CISC498 Requirement Document:
Web-Based Real-time Data Explorer

Group 8
Presenter:
Yucan Li, Yiming Zheng, Wenran Hou, Zhibing Liu, Huilin Xu

Members:

Yucan Li 18yl259@queensu.ca

Yiming Zheng 19yz38@queensu.ca

Wenran Hou 18wh10@queensu.ca

Zhibing Liu 18zl142@queensu.ca

Huilin Xu 18hx16@queensu.ca

Supervisor: Jianbing Ni

Customer: Laura Thomson, Christopher Omelon, Madeline Myers

Glossary:

- Node.js: it's a JavaScript runtime built on Chrome's V8 JavaScript engine.

- React.js: it's an open-source JavaScript framework and library developed by Facebook

Introduction: Web-based Real-time Data Explorer

What does this Explorer can achieve:

- Providing a platform for Arctic researchers to share their scientific findings (ICELab)

- Making Arctic research more accessible and easy to understand

- Gather research information from 4 Arctic weather stations.

User Group

- ICELab Administrator (Professors)

- Queen's University Students

- Arctic Environmental Researchers

- Individual or community who are interested in Arctic Climate and Environment

- User should be familiar with browser such as Chrome, Edge, Firefox on multi-platform such as PC, Mac and Mobile phone.

- User should know .csv type file and have software such as excel, notepad that can open it.

Context of Operation

- Location: Anywhere has internet connection

- Hardware Requirement: Electronic device(smart phone or PC)

- Other Requirements: Device that support Node.js and React.js

Current Processes
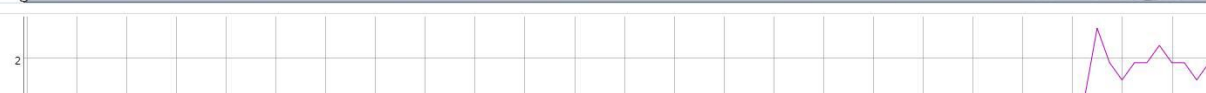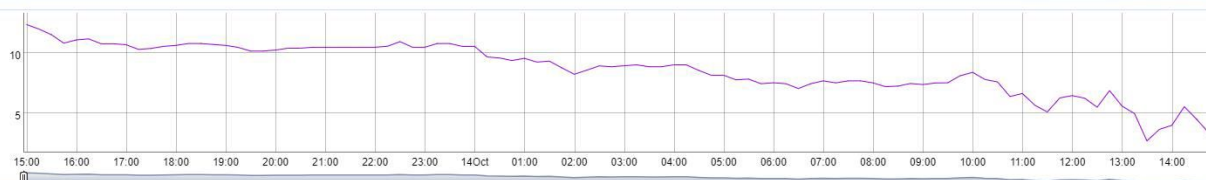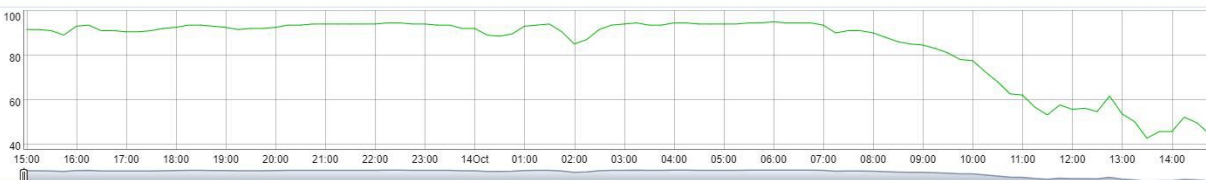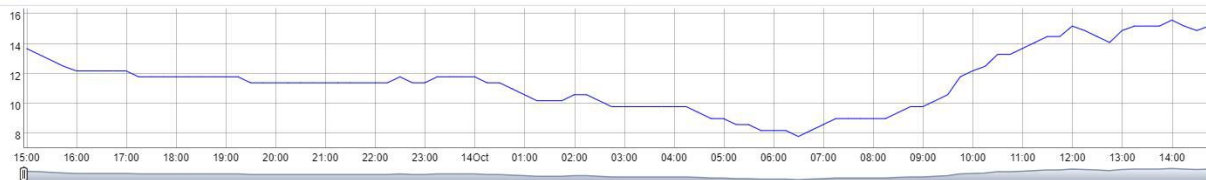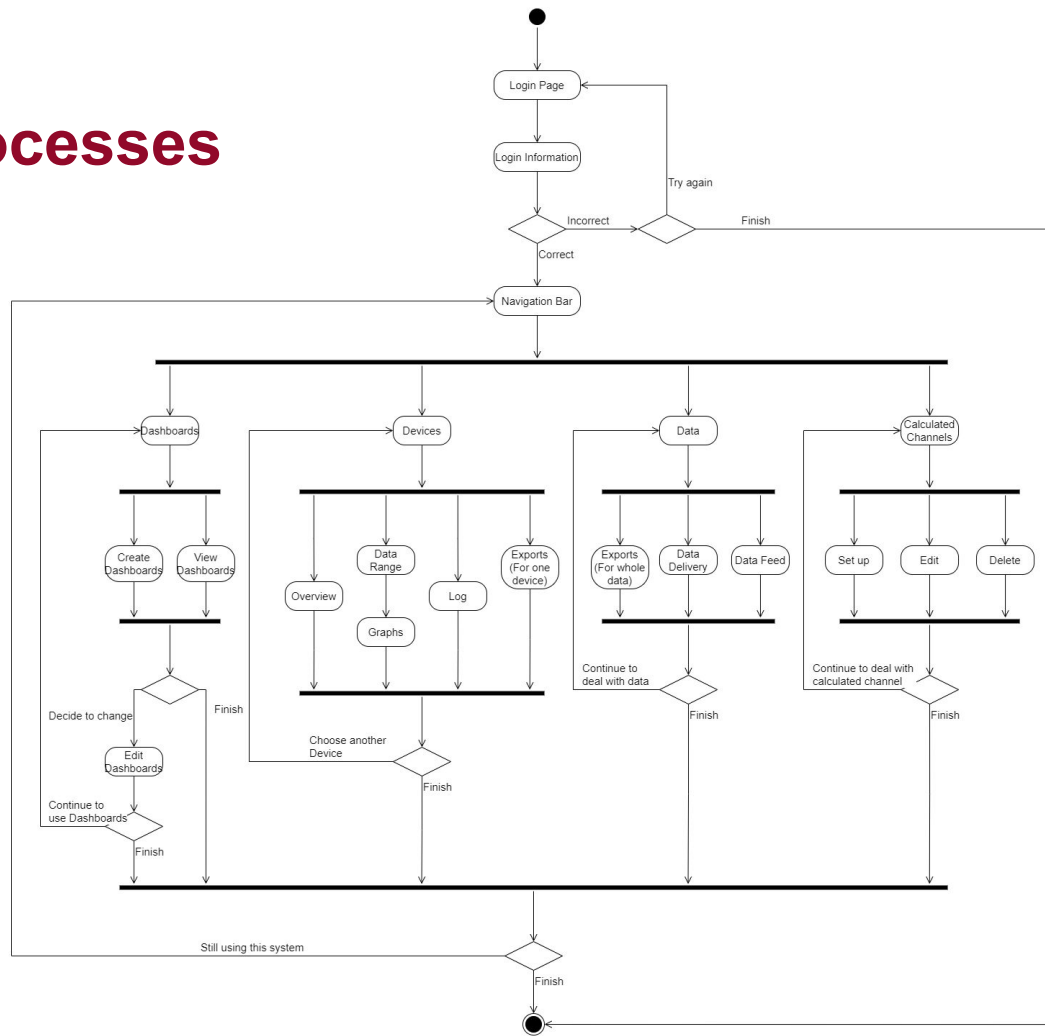
Current Processes

Roles

- **Website Maintainer**
  - Create the website according to Customer's requirement
  - Maintain the stable operation of the website
  - Protect user's privacy and data security
- **Website Administrator&Data Manager**
  - Managing dataset including updating, deleting.
  - Manage user accounts and track user who download datas.
- **Visitor(Student&Researcher)**
  - Search and download data
  - Propagating or using data within rules set by website.

Functional Requirements

ID	Priority	Requirement
R1	Critical	New users can create an account
R2	Critical	Users can download research data
R3	Critical	Users can perform simple statistical analyses
R4	Critical	Users select research data of their preferred period and location
R5	Critical	Administrator can create admin account

ID	Priority	Requirement
R6	Critical	Administrator can upload data to the system
R7	Critical	Data graphical interfaces shall include multiple processing methods
R8	Important	Administrator track user behavior
R9	Optional	Online Frequent Questions Survey
R10	Optional	Illustrated Research Data Delivery

Non-functional Requirements

Usability Requirements:

- **USE-1:** 80% of the users shall be able to successfully download a set of data in their first try.

Performance Requirements:

- **PER-1**: The system shall allow more than 10 users to download or view the data in the same time.

- **PER-2**: the download of data should not take over 1 min on a 50 MBPS Internet connection.

Security Requirement:

SEC-1: the vistor shall not be able to edit or upload the data.

SEC-2: The un-registered users shall only view the data.

SEC-3: Only the administer and data manager shall upload the data.

Availability Requirements:

AVA-1: the system shall be available at least 95% between 8:00-24:00 and more that 90% of the time between 0:00-7:59. Excluding maintenance periods.

Maintainability Requirements:

MAN-1: A single maintain process shall take no longer than 48 hours.

Summary

- Broadly and effectively communicate scientific findings.
- Presesnt Arctic research data in multiple ways.
- The Web-Based Real-time Data Explorer meets high usuability

   and securitry requirements.

- To help the geologists researchers to better view and process the data in their studies.

Thots?
Kweschens?
Konsurnz?

Thanks For Watching!