BRAINSTREAM SOFTWARE INC.

CS 350 SOFTWARE ENGINEERING I

FALL 2017 PROJECT

ALI KALKANDELEN

SAMUEL OWUSU-BINEY

STEPHEN KILNISAN

BrainSteam Intelligence Software Co.

In 2018, there will be a mid-term Congressional election for possible control of the House and Senate by the Democrats. Recent history shows that the political parties that have skillfully used big data and big data analysis as their campaigning tools have fared much better than parties that have depended on traditional forms of political campaigning and focus-group type consulting.

By using custom-created proprietary software and algorithms, we can create a template for the most effective messages that can be delivered to your block, city, county, district, state, region and country. Our software can pinpoint those issues that are on the minds and in the hearts of the voters in your area of concern or concentration.

Our system can be tweaked to reflect timely issues that can change exceedingly quickly. It can also easily be scaled to meet the needs of small local campaigns or large national ones. The insights we can glean never become stale or out of date because they are constantly being drawn from real-time data.

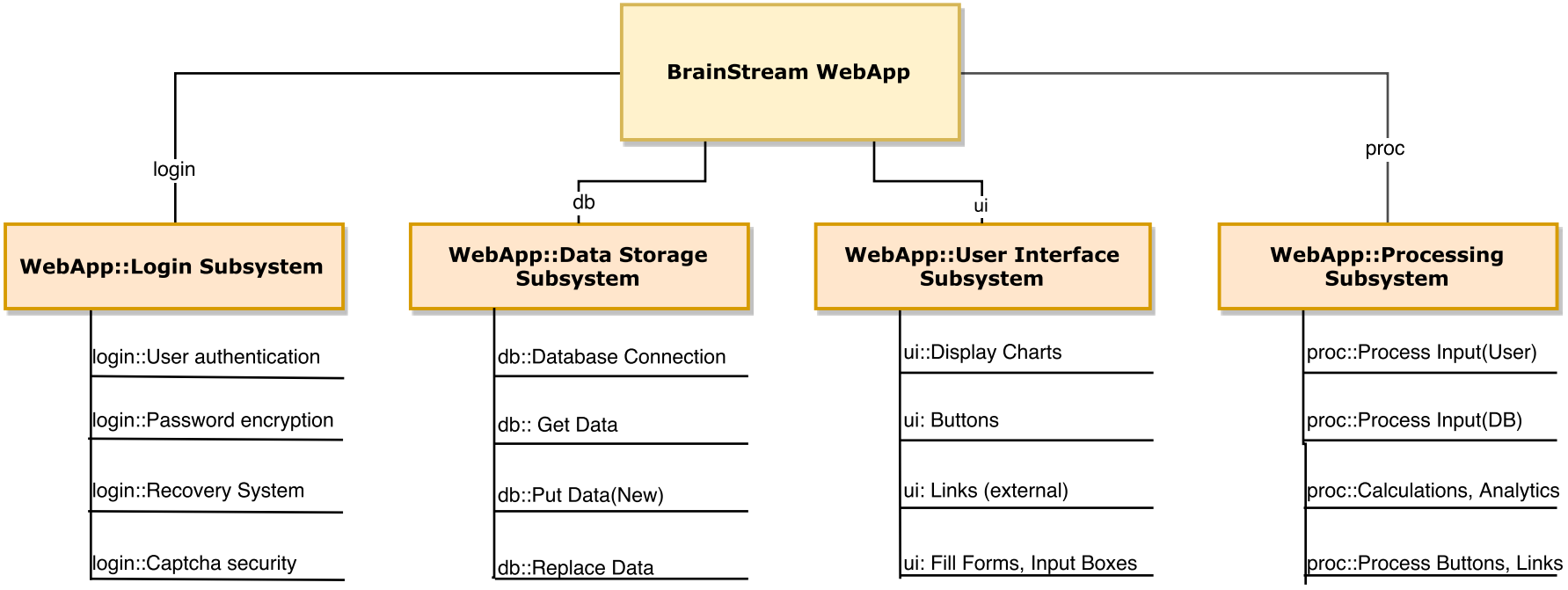
Our product can identify, find and drive your voters to action. Through the real-world knowledge our product provides we can help you create a winning campaign by knowing your electorate better and achieving greater influence while lowering overall costs.

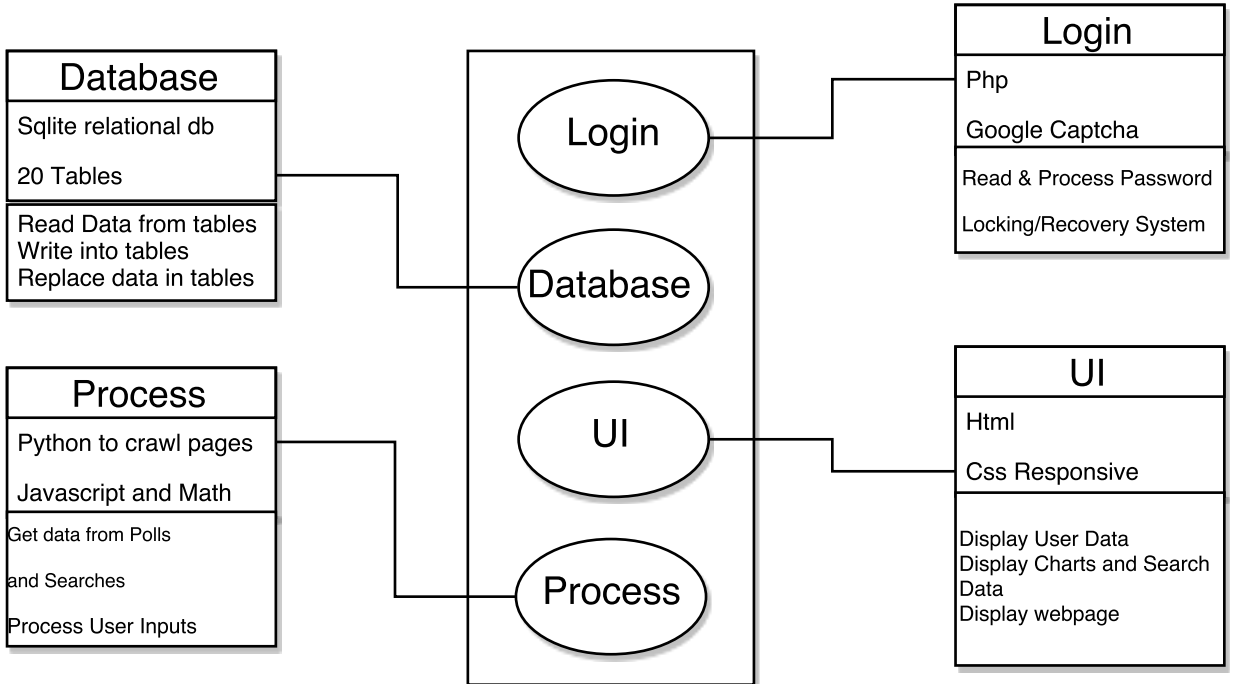
All interpretive tools and documentation are included and further consulting services can be provided at additional fees.

Stake Holders

- **Candidates**
- **Political Party**
- **Campaign Staff**
- **Field Workers**
- **Electorate**

4. IDENTIFY SUBSYSTEMS





6 – Interfaces

User		
Field Name	**Data Type**	**Data Shape**
userID	Int	xxx
LastName	varchar	xxxxxx
FirstName	varchar	xxxxxx
Email	varchar	xxxx@xxx.xxx
typeOfUser	varchar	xxxx
relevantRegion	int	xxx
activeCampaign	int	xxx
Region		
regionID	int	xxx
regionName	varchar	xxxx xxxx
regionAddress	varchar	xxx xxx xxx
regionCity	varchar	xxxxx
regionPostCode	varchar	xxxxx
regionTopSearch	varchar	xxxxx
regionSecondSearch	varchar	xxxxx
regionThirdSeach	varchar	xxxxx
Campaign		
campaignID	int	xxx
campaignName	varchar	XXXX
campaignHead	varchar	xxxx
dateStart	varchar	xx-xx-xxxx
dateEnd	varchar	xx-xx-xxxx
campaignRegion	int	xxx
campaignBudget	Float	xxxx.xxxx
Speeches		
speechID	Int	xxx
speechVoice	audio	mp3
speechVideo	video	avi
speechUser	int	xxx

7 – Functional Requirements

- **The Database**: Store Data such as:
  - User information such as name, address, position
  - Search Histories based on demographic data.
  - Data about current and past campaigns
  - Logs
- **Front-End Framework:**
  - Display the webpages, buttons, forms, etc..
  - Display the Graphics and Reports it receives from back-end.
  - Create functionality for all the intractable UI.
- **Back-End Framework:**
  - Crawl through external webpages, polls, news articles, google searches, databases, etc. to pull out data relevant to the area searched.
  - Make judgements based on all the data received. Use mathematical algorithms to determine hot topics and flashes. Categorize data effectively.
  - Connect to the Database to store and collect data.
- **External Login System**:
  - Handle Username/Password data.
  - Authenticate data entered and show error messages
  - Authenticate Person Position, Authority.
  - Handle changes to members.

8 – Non-Functional Requirements

- **Performance:** Software is Web based. Response time on simple, not data-intensive pages predicted to take 0.5-1 second to load. Pages with lots of information predicted to take 2-5 seconds.
- **Reliability:** System may go down for 15 minutes every week during lowest traffic time every week. Its predicted that another 15 minutes may be spent per 3 months on un-expected failures and bugs. The recovery time is expected to be about an hour.
- **Capacity:** As the system is web-based, it has to be able to handle all incoming network traffic from any and all locations. However, U.S Bureau of Labor Statistics show that an average of 11 to 12 thousand government officials work during a presidential campaign, maxing out at most 20,000. Therefore the systems original size will be 20,000 and will expand to 100,000 with no major modifications.
- **Security:** Accounts will be password locked and passwords will be encrypted in the database. Extra measures of security will include security questions, lockouts from too many attempts, and password change recommendations.
- **Portability:** Webpage will be designed to run on all browsers and operating systems. It will also be able to run on portable devices.

9- Select a Process Model

Pick: Agile-EP

About Agile:

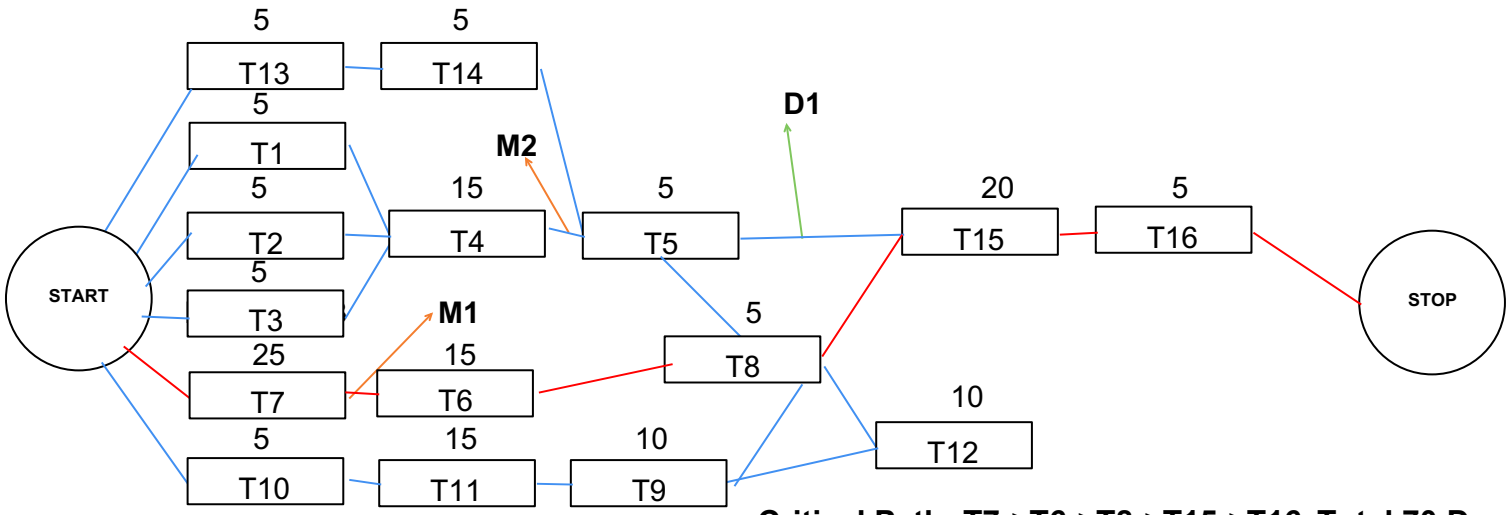
Agile is mostly described as an iterative waterfall model. This is because the software is delivered in iterations as opposed to delivering it as a whole. Software is developed in Sprints that last from 1 week to 4 weeks, and then presented and evaluated with the client before proceeding to the next sprint. This way, the changes or errors in development can be done much earlier, saving alot of money from post-delivery maintenance.

Why choose Agile for Project:

- Made mostly for small groups working in a tight environment on a single project.
- Extreme Programming allows building a software without knowing what the client wants.
- Less prone to errors and bugs after delivery important when time and effort after delivery is not possible.

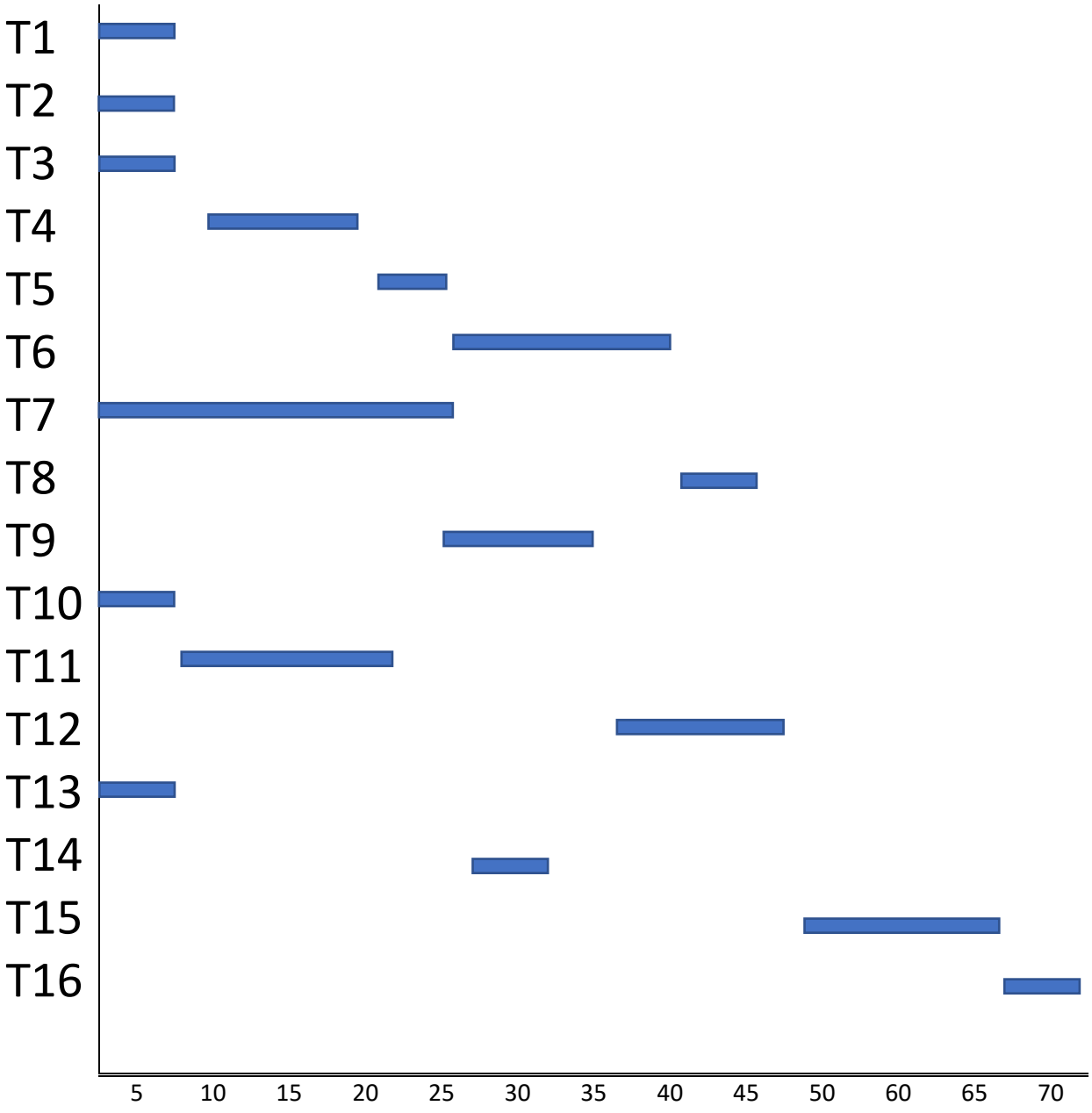
11 & 13 - ACTIVITY CHART, MILESTONES, DELIVERABLES, CRITICAL PATH

Task	Description	Duration (days)	Dependencies
T1	Create Tables for User Data	5	
T2	Create Tables for Campaign Data	5	
T3	Create Tables for search data	5	
T4	Setup Table Relationships	15	T1,T2,T3
T5	Setup Database Connection	5	T4
T6	Code Script to Crawl for Data	15	T7
T7	Create Algorithm to process crawled data	25	
T8	Process algorithm on data and setup organization of data in db	5	T5,T6,T7
T9	Code script to process user input on webpage	10	T11
T10	Design the webpage outlook	5	
T11	Code the pages according to design	15	T10
T12	Code out display of reports and charts and figures from retrieved data	10	T8,T9
T13	Setup connection with 3rd Parties	5	
T14	Code authentication of user using 3rd party softwares	5	T13, T5
T15	Create Settings Framework(Back-End)	20	T5,T8,T9,T14
T16	Code Encryption, Analytics, and maintenance code	5	T5,T9



Critical Path: T7->T6->T8->T15->T16. Total 70 Days

10 – BAR CHART


T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
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T15
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