



UGA – Watershed Project

Fall 2016 Capstone Project Review
Factor Five Technologies



Agenda

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- Client and Purpose
- Project Stakeholders
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- Current Client Challenges
- Overall Project Solution
- Application Workflow
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 - Technology Platform
- Use Case
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- Key Takeaways
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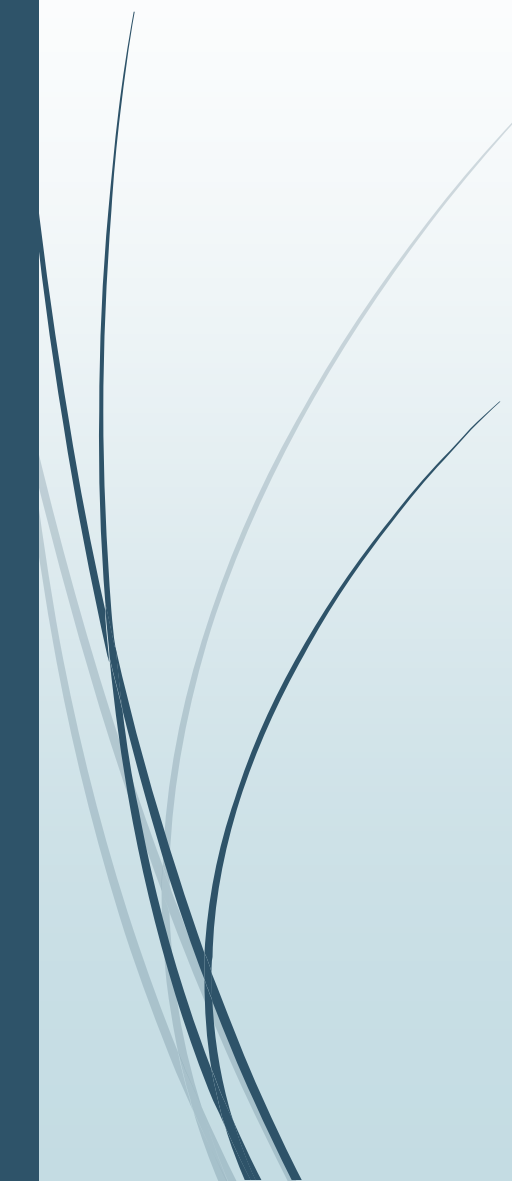
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Team Factor Five Members

- Nhia Vang
- Brian Way
- Michael Crawley
- Glen Falk
- Mathew Alexander



Capstone Project – Client and Purpose



Watershed UGA (<https://www.watershed.uga.edu/>) is an initiative aimed at fostering a sense of stewardship and sustainability through increased awareness-- and eventual restoration-- of the mostly hidden streams and lakes of the Athens campus.

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Project Stakeholders

- Dr. Seth Wenger – Project Sponsor
- Todd Rasmussen - Project Liaison
- John Dowd - Project Liaison
- Michael Lewis - Project Liaison
- Scott Connelly Project Liaison
- UGA Faculty
- UGA Students

Stakeholder Map





Project Requirements

- Enhance the existing central repository for watershed data collected via a network of sensors.
- Develop a centralized database for data collected manually by faculty and students
- Develop a web portal connected to the Watershed UGA web site that renders the manual data in a user-friendly fashion to multiple users

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Current Client Challenges

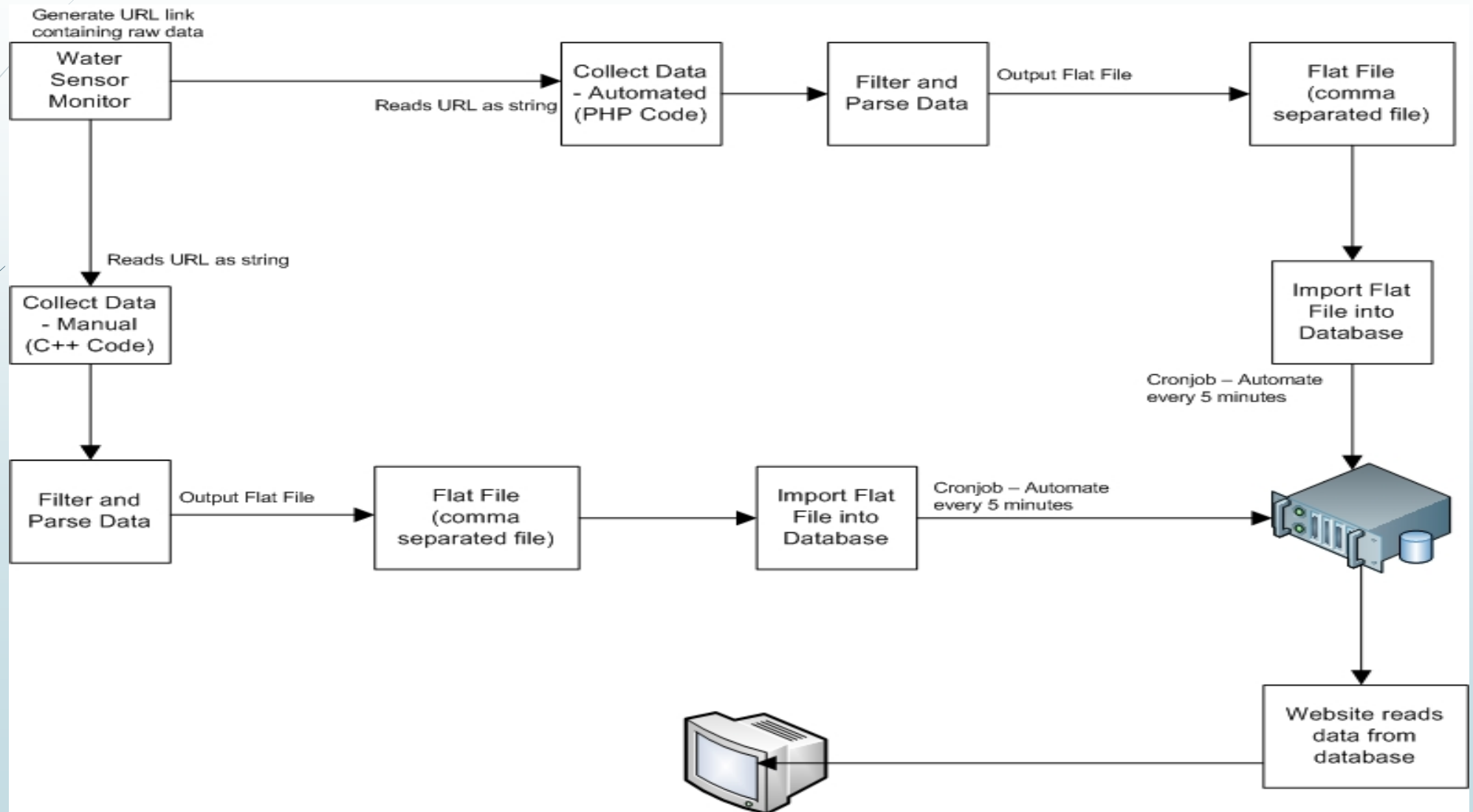
- Database dashboard is reading data from a single raw flat-file
 - Not scalable
 - Performance issue
- Front-end site needs styling improvement for easy readability
- No data standardization - data sets
- Lack of central repository for data manually collected by faculty and students
- Need for web portal to display collected data
- Lack of dedicated IT expertise

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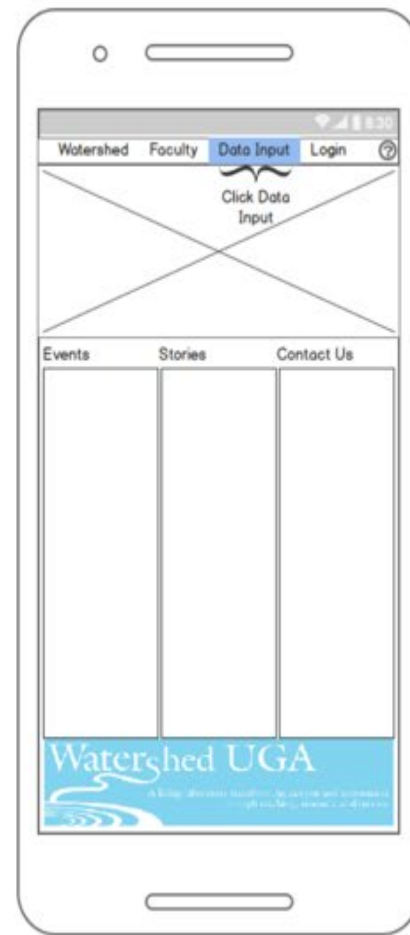
Overall Recommended Project Solution

- Provide an IT solution to extract, transform, and load data into the database (MySQL)
- Recommend and implement data integrity standards
- Design, Develop and Deploy database for manual data collection
- Design web portal for display of collected data

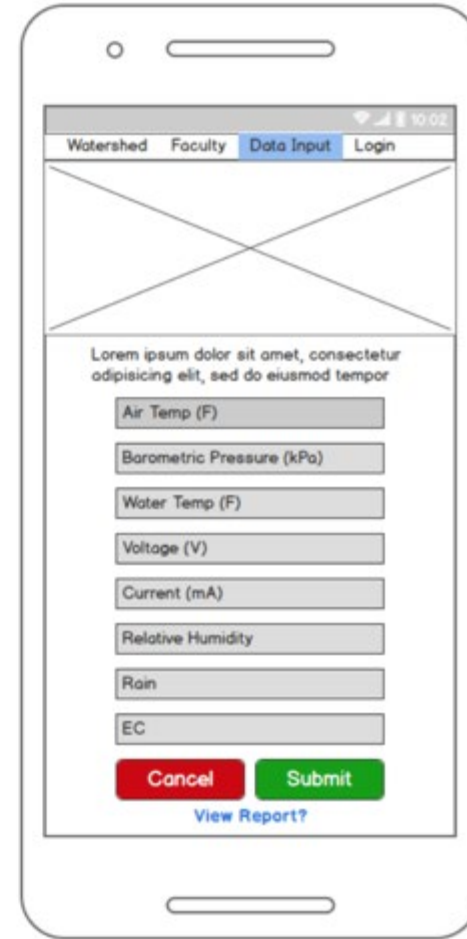
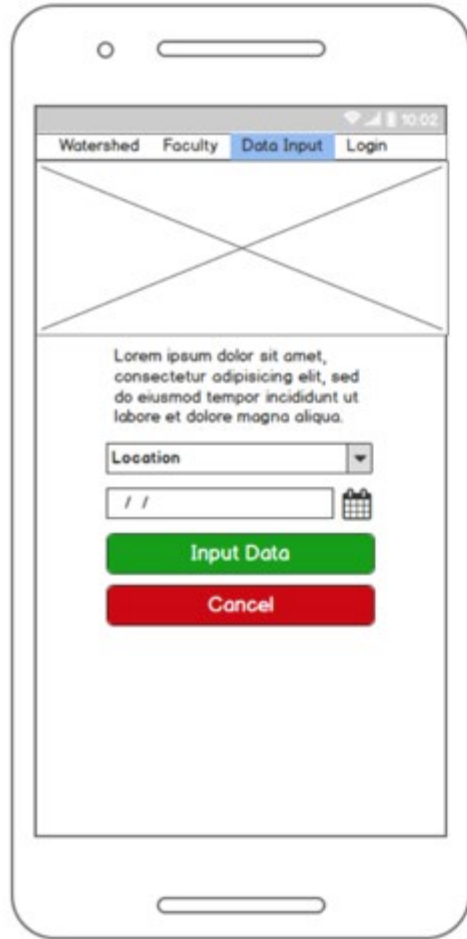
Application Workflow



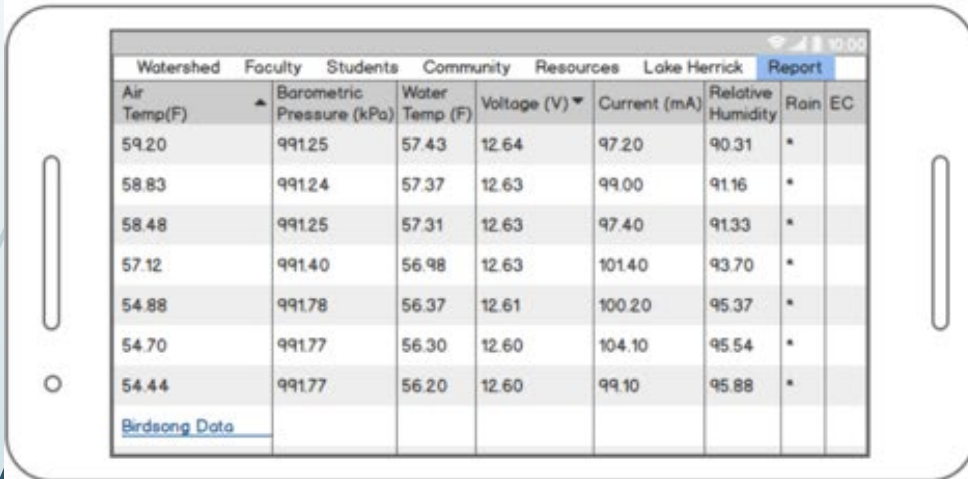
Wireframes – Login Screen



Wireframes – Mobile – Enter Data



Wireframes – Mobile - View Data



Watershed Faculty Students Community Resources Lake Herrick Report

Air Temp(F)	Barometric Pressure (kPa)	Water Temp (F)	Voltage (V)	Current (mA)	Relative Humidity	Rain	EC
59.20	99125	57.43	12.64	97.20	90.31	*	
58.83	99124	57.37	12.63	99.00	91.16	*	
58.48	99125	57.31	12.63	97.40	91.33	*	
57.12	99140	56.98	12.63	101.40	93.70	*	
54.88	99178	56.37	12.61	100.20	95.37	*	
54.70	99177	56.30	12.60	104.10	95.54	*	
54.44	99177	56.20	12.60	99.10	95.88	*	

[Birdsong Data](#)



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Technology Platform

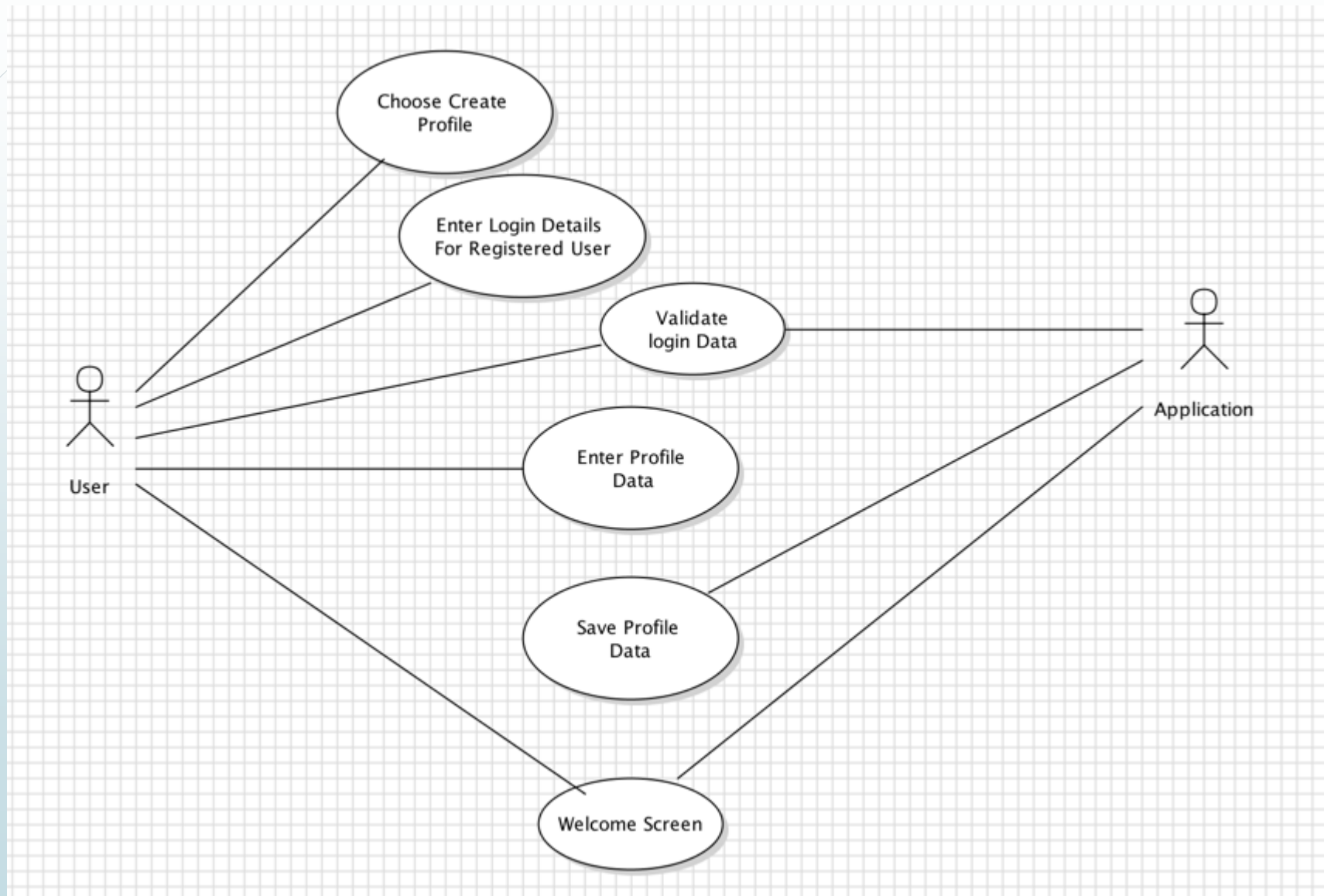
- My SQL server
- GitHub
- Slack
- Php7
- Apache HTTP Server
- Linux Server
- Javascript
- JQuery
- HTML5
- CSS

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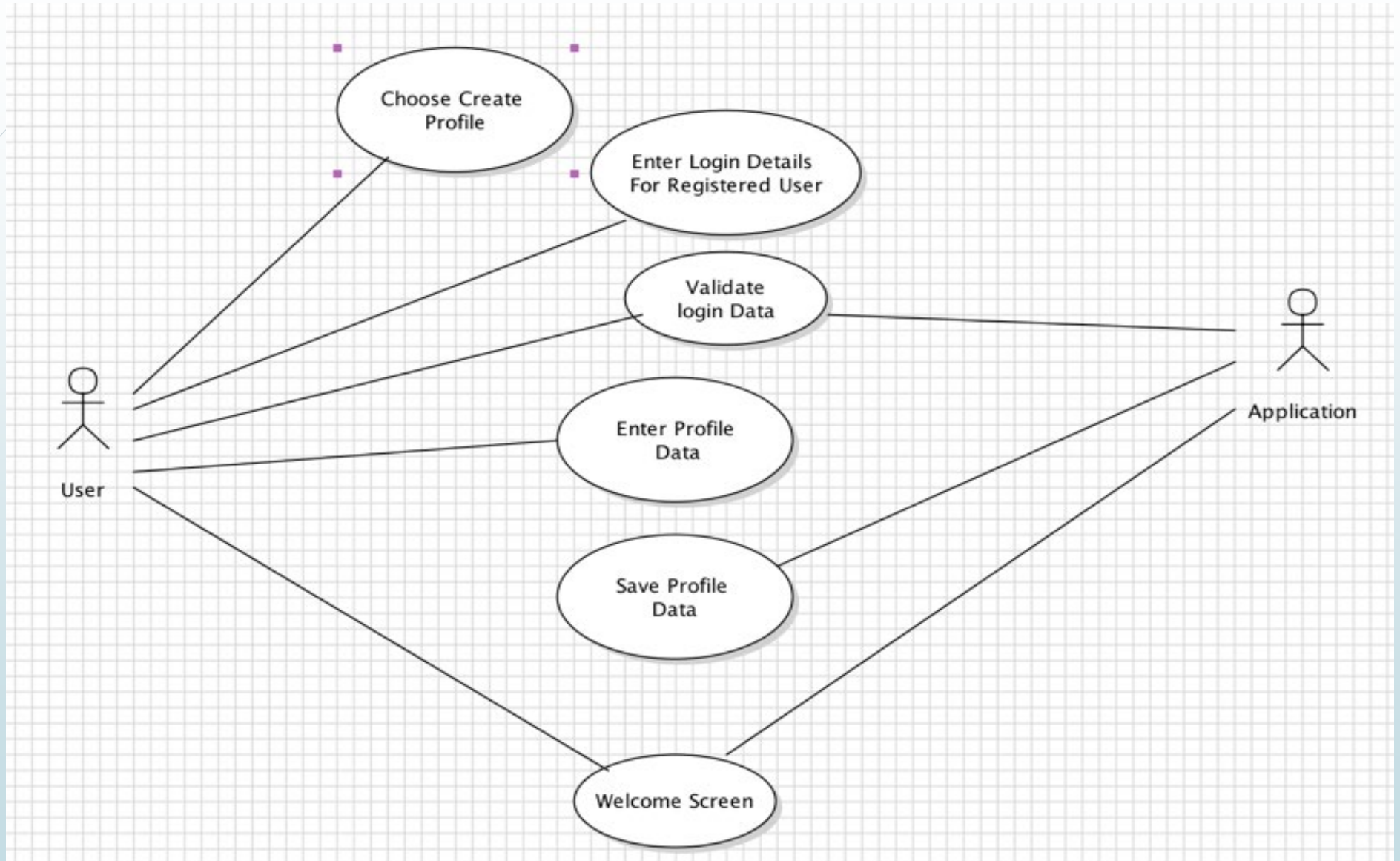
Communication Tools

- Google Drive
- Google Hangouts
- Gmail
- Slack

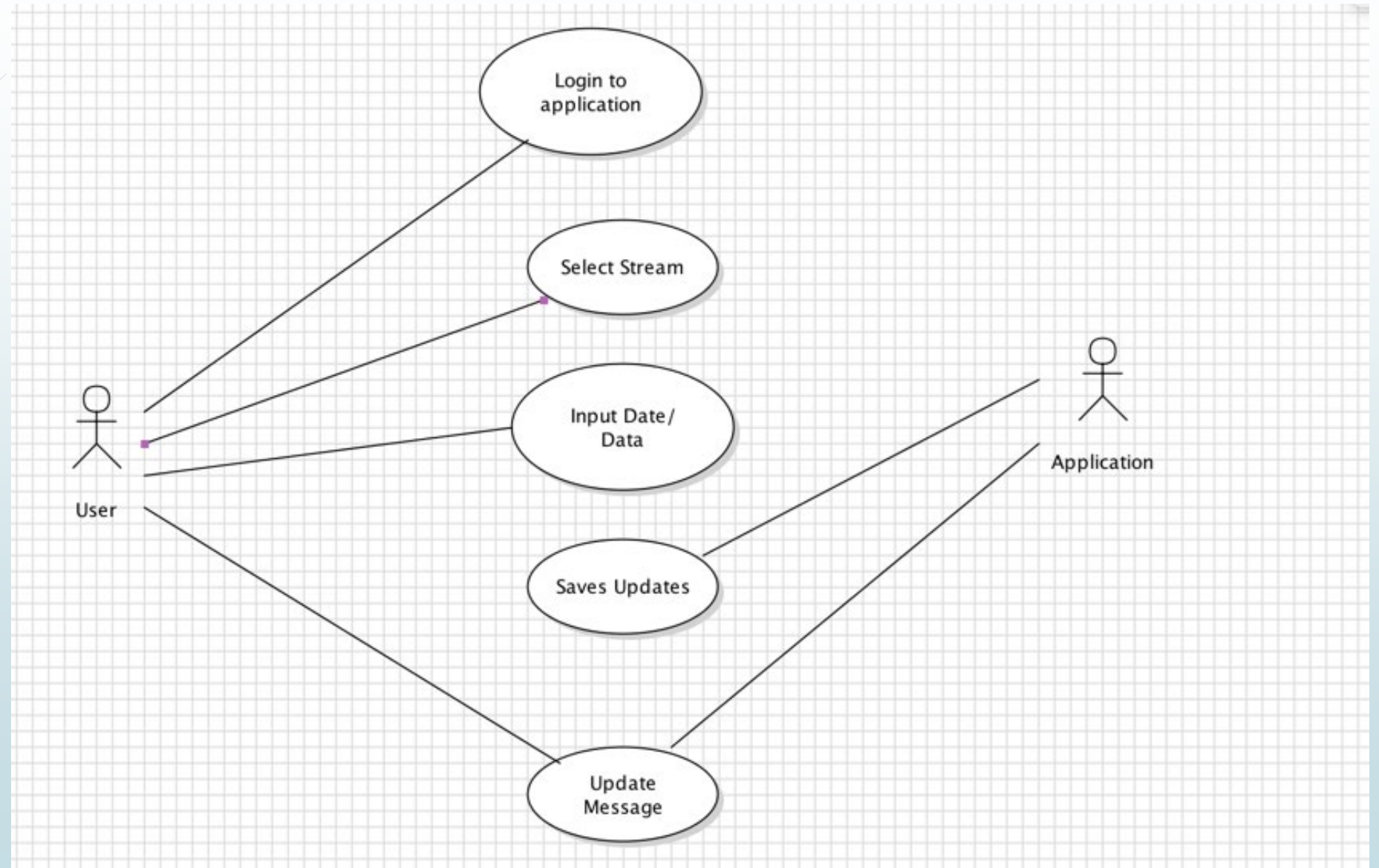
Use Cases- Login



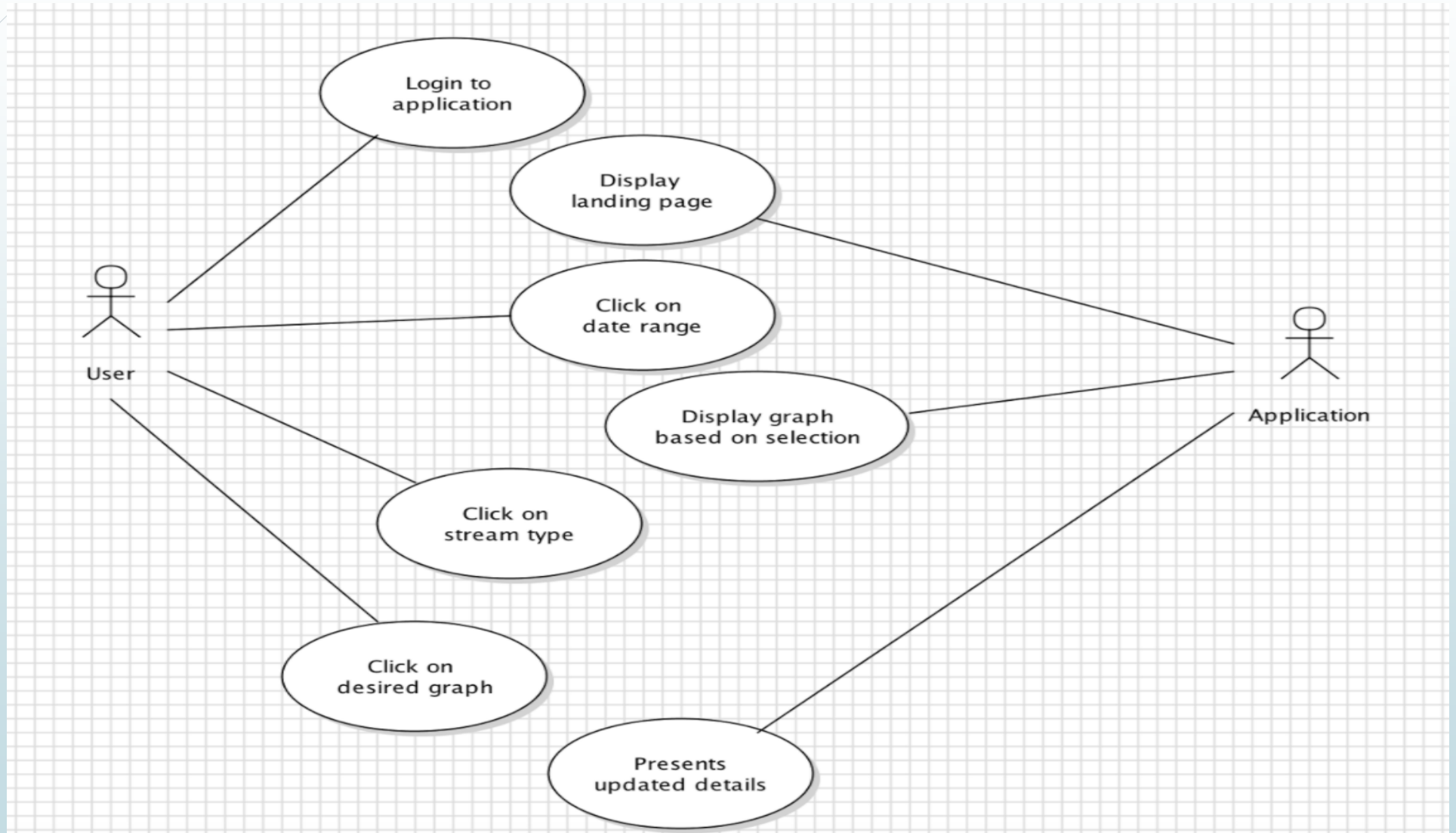
Use Cases- Update Profile



Use Cases- Input Data



Use Cases- View Data



Project Plan

MILESTONE	DELIVERABLE	Status / Due Date
Project Charter	· Project Charter	In-Progress
Application Framework	· Wireframes · Application Flow	Completed
Database Architecture	· Data Models	In- Progress
Program Content	· CSS Standards · Images · Output Data	Start of Term 2
Technology Architecture	· Tech Stack / Architecture	End of Term 1
Build Application - Database	· Database model · Static Databases Loaded	Start of Term 2
Secure Staging Environment	· Set up the staging environment	End of Term 1 /Start of Term 2
Build/Test Application	· Working Application	Term 2
Semester 1 Project Binder	· Project Binder	December 7, 2016
Semester 2 Project Binder	· Final Project Binder	May, 2017
Knowledge Transfer	· User Manual	End of Term 2
Production Version	· Complete Application	End of Term 2

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Project Team Challenges

- Learning and developing with new technologies (i.e. PHP-7)
- Managing Project Requirements
 - **Managing Scope**
 - **Setting Expectations**
- **Managing multiple stakeholders**



Key Takeaways



- Stakeholder management
 - Roles
 - Influence
 - Power
- Risk Assumptions
 - Failure to deliver on both projects
 - Lack of succession planning on maintenance
 - Upsetting stakeholders**
 - Legacy data incorporation
 - Learning curve of new technologies
 - Division of labor between resources

Questions

