ISU Statistics Tracking Proposal

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Project Team

Responsibility	Team Member
Project Manager	Davis Batten
Systems Engineer	Ben Nelson
Architect & Developer	Chris Kelley
Tester & Integrator	Mark Sauber

Project Description

We are proposing a statistics tracking web-app to allow Iowa State administrators (and possibly the public) to visualize, analyze, and engage with key enrollment data. The web-app will create dynamic charts from data found in the Iowa State 2015-2016 Fact Book. These charts will be interactive, allow sorting of data, and let users view the data at differing levels of granularity. The project will utilize technologies such as D3.js, Bootstrap, and JQuery.

Feasibility

As Iowa State University students we have been well educated by our professors in various programming concepts and design patterns. We all have experience working in a group programming projects through either ComS 309 and/or internships. We have all completed projects despite tough deadlines like this project requires.

Because of past experiences as seasoned programmers in professional environments, we feel confident in our time-table and ability to judge productivity. We also have ample examples and literature of the open source technologies we plan to leverage: D3.js, Java Script, Bootstrap, Html. Every team member has developed a web application before, two of which have used D3.js previously. Past experiences and team technical ability lead us to believe that the project we are attempting is in fact quite feasible. The primary difficulty in this project will be allocating our time effectively to hit the competitive deadline.

Value

Iowa State collects data on a huge range of topics and produces dozens, if not hundreds, of publicly available spreadsheets per year. This data can be of tremendous value to administrators, faculty, students, legislators, and the general public. Prospective students might

want to see what the student body of Iowa State is like. The administration and the legislature may want to make sure Iowa State is meeting its diversity goals.

There is, however, a high barrier to accessing this data. It is spread across dozens of pages, making it hard to find the information that a user might wish to find. This web-app will remove that barrier by collecting all of Iowa State's data into one place. Further, by providing users with ways to interact and engage with the data, they will be able to more thoroughly understand the data.

Risks

In the table below we discuss the possible risks, their likelihood, how much it might impact the project, and our mitigation strategy for each risk.

Risk	**Probability of occurrence**	**Criticality (0-100)**	**Risk factor (Prob. Of occurrence x Criticality)**	**Mitigation strategy**
We are unable to meet our project goals before the deadline.	0.1	80	8	We have to scale back the project, and likely lose some functionality.
Our developer catches the flu and is unable to work.	0.1	50	5	We will all become familiar with the codebase so we can take over development easily.
We encounter unforeseen technical issues	0.4	60	24	All of us will be working on becoming familiar with D3.js so we can work together to overcome problems.

Loss of coding base	0.2	70	14	Use git repository as backups.

Table 1. Risks and Mitigation Strategies

Project Measures

The following table outlines some of our goals for the project and lists metrics we will use to measure our success for each goal.

Goal	Questions	Metric(s)
Utilize the data in the Student tab of the ISU Fact Book.	How many of the data sets from the Fact Book did we use?	Number of data sets used
	How many graphs did we make?	Number of graphs
Graphs are interconnected.	How many graphs are connected to another graph?	Number of connections between graphs
Data is able to be sorted.	Are sortable data sets supported?	Yes/No
Web-app is easy to navigate.	Is it easy to find relevant data?	Time it takes a new user to find specific data (hopefully less than a minute).
	Can users find what they are looking for easily?	
Visually appealing.	Is it pretty?	Qualitative analysis
Responsive to resizing.	Did we use Bootstrap properly?	Number of pages that properly resize using Bootstrap.

Table 2. Goals and Metrics

Project Plan

A summary of our plan for completing the project can be found in the following charts.

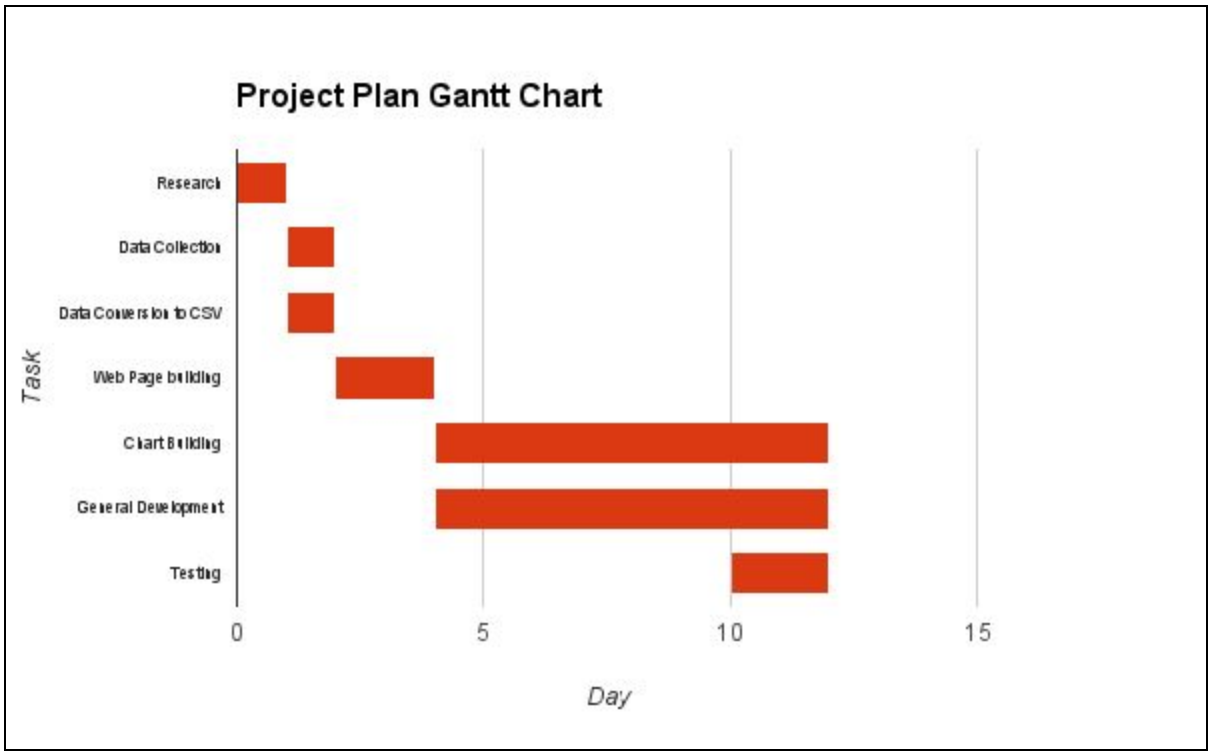

Chart 1. Gantt

Critical Tasks	Start on day	Duration in days
Research	0	1
Data Collection	1	1
Data Conversion to CSV	1	1
Web Page building	2	2
Chart Building	4	8
General Development	4	8
Testing	10	2

Table 3. Project Plan Tasks

Cost

We estimate the cost of the project to include the following:

- Developer pay for 2 weeks ($3360/developer) x4
- Domain name ($20/year)
- Hosting costs ($40/month)
- Discretionary fund ($100)

Total : $14,040 for the first year

Summary

This project aims to provide an easy to use web-app for tracking and visualizing key enrollment data. This data can be viewed by prospective students and administrators. To complete this project we will be using D3.js, Bootstrap, and JQuery. We plan to complete the project in 2 weeks.

The major benefit of this project is being able to view enrollment data in one place in an engaging way. The data can also be viewed at varying levels of granularity.This project is inexpensive so we can offer it to our clients at an affordable price. We could easily extend it out to other Universities. The risks include running out of time, a team member getting sick, unforeseen technical issues, and loss of coding base . We have developed mitigation strategies to address each of these risks. Having developed these strategies, we are confident that we will be able to meet our deadline and complete this project on schedule.