



ZocialSight

Project Proposal

By

Mr. Kitsada Tangpoolponsavatdi 582115003

Mr. Cheulong Sear 582115507

Department of Software Engineering

College of Arts, Media and Technology

Chiang Mai University

เพื่อนๆ ครับรบกวนดูเป็นแนวทางได้แต่ อย่าลอก! นะครับผม
ตอนส่งไปจะมีการทราบนะครับผม

Project Advisor

Dr. Prompong Sugunnasil

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*KT = Mr.Kitsada Tangpoolponsavatdi

*CS = Mr. Cheulong Sear

*PS = Dr. Prompong Sugunnasil

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Abstract

Nowadays, the social media monitoring becomes very important in the business. For example, there are 65 million tweets on Twitter, 500 million active Facebook users and over 3 billion Google search each day ^[4]. The objectives of social media monitoring are to make the business gaining more insights to improve brand awareness and brand dialogue and improving the effectiveness of marketing campaigns. Therefore, the social network monitoring helps enterprises getting access to customers' opinion and feeling about their products or services. The traditional social media monitoring requires human to constantly check information and analysis. It is a time-consuming process and a waste of resource. Despite various drawbacks, it is an important process and activity to perform. For the brand, gaining more attention from large audiences provide them a better user experience than competitors.

ZocialSight is a social media monitoring software that helps the enterprise to be able to set the well-defined business goal by understanding the customer and their trend. ZocialSight contains many features that already existed and also unique features there are not in other tools.

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Chapter I |Rationale

Every year the massive grown number of consumers using social media, enterprises cannot ignore getting the benefit of their business from these powerful networks. People are using these communication platforms to express their feeling, complaints and also giving the opinion about products and services or even compare them to products from other places. According to recent reviews statistics on social commerce stats that there are 65 million tweets 500 million active Facebook users and over 3 billion Google search each day. In 2018, the revenue in the Thailand e-Commerce market is US\$3,544m and is expected to grow 13.2% annually. Due to the bombing of social media sites, the market can have the ability to communicate with the consumers and also have a large audience ^[1]. In this respect, Forrester Research forecasts that, in terms of spending, social media marketing will reach an annual growth rate of 34%, out matching all other forms of online marketing ^[2]

Enterprise uses the traditional and nontraditional methods to get opinions from customers. In recent years, the traditional method for collecting data from the customer are facing difficulty due to the decreased use of traditional communication channel include television, radio, newspaper ^[3]. Moreover, the result of using free online sources of information to further analyze for use in the relative goal of traditional survey research is advantageous in recent year.

Social media monitoring tools have combined the client listening methods, as well as setting business campaign plan's goal by getting the reliable information from available online in the form of user-generated content. These tools offer the system for listening to social media users, analyze their activity in relating to the brand or enterprise. The process that can provide the valuable enterprise information regarding strategy they should use, also follow how customer view their product and their service to find the right solution, what the enterprise expect in the future. The benefit of social media monitoring is that it provides access to real customers' opinions, and question, at real time in a scalable way. Another advantage using social media monitoring is it can tell the trendy topic, which is higher than a traditional approach. The social media monitoring only requires access to the online post or comment by customers. So the information that enterprises get is up-to-date, faster and more economical.

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As today, there is a significant amount of social media monitoring available, and enterprises have to consider which one is better than another. However, the useful features are lacking or are not place in the same tools. To solve the lack of useful features in an individual tool, a new and optimized social media monitoring tool could help the enterprises to be able to access the useful and new features in the same tools conveniently and effectively. The new tools will let enterprise to know the top trend topic, set campaign goal. It will alert when there is any question, negative opinion about product or services of the enterprise, so The enterprise can offer the best experience to customers.

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Chapter II|Literature Review

2.1 Traditional System Review

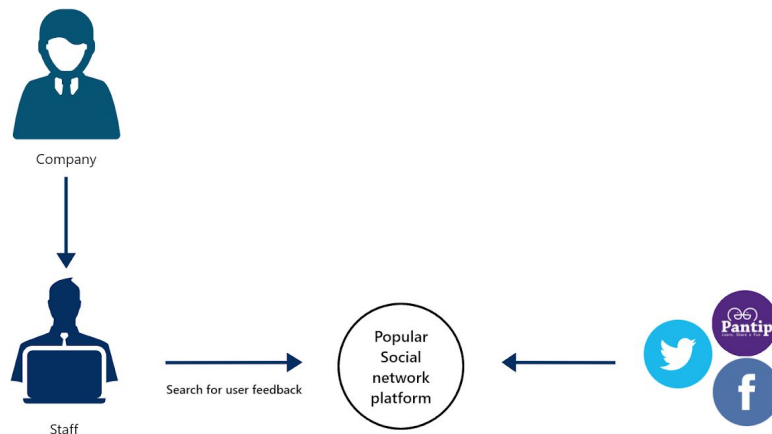


Figure 01: Traditional System Review

In figure 01, When the company wants to know about the opinions of customers. The company requires staffs to track the activity related to their product across popular social media platforms. Then, Staffs will analyze the information that they get and summarize it in the report. Next, Staffs will send the report to the product owner. Finally, the product owner will use the report to find the solution to their product problems.

The problem is it require a lot of money to hire the staffs and may take much effort to collect the result and summarize into the report. Furthermore, the important information might not be cover because of human-error. This will affect the customer experience about the brand because the company may not find the right solution. Therefore, the improper traditional working system may reduce working efficiency , waste of time and resource, decrease customer relationship management to the brand, and later will lead to inaccuracy solution.

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2.2 Business Tools and Software Review

OBVOC

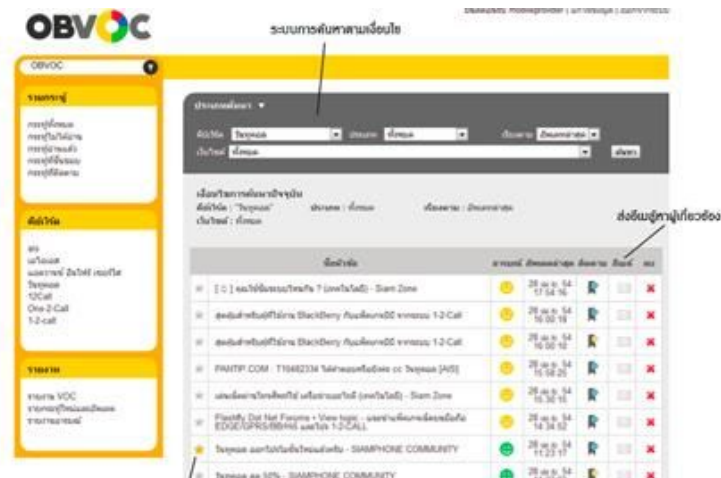


Figure 02: OBVOC application

Software Detail:

OBVOC is social monitoring software. OBVOC let product owner understand the customer opinion and comment on the product by collect the top social media in Thailand and use machine learning to analyze the result. Moreover, OBVOC allow the

Product Owner to customize and generate the report to see the overall situation of the product.

Advantage:

- Product Owner can watch Social monitoring across popular social media platform.
- Product Owner can know what people opinions about the product by using Sentiment Analysis.
- Product Owner can real-time response negative comment by using Crisis Monitoring.
- Product Owner can set the campaign goal.
- Product Owner can measure the campaign with the previous information.
- Product Owner can generate the real-time report.

Disadvantage:

- Product Owner cannot customize real-time dashboard by themselves.

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Zanroo



Figure 03: Zanroo application

Software Detail

Zanroo is one of social media monitoring system. Zanroo provides many useful features that help to analyze the brand quality, for example, The product owner can watch the status of the brand over social media and use machine learning to analyze and predict what customer opinion about the brand. Also, When they are the negative comment to the product Zanroo will report the product owner automatically also Zanroo let the product owner to fast and direct contract to the customer via facebook and email.

Advantages




- Product Owner can watch Social monitoring across popular social media platform.
- Product Owner can know what people opinions about the product by using Sentiment Analysis.
- Product Owner can real-time response negative comment by using Crisis Monitoring.
- Product Owner can contact to the customer directly in application.
- Product Owner can see top product's trend by using Product trend analysis

Disadvantages




- Product Owner cannot customize real-time dashboard with themselves.
- Product Owner cannot generate the real time report.
- Product Owner cannot measure the campaign with the past records.

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2.3 Technology Review




Name	Description	Alternatives	Choice of Selection
<p>Python</p>  <p>Figure 04: Python Logo</p>	<p>Python is a high programming language that designed to be readable, syntax similar to the human languages, and easy to implement. ^[5]</p>	<ul style="list-style-type: none"> • R Programming language • MATLAB 	<ul style="list-style-type: none"> • Readable Syntax • Has Many useful libraries for data science Such as numpy, Scikit.
<p>Angular 5</p>  <p>Figure 05: Angular 5 Logo</p>	<p>Angular 5 is an open source web development framework by using MVC concept for more readable and easy to maintain. Angular was maintained by Google team. ^[6]</p>	<ul style="list-style-type: none"> • React js • Vue js 	<ul style="list-style-type: none"> • Easy to read and maintain the code because Angular 5 separate the file into Model, View, Controller class. • A Large community of users.
<p>PostgreSQL</p>  <p>Figure 06: PostgreSQL Logo</p>	<p>PostgreSQL is an open source software. PostgreSQL is the relational database which supports and provide a convenient tool for managing variety type of data. ^[7]</p>	<ul style="list-style-type: none"> • MySQL • MariaDB 	<ul style="list-style-type: none"> • Open Source • Many useful features and tools for manage database such as GUI for managing database,support SQL queries. • Allow multiple transaction query. • Flexible Full-text search.

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<p>HTML5</p>  <p>Figure 07: HTML5 Logo</p>	<p>HTML5 is the latest standard for HTML. HTML5 used for constructing and presenting the content of the World Wide Web.^[8]</p>	<ul style="list-style-type: none"> • XHTML 2.0 	<ul style="list-style-type: none"> • HTML5 is popular among front-end developer to develop the content of a website. • The newest version • Can work with CSS to improve the element and style.
<p>CSS3</p>  <p>Figure 08: CSS3 Logo</p>	<p>CSS3 is the latest standard for CSS. It describes how an HTML element is displayed on the website. CSS3 provides many useful functions to design and arrange the element of the website for example padding, margin, color, flexbox.^[9]</p>	<ul style="list-style-type: none"> • Document Style Semantics and Specification Language (DSSSL) • Extensible Stylesheet Language (XSL) 	<ul style="list-style-type: none"> • Style the web content fast and simple.
<p>JSON</p>  <p>Figure 09: JSON Logo</p>	<p>JSON has widely used for interchange or transmits the data between web service application and server. JSON provides a better way for the developer by using an understandable and readable language to support many alternative developers^[10]</p>	<ul style="list-style-type: none"> • XML 	<ul style="list-style-type: none"> • Python can store JSON object in the database. • JSON provides a simple way to sending and receiving the information across server.

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2.4 Development Tool Review

Name	Description	Alternatives	Choice of Selection
PyCharm  Figure 10: PyCharm Logo	PyCharm is an integrated development environment which developed for Python programming language. PyCharm was developed by JetBrains company. There is two version of PyCharm which are Community edition and Ultimate edition. ^[11]	<ul style="list-style-type: none"> • Jupyter Notebook • Spyder • CMD 	<ul style="list-style-type: none"> • Fast and simple when compared to other alternative tools. • error suggestion • library integrate
IntelliJ  Figure 11: IntelliJ Logo	IntelliJ is an integrated development environment for Java programming language. IntelliJ was developed by JetBrains company. There is two version of IntelliJ which are Community edition and Ultimate edition. ^[12]	<ul style="list-style-type: none"> • Eclipse 	<ul style="list-style-type: none"> • Fully Support HTML5 and Angular 5 syntax. • Has many useful plugins such as tslint. • Error Suggestion
pgAdmin3  Figure 12: pgAdmin3 Logo	pgAdmin 3 is a graphical user interface for PostgreSQL database. pgAdmin3 integrates Many SQL development tools such as administration tool, database design, backup. pgAdmin3 Workbench currently supports Windows, Mac OS X, and Linux. ^[13]	<ul style="list-style-type: none"> • DataGrip 	<ul style="list-style-type: none"> • pgAdmin3 has a solid and beautiful user interface. • Simple and easy to use. • Support PostgreSQL

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Postman



POSTMAN

Figure 13: Postman Logo

Postman is the tool that helps to test the API server. By sending the request method such as GET, PUT, POST, DELETE to the server and see the result.^[14]

- Paw

- Open source
- Support GET/PUT/POST/DELETE method to python restful server.

Katalon



Katalon

Intelligent Test Automation

Figure 14: Katalon Studio Logo

Katalon Studio is an automation testing tool for the web application, mobile application. Katalon was developed KMS team. Katalon currently becomes popular among developer and tester since it easy to use and many features to test variety type of device.^[15]

- Selenium

- Compatible to use with HTML5.

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Chapter III| Quality Standard

3.1 ISO 29110 for Very Small Entity (VSE)

ISO 29110 is the Software Life Cycle Profiles and Guidelines for Very Small Entities (VSEs) standards and technical reports are targeted at Very Small Entities (VSEs). A Very Small Entity (VSE) is an enterprise, organization, department or project having up to 25 people. ISO 29110 concerns on project management process and software implementation process.

3.1.1 Project Management process

The purpose of the Project Management process is to establish and carry out in a systematic way the tasks of the software implementation project, which allows complying with the project's objectives in the expected quality, time and cost. There are 4 activities as following:

1. Project Planning Process
2. Project Plan Execution Process
3. Project Assessment and Control Process
4. Project Closure Process

3.1.2 Software Implementation process

The purpose of the Software Implementation process is the systematic performance of the analysis, design, construction, integration and tests activities for new or modified software products according to the specified requirements. There are 6 activities as following:

1. Software Implementation Initiation Process
2. Software Requirements Analysis Process
3. Software Architectural and Detailed Design Process
4. Software Construction Process
5. Software Integration and Test Process
6. Software Delivery Process

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Chapter IV| Project Plan

4.1 Motivation

Many enterprises hiring many people to monitor social media, so they spend a lot of money and time. We think that there should be a solution to track social media by using ZocialSight to follow posts, comments and shares, then analysis the data to find the satisfied rate of customers to the brand.

4.2 Aims and Objectives

4.2.1 Aims

The social media monitoring system aims to help enterprises that want to know to track the discussion and trend relate to their product and company on the social media. The traditional social media monitoring tool can be used to follow the trend and customers' opinion, but it is slow and can cover only on the small part about the topic. The system can show alert in real time when there is any criticized opinion about the brand. Moreover, the system can show the number of data such as posts, likes and shares on the line graph in real time.

4.2.2 Objectives

The objective of this project is to develop a web application by following ISO 29110 standard. The web application contain the following features:

- User management
- Social media monitoring (Pantip, facebook, twitter)
- Sentiment Analysis
- Customize dashboard
- Campaign measurement
- Report generation system
- Team management

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4.3 Software architecture

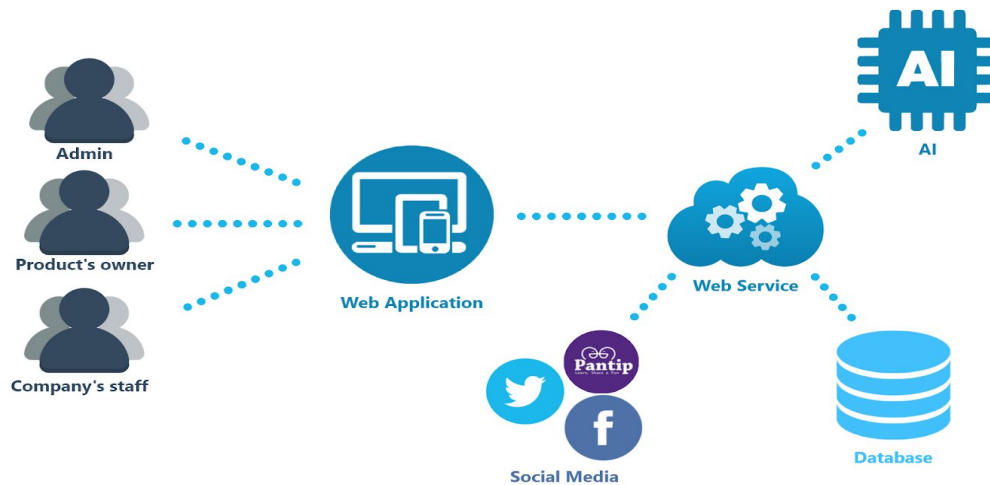


Figure 15: Software Architecture of ZocialSight system

From figure 15 there are 3 types of user in ZocialSight System. First, Company staff who can user register to use the system by using username and password. Then, the web application will send the register request to the Web Service. After that it will be save as the transaction record in the database. When user login to the system, the web service will gather the collection of text from popular social medias then save the result into the database. After that, Artificial Intelligent System(AI) will retrieve the collection of text from the database then analyze it by using the sentiment analysis. Finally, the analyzed information will be exported by the web service, then display to the user via the web application.

Second, the product's owner who can login to use the system by using username and password. When product owner login to the system, the web application shall display the tasks management page. The product owner can adjust a task to each stakeholder in the team by input the name of the task and choose the stakeholder into the web application interface and later will be saved into the database. Moreover, the product owner can view the progress of work that real-time updating by each stakeholder by clicking on the stakeholder name. Later, the web application will load the information from the database and display to product owner.

Third, the admin who can login to use the system by using username and password. When admin login to the system, the web application shall display the general information of users in the system. Admin is allowed to add, edit, update and delete users' information.

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4.4 Mock up

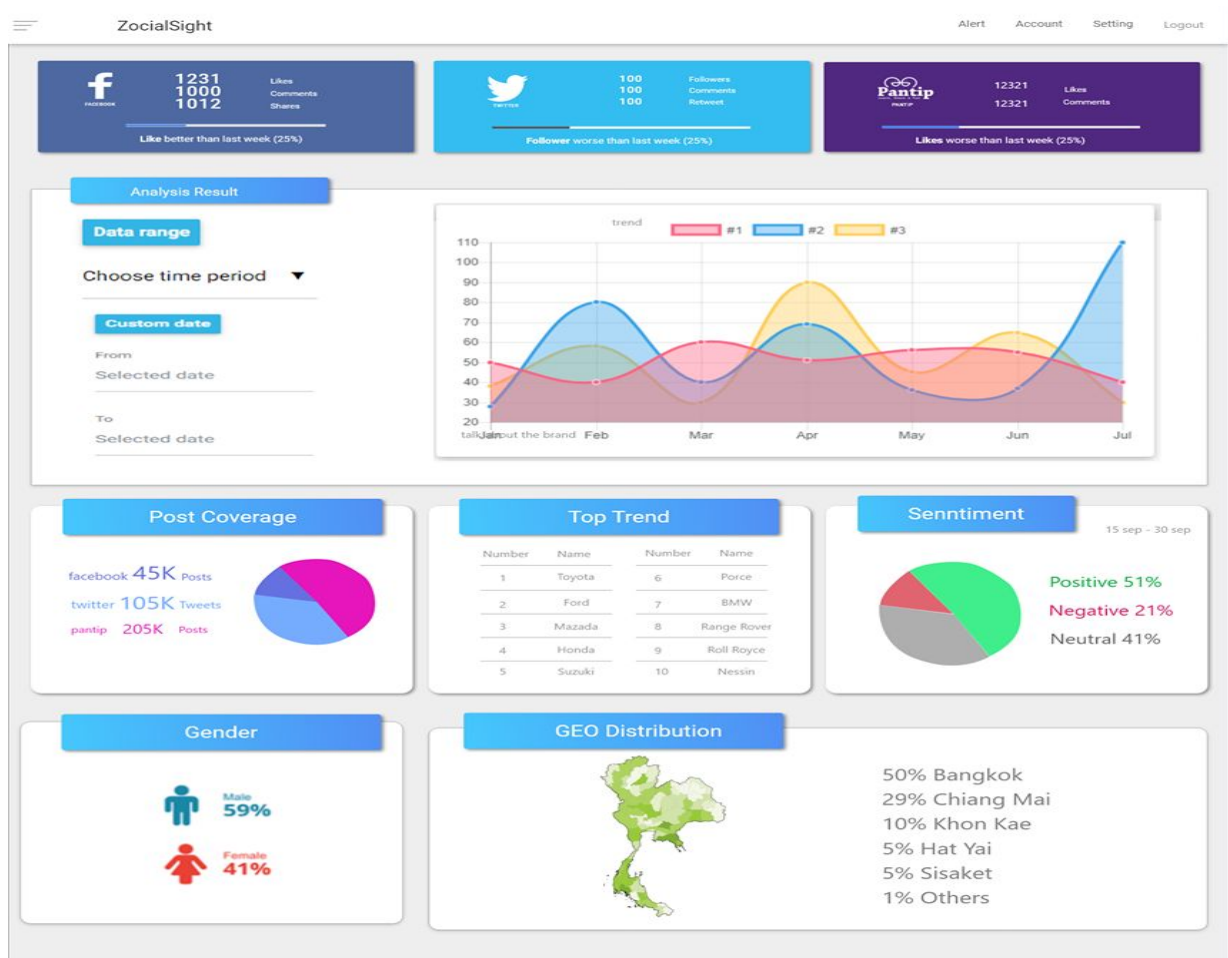


Figure 16: Dashboard of Zocial Sight System

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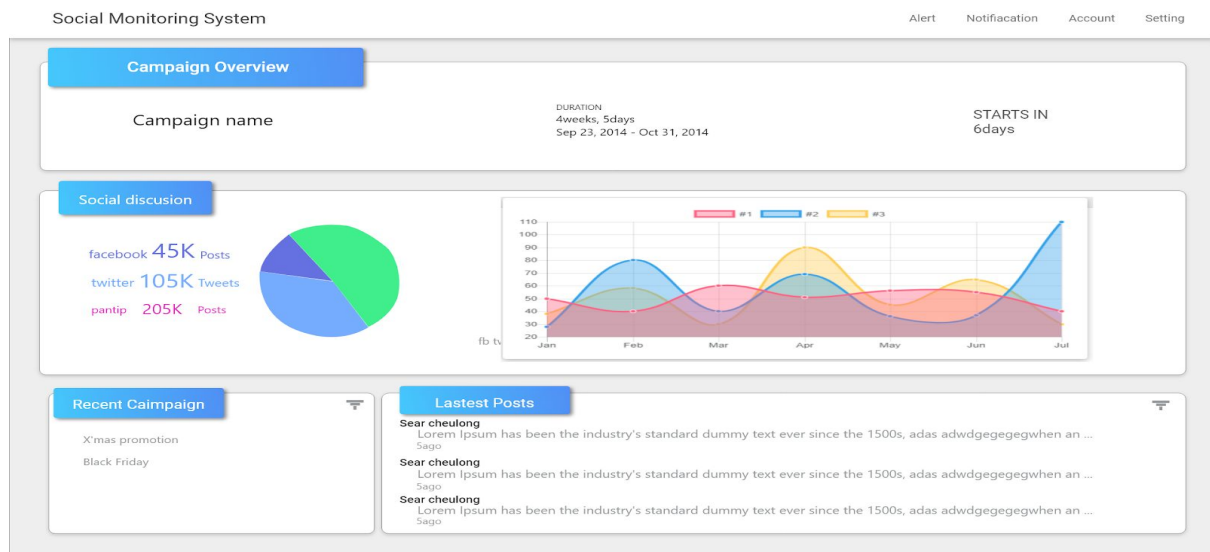


Figure 17: Additional Dashboard of ZocialSight System



Figure 18: Campaign Measurement of ZocialSight System

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4.5 Deliverables and Limits

4.5.1 Deliverable

Feature #1: Authentication

Description : This feature is used for preventing unauthorized user to access some features in the system by providing the text field to input username and password. When the user clicks “login” button the system will check with the database whether username and password are valid. Finally, the system will give the authority to the user. Moreover, in case that user forget he/she password, they will be able to recover their password by click “forget password” button and input the email and username into the text field, and system shall validate the input and send the new password to user’s email address.

Users: Company’s staff, Product Owner

- 1.1 Company’s staff can login by providing username and password.
- 1.2 Company’s staff can logout from the system.
- 1.3 Company’s staff can reset the password in case of they forget the password.
- 1.4 Product owner can login by providing username and password.
- 1.5 Product owner can logout from the system.
- 1.6 Product owner can reset the password in case of they forget the password by input the username and email.

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Feature #2: User management

Description: This feature is for the administrator which used to manage the users' account in the system. Administrator will be able to add a new user into the system by input name, surname, email, phone number, address, username, password, facebook page link, twitter page link and pantip keyword and select the role of the user. Furthermore, Administrator have an authority to delete, edit and search for the user's name.

Users: Administrator

- 2.1 Administrator can add a new company's staff into the system by input name,surname,email,phone number,address,username,password,facebook page link,twitter page link ,pantip keyword and select user role .
- 2.2 Administrator can delete company's staff member from system.
- 2.3 Administrator can edit company's staff information in the system.
- 2.4 Administrator can add a new product's owner into the system
- 2.5 Administrator can delete product owner member from system.
- 2.6 Administrator can edit product owner information in the system.
- 2.7 Administrator can search company's staff by input company's staff's name.
- 2.8 Administrator can search product owner by input product owner's name.

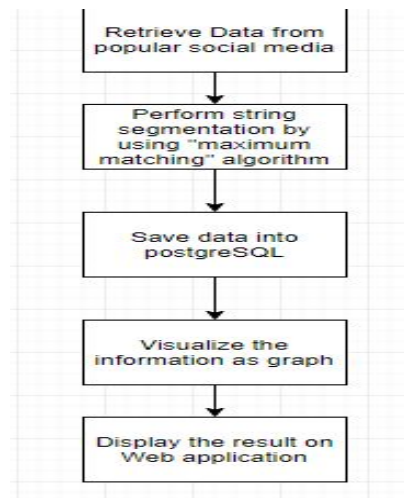
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Feature #3: Social Media Monitoring

Description: This feature is for monitor and collect information such as topic title, comment, tweet, and user emotional reaction from facebook, twitter and pantip by accessing to website via platform API.

Users: Company's Staff

Diagram:



- 3.1 Company's Staff can view the real-time line graph show number of topic from customer that related to product's keyword from pantip.
- 3.2 Company's Staff can view the real-time line graph show number of post from customer that related to product's keyword from facebook.
- 3.3 Company's Staff can view the real-time line graph show number of tweet from customer that related to product's keyword from twitter.
- 3.4 Company's Staff can view the real-time line graph show number of comment from customer that related to product's keyword from facebook.
- 3.5 Company's Staff can view the real-time line graph show number of 'like', 'dislike' related to product's keyword from facebook
- 3.6 Company's Staff can view the real-time line graph show number of share related to product's keyword from facebook
- 3.7 Company's Staff can view line graph show number of topic from customer that related to product's keyword from pantip facebook for last seven days and one month.
- 3.8 Company's Staff can view line graph show number of post from customer that related to product's keyword from facebook for last seven days and one month.
- 3.9 Company's Staff can view line graph show number of tweet from customer that related to product's keyword from twitter for last seven days and one month.
- 3.10 Company's Staff can view line graph show number of comment from customer that related to product's keyword for last seven days and one month.

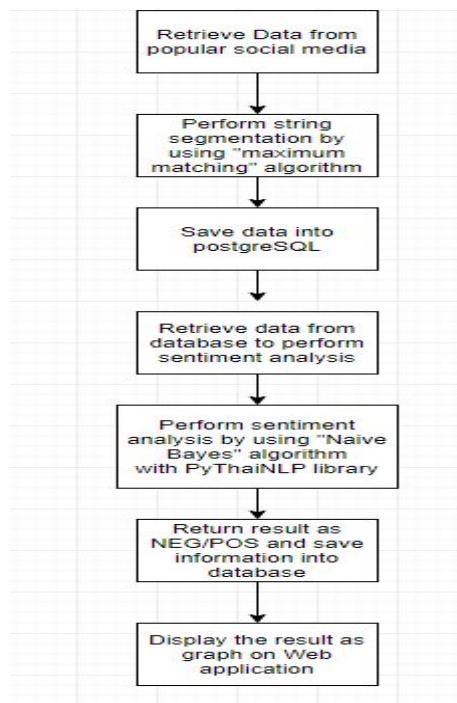
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- 3.11 Company's Staff can view line graph show number of 'like', 'dislike' related to product's keyword from facebook for last seven days and one month.
- 3.12 Company's Staff can view line graph show number of share related to product's keyword from facebook for last seven days and one month.
- 3.13 Company's Staff can view percentage number of gender from user's public information.
- 3.14 Company's Staff can view percentage number of geo-location from user's public information.

Feature #4: Sentiment Analysis

Description: This feature is used to perform users' emotional analysis. To performing sentiment analysis, it required input factor as information which including comment post title, review texts, and emotional reaction from the user from popular social media platform and use a maximum matching algorithm to perform word segmentation and do sentiment analysis. The algorithm that will be used to process a sentiment analysis is Naive Bayes with the PyThaiNLP library to measure each sentence is NEG/POS.

Diagram:



Users: Company's Staff

- 4.1 Company's staff can enable real time alert to let the system notificcate the user when there are negative opinion related to product's keyword.
- 4.2 Company's staff can view the number of positive and negative comments related to product's keyword.

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- 4.3 Company's staff can view list of negative comment related to product's keyword.
- 4.4 Company's staff can view list of positive comment related to product's keyword.
- 4.5 Company's staff can view top trends keyword from negative comments related to product's keyword.
- 4.6 Company's staff can view top trends keyword from positive comment that related to product's keyword.
- 4.7 Company's staff can view percentage number between positive comment and negative comment.

Feature #5: Dashboard Customization

Description: This feature is used for allowing company's staff to customize the graph on the dashboard page to show different types of information. Company's staff can delete and add the elements to the graph they want to show in the X axis and Y axis.

Users: Company's Staff

- 5.1 Company's staff can customize the real-time graph to display between number of like as Y axis and time period as X axis.
- 5.2 Company's staff can customize the real-time graph to display between number of comment as Y axis and time period as X axis.
- 5.3 Company's staff can customize the real-time graph to display between number of share as Y axis and time period as X axis.
- 5.4 Company's staff can customize the real-time graph to display between number of gender as Y axis and time period as X axis.

Feature #6 Campaign Measurement

Description: This feature is used for setting the goal of the campaign by providing general information on the campaign. Like, share, and comment is criteria that used measure the successful of the campaign. This feature will show the progress bar to allow company's staff to track the progress between the actual result and expected result. Moreover, the list of comment that related to the campaign keyword will also be displayed to the web application.

Users: Company's staff

- 6.1 Company's staff can set the campaign goal by providing campaign name, campaign description, start date, end date, expected like, expected love, expected share.
- 6.2 Company's staff can view the progress bar of actual like and expect like.
- 6.3 Company's staff can view the progress bar of actual share and expect share.
- 6.4 Company's staff can view the progress bar of actual love and expect love.
- 6.5 Company's staff can view the progress bar of actual angry and expect angry .

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- 6.6 Company's staff can view a number of like related to the keyword of the campaign.
- 6.7 Company's staff can view a number of angry related to the keyword of the campaign.
- 6.8 Company's staff can view a number of share related to the keyword of the campaign.
- 6.9 Company's staff can view a number of comment related to the keyword of the campaign.
- 6.10 Company's staff can view a list of comment that related to the keyword of the campaign.

Feature #7: Report Generation

Description: This feature is used for allowing the company's staffs to make the report of result from analysing. Staffs of company will be able to customize report by choosing the element, they want to include in the report such as number of like, share, comment, specific date and unit type.

Users: Company's staff

- 7.1 Company's staff can view the report from specific period.
- 7.2 Company's staff can put list of all comment and date of published into the report.
- 7.3 Company's staff can put number of likes, dislike, angry, and sad into the report.
- 7.4 Company's staff can put list of positive comment and date of published into the report.
- 7.5 Company's staff can put list of negative comment and date of published into the report.
- 7.6 Company's staff can put list of tweet that related to the product's keyword and date of published into the report.
- 7.7 Company's staff can put percentage number of geo-location into the report.
- 7.8 Company's staff can put percentage number of gender into the report.

Feature #8: Team Management

Description: This feature used for managing the projects. The product owner can provide the tasks to company's staff. Company's staff can manage their process of work by after their finish the assigned task they can change the state of a task from doing to done.

Users: Product Owner, Company's staff

- 8.1 Product Owner can add company's staff into the team project
- 8.2 Product Owner can remove company's staff from team project.
- 8.3 Product Owner can assign tasks to company's staff.
- 8.4 Product Owner can put the comment into the announcement board.
- 8.5 Company's staff can change the state of task from doing to done.

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4.5.2 Documents and other material

- Proposal
- Project plan
- Quality plan
- Software requirement specification
- Traceability record
- Software design document
- Testing document
- Test plan
- Unit test report
- System Test report
- Video clips for demo program
- Poster A1 for presentation

4.5.3 Limits

- Internet connection is required for using this system.
- Cannot retrieve the comment from facebook over than 2,000 transactions for each runtime due to facebook's API limitation.
- Cannot retrieve the post from facebook over than 2,000 transaction for each runtime due to facebook's API limitation.
- Cannot retrieve the tweet data from Twitter over than 200 transaction for each runtime due to twitter's API limitation.
- Limitation of retrieve the data from facebook' group.
- Python 3.6 is required to operate the system.
- Work well on "Google Chrome" web browser.
- In this period, facebook token can be valid only one hour. But when the application is deployed, we will request a long-life token from facebook.
- Support only English language.

4.5.4 Future Work

In the future, we would like to develop our word analysis system by adding more support languages into the program which are English and Chinese.

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4.6 Schedule and Milestone

4.6.1 Software Process

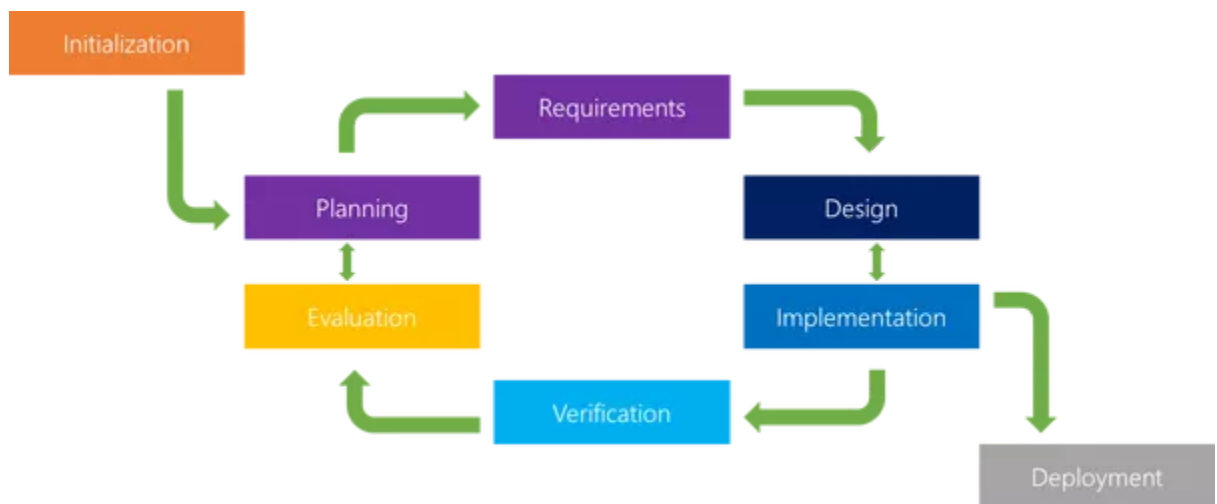


Figure 17: Iterative Model

The iterative model is an implementation of software development life cycle (SDLC) that focuses on an initial, simplified implementation, then progressively gains more complexity and features set until the final system is complete. The iterative model divides the development process into 5 phases, planning, and requirement, analysis, and design, implementation, testing, evaluation.

The first step in the iterative model is to develop a prototype. A focus group or a group not associated with the product should evaluate the prototype to deliver opinions. The software should include in the Information from the feedback into the next iteration. The process should repeat until it can reduce user issues to meet an acceptable level.

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4.6.2 Project Schedule

The schedule and milestones of the working. During the period, there are work terminologies, and the description is shown below that:

Milestone	Task	Milestone Criteria	Planned date
1	Proposal	Topic defined	March, 23 th 2018
2	Proposal	-Proposal reviewed -Proposal submitted -Proposal presentation	April, 8 th 2018
3	Check up 1	-Software requirement specification -Feature#3 (Social Monitoring) -Feature#5 (Dashboard Customization) -Feature Design -Test plan -Feature implement -Feature test -Progress report submit -Progress report presentation	April, 20 th 2018
4	Check up 2	-Software requirement specification -Feature#4 (Sentiment Analysis) -Feature#7 (Report Generation) -Feature Design -Test plan -Feature implement -Feature test -Progress report submit -Progress report presentation	June, 29 th 2018
5	Progress 1	-Software requirement specification -Feature#1 (Authentication) -Feature#6 (Campaign Measurement) -Feature Design -Test plan -Feature implement -Feature test -Progress report submit -Progress report presentation	July, 20 th 2018
6	Final Progress	-Software requirement specification -Feature#2 (User Management)	August, 18 th 2018

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		-Feature#8 (Team Management) -Feature Design -Test plan -Feature implement -Feature test -Progress report submit -Progress report presentation	
7	Show Pro	Review -Feature#1 (Authentication) -Feature#2 (User Management) -Feature#3 (Social Monitoring) -Feature#4 (Sentiment Analysis) -Feature#5 (Dashboard Customization) -Feature#6 (Campaign Measurement) -Feature#7 (Report Generation) -Feature#8 (Team Management)	September, 14 th 2018

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4.6.3 Milestone

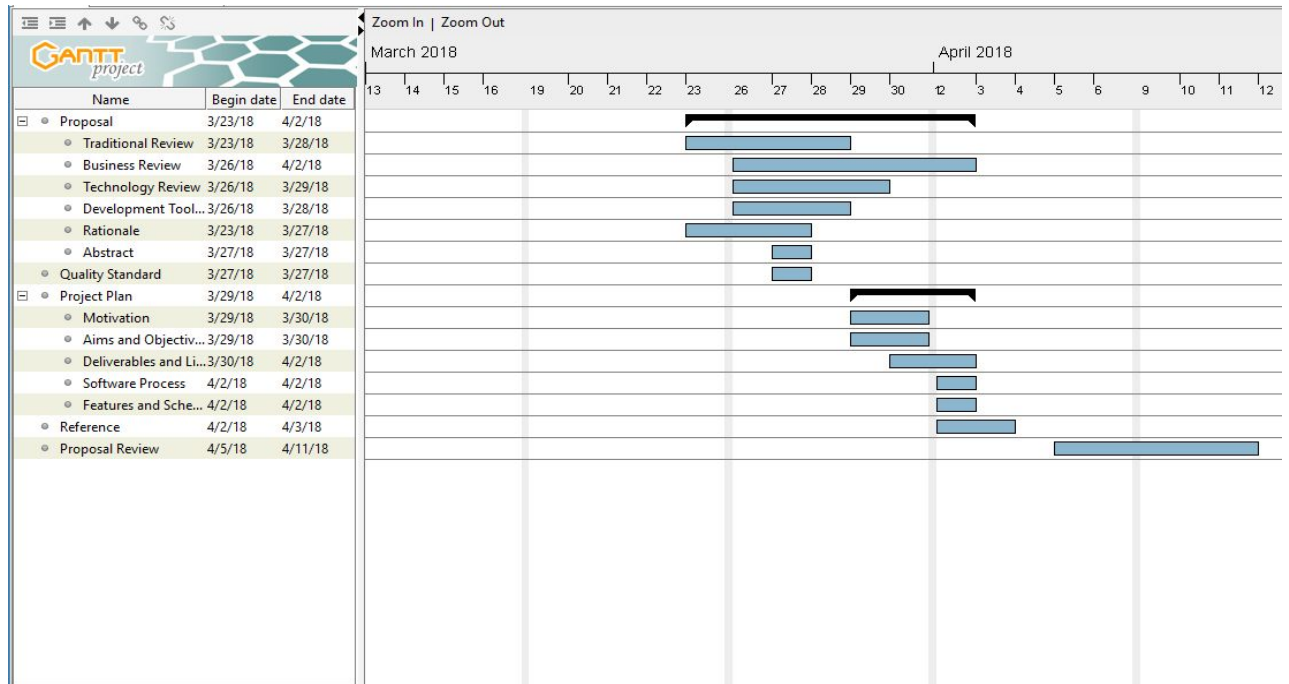
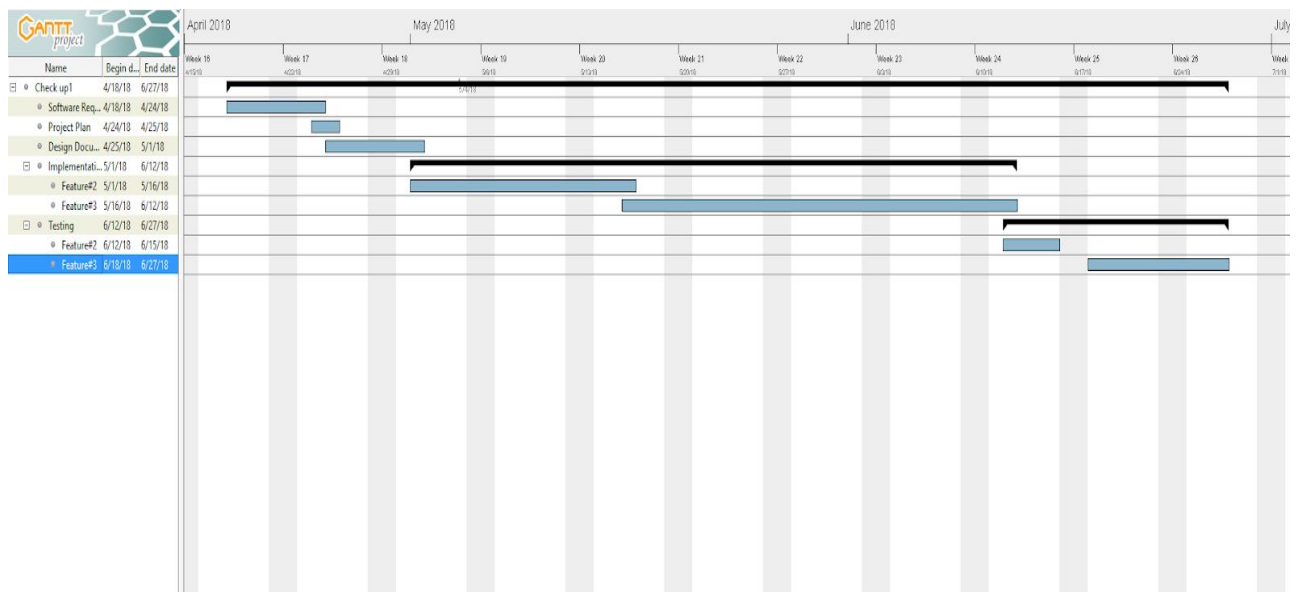


Figure 18: Proposal period milestone



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Figure 19: Check up 1 period milestone

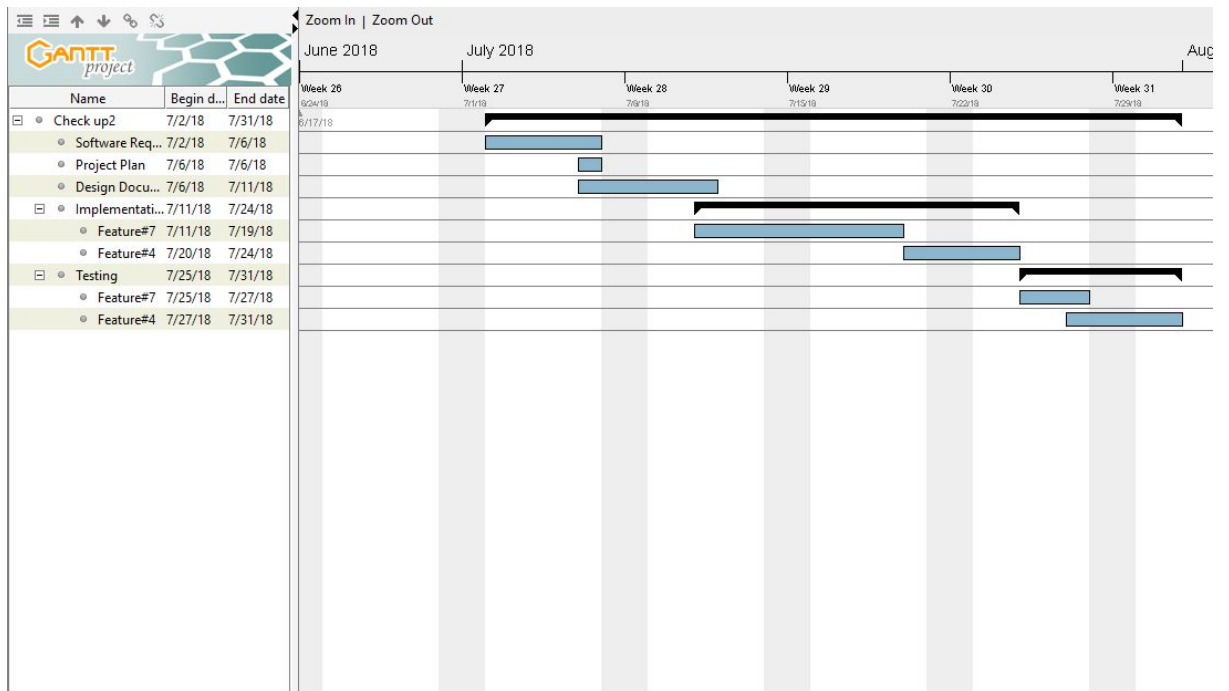


Figure 20: Check up 2 Period milestone

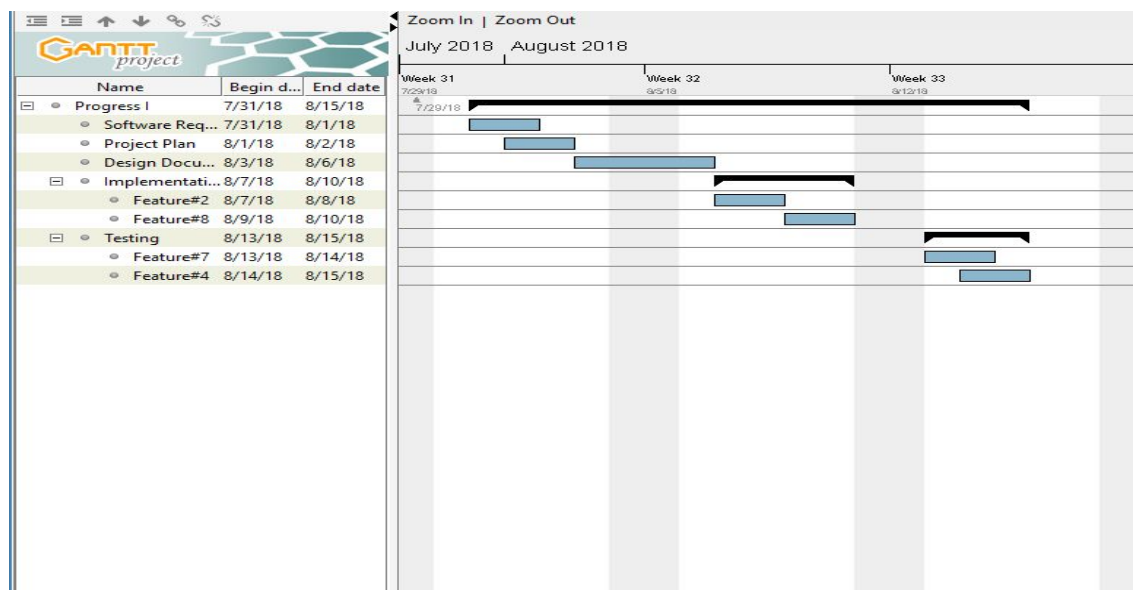


Figure 21: Progress 1 Period milestone

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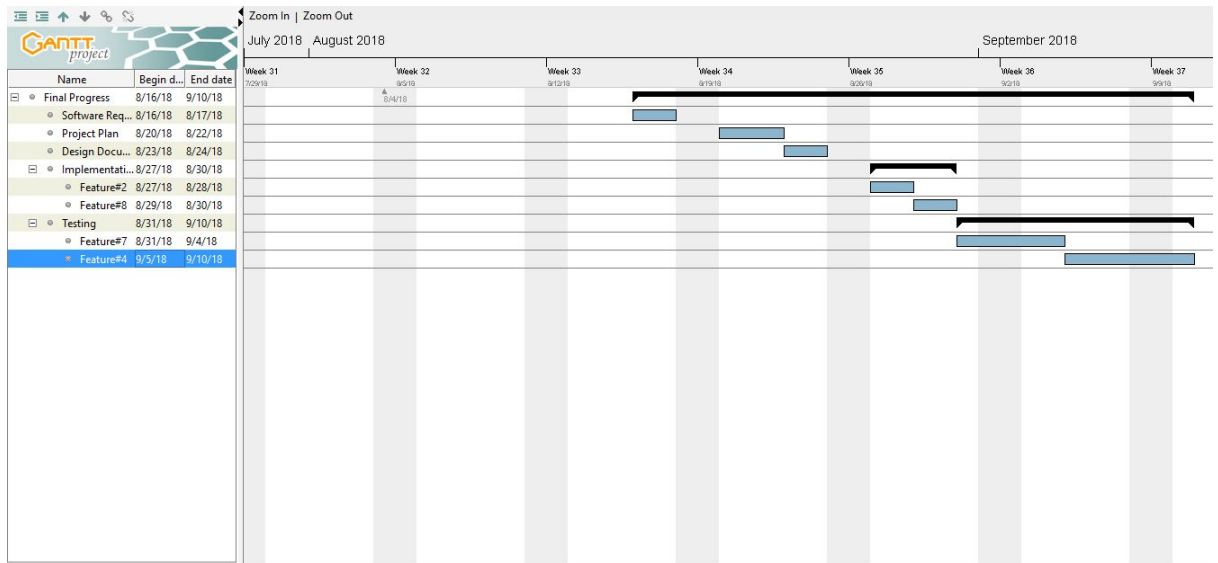


Figure 22: Final Progress Period milestone

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