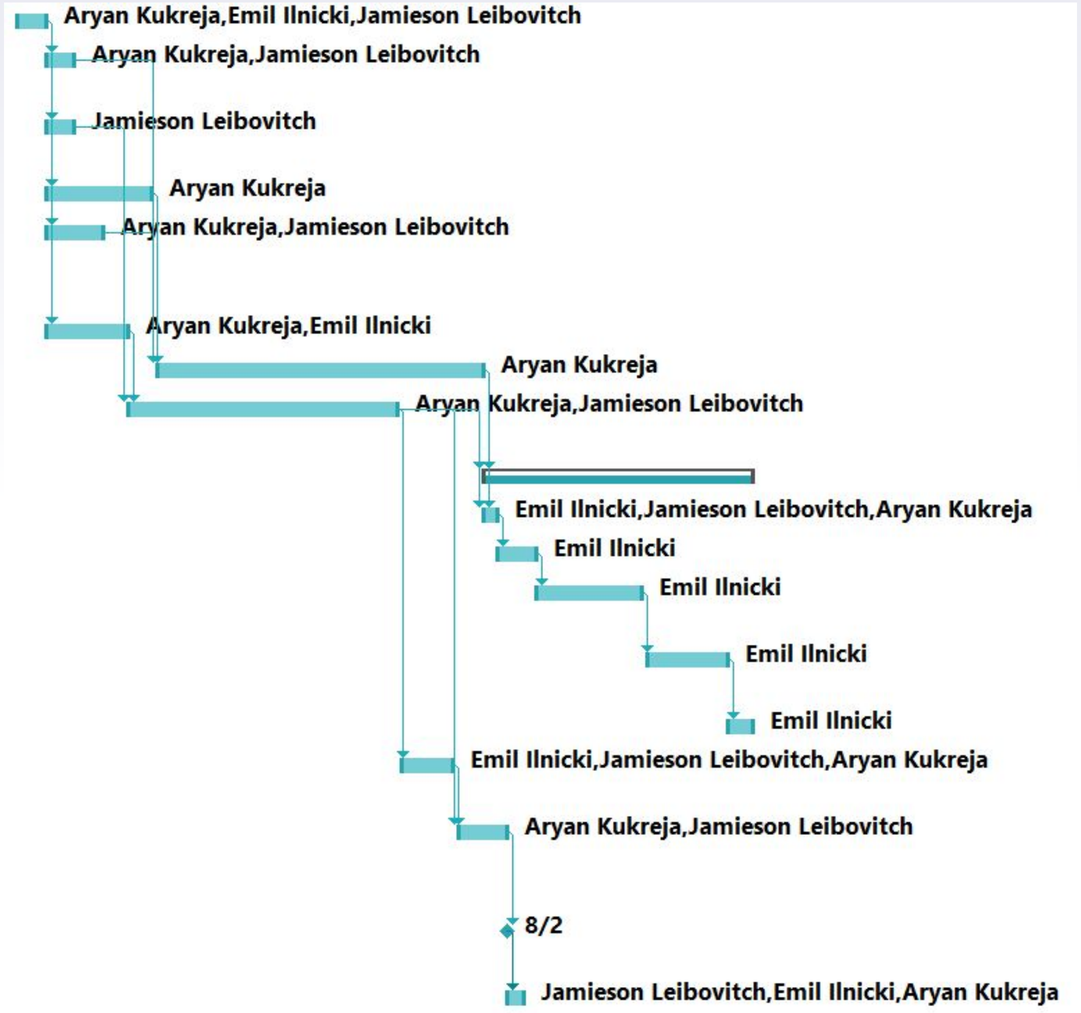
Missing Sprint Deadline

- Increment deadlines missed in Agile process can delay final product
- **Solution**: Reduce increment size; *under-estimate* expectations

Gantt Chart



Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Add New Col
📌	Research on Project	7 days	Fri 2/1/19	Mon 2/11/19		Aryan Kukreja,Emil	
📌	Development Server Setup	7 days	Tue 2/12/19	Thu 2/21/19	1	Aryan Kukreja, Jamieson	
📌	Mobile Environment Setup	7 days	Tue 2/12/19	Thu 2/21/19	1	Jamieson Leibovitch	
📌	Data Collection	28 days	Tue 2/12/19	Fri 3/22/19	1	Aryan Kukreja	
📌	Create Software Architecture for Server	14 days	Tue 2/12/19	Mon 3/4/19	1	Aryan Kukreja, Jamieson Leibovitch	
📌	Desing UI/UX	21 days	Tue 2/12/19	Wed 3/13/19	1	Aryan Kukreja,Emil	
📌	Server Development	84 days	Mon 3/25/19	Tue 7/23/19	2,4,5	Aryan Kukreja	
📌	Mobile Application Development	70 days	Thu 3/14/19	Fri 6/21/19	3,6	Aryan Kukreja, Jamieson	
📌	**Quality Assurance**	**70 days**	**Wed 7/24/19**	**Thu 10/31/19**	**7,8**		
📌	Test Planning	3.5 days	Wed 7/24/19	Mon 7/29/19	7,8	Emil Ilnicki,Jamies	
📌	Test Design	10.5 days	Mon 7/29/19	Mon 8/12/19	10	Emil Ilnicki	
📌	Test Execution and Defect Reporting	28 days	Tue 8/13/19	Fri 9/20/19	11	Emil Ilnicki	
📌	Retest and Regression Test	21 days	Mon 9/23/19	Tue 10/22/19	12	Emil Ilnicki	
📌	Release Testing	7 days	Wed 10/23/1	Thu 10/31/19	13	Emil Ilnicki	
📌	User Accpetance Testing	14 days	Mon 6/24/19	Fri 7/12/19	8	Emil Ilnicki, Jamieson	
📌	Setup Production Server and Deployment	14 days	Mon 7/15/19	Thu 8/1/19	8,15	Aryan Kukreja, Jamieson Leibovitch	
📌	First Sprint of Agile Process	0 days	Fri 8/2/19	Fri 8/2/19	16	Jamieson Leibovitch	
📌	Application Demo with Stakeholders	4 days	Fri 8/2/19	Wed 8/7/19	17	Jamieson Leibovitch	


Aryan Kukreja,Emil Ilnicki,Jamieson Leibovitch
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Emil Ilnicki,Jamieson Leibovitch,Aryan Kukreja
Aryan Kukreja,Jamieson Leibovitch
8/2
Jamieson Leibovitch,Emil Ilnicki,Aryan Kukreja

THANKS!

Any questions?