COSC 4P02: Software Engineering II.

Group 9: Release Planning Document

Scrum Master: Jaden Kuhn (jk21pf@brocku.ca - 7249683)

Product Owner: Dea Kukuqani (<u>dk16qs@brocku.ca</u> – 6196018)

Developers: Shijie Tong (<u>st20az@brocku.ca</u> - 7081201)

Nicholas Caruso (<u>yq20oz@brocku.ca</u> - 7189749)

Thomas Semenak (ts19cp@brocku.ca - 6745038)

Dalton Morris (dm20bq@brocku.ca - 7053184)

Chidera Nwana (cn20rq@brocku.ca - 7078124)

Instructor: Naser Ezzati-Jivan

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Release Planning Document - Group 9

Introduction:

The problem we aim to solve is the lack of a streamlined, automated way for individuals and businesses to create personalized newsletters and social media posts tailored to specific preferences. Currently, users often spend hours manually collecting, curating, and formatting content to meet the needs of their audience. Our goal is to implement a LLM which uses aggregated sources to create summarized content for the user. This content is to be presented in a specified format (e.g. Twitter post, Instagram post, Facebook post, newsletter, etc.), or if the user wants, the aggregated sources themselves will be presented.

This document below explains the various user stories for the project and the associated tasks that go with them (Product Backlog). Our Sprint Backlog is at the bottom of this document, and it displays our goals for each sprint and when the sprints occur.

User Stories:

*Note: For priority, P1 is the highest, P5 is the lowest.

ID	Title	Description	Acceptance Criteria	Priority(P1-P5)	
	Custom News Aggregation				
1	News Source, Topic, and Keyword Aggregation	As a user, I want to be able to input my favorite news sources, topics, keywords, locations, or industries and have the system gather relevant content so that I can quickly review content from my favorite sources.	 Users can input URLs, topics, keywords, locations, or industries representing their interests. The system will locate and display relevant content directly from these URLs or based on these keywords. 	P1	
2	Categorical Tagging of Sources	As a user, I want the system to tag sources with a category so that it can enhance the accuracy of the content displayed.	- The system categorizes sources into pre-defined categories to improve the accuracy of the displayed content.	P4	
3	Approved and Prohibited Sources	As a site administrator, I want to be able to manage the list of approved and prohibited sources so that news and content only comes from safe and acceptable sources.	 Site administrators can add and remove approved sources. Site administrators can add or remove prohibited sources. The system will only locate and display content from approved or non-prohibited sources. 	Р3	
	Flexible Output Formats				
4	Formatting Options	As a user, I want to be able to post and share a newsletter to different platforms, and have my content be tailored to the	- The user can select a platform to share their generated content.	P2	

5	Format Option Editing	different platforms format restrictions (i.e. character count) As an administrator, I want to be able to only have approved websites and platforms available.	 The system formats these newsletters and content to fit the chosen platform or service (email chain, pdf, etc.) An administrator account can add and remove platforms and format options from the list of approved ones. 	P2
			Management	
6	Dashboard Viewing	As a user, I want to view a list of generated content on my dashboard so that I can quickly access past outputs.	 The dashboard displays a paginated list of generated content with clear titles and brief summaries The list is updated in real-time as new content is generated Users can mark items as "read" or "favorite" for future reference 	P2
7	Filter and Sort	As a user, I want to filter and sort my generated content by date, platform, or relevance to easily find specific items.	 Users can filter content by date, platform, and relevance Users can sort content by date, platform, performance metrics 	P4
8	Download Content Directly	As a user, I want to download generated content directly from the dashboard to use it on other platforms.	 Each piece of generated content has a "Download" button Supported formats include PDF for newsletters, text files or CSV (for data posts) Downloads are fast and error-free 	P5
9	Customize Preferences	As a user, I want to customize my preferences (topics, template styles, keywords) directly from the dashboard so I can update my settings easily.	- Changes take effect immediately or upon the next scheduled generation	P4
		Automate	d Scheduling	
10	Schedule Automatic Content Generation	As a user, I want to set a schedule for automatic content generation, so that I do not need to do that manually.	 There are predefined intervals from which the user can select from There is a custom interval option from which the user can enter a custom generation schedule The model generates content based on the interval and adds it to the user's dashboard (or account) 	P3
11	Notifications for the Automatic	As a user, I want to be notified whenever my scheduled content is generated, so that I do not	- When the content is automatically generated (based on the interval), the user gets notified via email	P4

12	Content Generation Generate	need to check the website periodically. Automated Cont As a user, I want to have an	ent Summarization - The main points of the article(s) are	P1
	Summary and Share	easy way to create summarized posts, so I have content to use.	summarized	
13	Content sharing	As a user, I want to be able to share my content on social media, so I don't need to copy/paste it to my feed. Customizal	Users can share their content on social media from the website Dle Templates	P2
14	Pre- Determined Templates	As a user, I want to be able to share the generated content to social media using predetermined templates so that I can save time and resources.	 The system should display various templates for the user to select. The user should be able to select the preferred template for exporting to social media. 	P2
15	Custom Template Design	As an editor, I want to edit AI-generated content into custom templates so that I can ensure it aligns with the brand's tone and style.	 Users should be able to manually create their own templates for content sharing. The system should save the template for future use. 	P2
		Premiur	n Features	
16	Multi- Language Support	As a user, I want to generate content in different languages so that I can reach a global audience.	 Users can select their preferred language before generating content. The system generates the content accordingly. 	P3
17	API Integration	As a developer, I want to access an API for content generation so that I can integrate this service into my application.	 An API is available for integration with other applications. The API fully supports the functionality of the application. 	P3
			sic UI	
18	Basic UI Setup	As a user, I want to be able to access the website, so I can use the service.	- Users can go to the website without any errors (404, etc.)	P2
19	Basic Signup Logic and Function	As a user, I want to be able to sign up/login, so my data is saved.	 Users can sign up using their email to create a unique account (based on their email) Users can sign out and re-login whenever they want (after signing up) 	P2

ID	Task	Associated User Story	Priority
	Cı	ustom News Aggregation	
1	Create a webpage for which the user enters and saves URLs or keywords for content aggregation.	As a user, I want to be able to input my favorite news sources, topics, keywords, locations, or industries and	P1
2	Implement storing and accessing user sources using a database.	have the system gather relevant content so that I can quickly review content from	P1
3	Implement a content retrieval mechanic to obtain content directly from these sources.	my favorite sources.	P1
4	Implement a matching algorithm to filter content based on source/keywords.		P1
5	Create a webpage for which the user can view content associated with a relevant category.	As a user, I want the system to tag sources with a category so that it can enhance the accuracy of the	P4
6	Implement a categorization system for content sources with pre-defined categories.	content displayed.	P4
7	Create a webpage for which administrators can view and manage approved and prohibited sources.	As a site administrator, I want to be able to manage the list of approved and prohibited sources so that	P3
8	Implement functionality for approving and prohibiting sources.	news and content only comes from safe and acceptable sources.	P3
		Automated Scheduling	
9	Create a webpage for which the user goes, to set a schedule	As a user, I want to set a schedule for automatic	P3
10	Create buttons to change the schedule interval (one custom interval button the rest predefined)	content generation, so that I do not need to do that manually.	P3
11	Utilize the database to store user schedule information		P1
12	Add input field on the page and button to save topic selection	As a user, I want to be able to enter links, and topics for	P2
13	Utilize the database to store user schedule topic information	my scheduled automatic content generation, so that the system knows what content to generate.	P1
14	Create an email template	As a user, I want to be	P2
15	Create function to fill the email template with the user's	notified whenever my scheduled content is	P2

	information and link to the new	generated, so that I do not need to check the website	
	generated content (when the content is generated)	periodically.	
16	Create function to send the	periodicany.	P2
10	filled email to the user		1 2
		ated Content Summarization	
17	Research LLMs and different	As a user, I want to have an	P1
1 /	datasets.	easy way to create	
18	Implement and train the LLM.	summarized posts, so I have	P1
19	Fine-tune and optimize the LLM.	content to use.	P1
20	Integrate the LLM with the		P1
21	content aggregation system.		P3
21	Add button to generate the content.		
22	Create a list of connected	As a user, I want to be able	P4
	social media platforms from	to share my content on social	
22	which the user can select from.	media, so I don't need to	D4
23	Add button to share/post summarized content to the	copy/paste it to my feed.	P4
	selected social media platform.	lexible Output Formats	
24	Add dropdown or list for user	As a user, I want to be able	P3
2 4	to select their desired platform	to post and share a	r J
	from after the system has	newsletter to different	
	checked that articles have been	platforms and not be	
	gathered.	restricted by platform	
25	Switching between the	requirements.	P4
	different dropdowns should	-	
	change the displayed format		
	without the need to any refresh		
	buttons or "reformat buttons."		
26	From an administrator login, a	As an administrator, I want	P3
	list of available platforms	to be able to only have	
	should be displayed and should	approved websites and	
	be able to be edited.	platforms available.	
27		ashboard Management	D2
27	Add sorting functionality for	As a user, I want to filter and	P3
20	parameters.	sort my generated content by	D4
28	Add an apply/reset filter button to refine content display	date, platform, or relevance	P4
29	Implement an API to generate	to easily find specific items. As a user, I want to	P5
29	and provide downloadable files	download generated content	1 3
	(PDF, text, CSV)	directly from the dashboard	
1			
	(I DI, text, CSV)	to use it on other platforms.	

30	Design a form on the	As a user, I want to	P5
	dashboard for updating	customize my preferences	
	preferences	(topics, template styles,	
		keywords) directly from the	
		dashboard so I can update	
		my settings easily.	
31	Design and implement the	As a user, I want to view a	P3
	dashboard UI with a section for	list of generated content on	
	displaying content	my dashboard so that I can	
32	Create a database schema for	quickly access past outputs.	P2
	storing generated content		
		tomizable Templates	
33	Design a webpage to allow	As a user, I want to be able	P2
	users to select a template for	to share the generated	1-2
	social media sharing.	content to social media using	
34	Implement a preview window	pre-determined templates so	P5
	so the user can ensure the	that I can save time and	
	template meets their	resources.	
	requirements before sharing.	resources.	
35	Create a content editor	As an editor, I want to edit	P2
	interface with text formatting	AI-generated content into	-
	options for editing AI-	custom templates so that I	
	generated content	can ensure it aligns with the	
	generated content	brand's tone and style.	
		orana s tone and style.	
	I	Premium Features	
36	Integrate a payment system to	16 & 17 (both below)	P1
	allow users to purchase the	10 & 17 (80 11 80 10 11)	
	premium features.		
37	Implement the ability to select	As a year I want to concepts	
"	I IIIIDIEIIIEIII IIIE ADIIIIV IO Seieci	LAS a liser. I want to generate	P3
		As a user, I want to generate content in different	P3
	the language for content	content in different	P3
		content in different languages so that I can reach	P3
38	the language for content generation.	content in different languages so that I can reach a global audience.	
38	the language for content generation. Develop an API for accessing	content in different languages so that I can reach a global audience. As a developer, I want to	P3
38	the language for content generation. Develop an API for accessing the content generation	content in different languages so that I can reach a global audience. As a developer, I want to access an API for content	
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	the language for content generation. Develop an API for accessing the content generation functionality.	content in different languages so that I can reach a global audience. As a developer, I want to access an API for content generation so that I can integrate this service into my application. Basic UI	P3
38	the language for content generation. Develop an API for accessing the content generation functionality. Register a domain/host website	content in different languages so that I can reach a global audience. As a developer, I want to access an API for content generation so that I can integrate this service into my application. Basic UI As a user, I want to be able	
	the language for content generation. Develop an API for accessing the content generation functionality.	content in different languages so that I can reach a global audience. As a developer, I want to access an API for content generation so that I can integrate this service into my application. Basic UI	P3

41	Create a basic sign	As a user, I want to be able	P2
	up/registration page.	to sign up/login, so my data	
42	Create a basic login page.	is saved.	P2
43	Create a table in the database		P1
	to save user login/registration		
	information.		

Sprint Backlog:

Sprint	Tasks
	- Register a domain/host website through Brock.
Sprint 1	- Create a basic landing page.
(Jan. 21 – Jan. 27)	 Create a basic sign up/registration page.
	- Create a basic login page.
	- Create a table in the database to save user
	login/registration information.
	 Research LLMs and different datasets
	- Develop a system to fetch content from user inputted sources
Sprint 2	APIs (news sources):
(Jan. 28 – Feb. 11)	 register NewsAPI (research familiarize)
	 Write to fetch data from the API based on user inputted sources keywords (topics, date range, source names)
	 Database schema for storing fetched content (URL, date, summary, source)
	 TESTING
	 Test fetching content with various user inputs Test cases like invalid inputs or network issues
	 UI for inputting sources (security)
	- Start training the LLM on our chosen dataset(s)
	- Fine-tune and optimize the LLM
	 Placeholder for displaying aggregated sources or summarized content
	- Continue training/fine-turning LLM for chosen dataset(s)
Sprint 3	- Create a summarize function for users:
(Feb. 11 – Feb. 23)	 Add a summarize button
	Make sure allow to summarize multiple article
	- Create a button to find similar news articles gathered
	automatically
	- Make our AI able to search news article for same theme.
	- Add link to webpage
	- Integrate the LLM for summarizing aggregated content
	 Connect the language model and aggregated content system together
Sprint 4	- Allow users to set schedules for automatic content (daily,
(Feb. 25 – Mar. 11)	weekly)

	 Task scheduler (celery, cron jobs) email Favorite articles Display aggregated content (add filters and sorting) Improve UI for better navigation Create a share function for users: Add a share button Add a list for people to share Add notification part Create a list which wrote by same author Make a profile for users and make sure users can find their article in their profile. APIs for post contenting directly to social media platforms (Twitter, LinkedIn, Facebook)
Sprint 5 (Mar. 11 – Mar. 23)	 Final testing and polishing Implement download functionality in multiple formats Create customizable templates for users

<u>Tool Screenshots:</u>

Epic, User Stories, and Tasks for Custom News Aggregation:



Epic, User Stories, and Tasks for Flexible Output Formats:



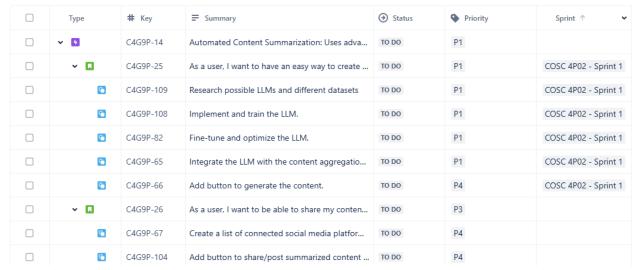
Epic, User Stories, and Tasks for Dashboard Management:



Epic, User Stories, and Tasks for Automated Scheduling:

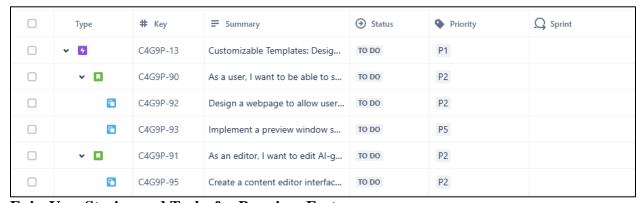


Epic, User Stories, and Tasks for Automated Content Summarization:

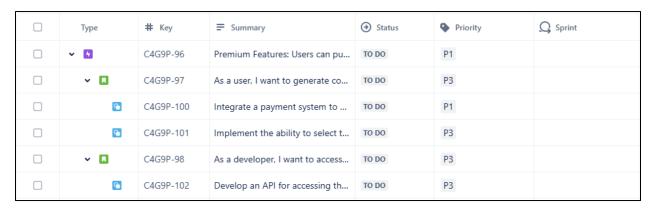


*Note: Only the task," Research possible LLMs and different datasets" is a part of Sprint 1. In Jira, the user story needs to be included in the sprint that any child tasks are a part of.

Epic, User Stories, and Tasks for Customizable Templates:



Epic, User Stories, and Tasks for Premium Features:



User Stories and Tasks for Basic UI (Sprint 1):

Туре	# Key	≡ Summary	Status	Priority	
· .	C4G9P-83	As a user, I want to be able to a	TO DO	P2	COSC 4P02 - Sprint 1
	C4G9P-86	Create a basic landing page.	TO DO	P1	COSC 4P02 - Sprint 1
	C4G9P-85	Register a domain/host website	TO DO	P4	COSC 4P02 - Sprint 1
· .	C4G9P-84	As a user, I want to be able to si	TO DO	P2	COSC 4P02 - Sprint 1
	C4G9P-89	Create a table in the database t	TO DO	P1	COSC 4P02 - Sprint 1
	C4G9P-88	Create a basic login page.	то до	P2	COSC 4P02 - Sprint 1
	C4G9P-87	Create a basic sign up/registrati	TO DO	P2	COSC 4P02 - Sprint 1

Market Research:

In analyzing existing SaaS platforms that align with our product planning requirements, we focused on Paper.li and Scoop.it, both of which offer content aggregation, curation, and distribution features. Paper.li provides an easy-to-use interface for automating content aggregation based on user-defined topics, sources, and keywords. It generates personalized newsletters that can be distributed via email, offering an efficient solution for users seeking automated content curation. However, Paper.li's limitations are clear in its inability to easily format content for various social media platforms and its lack of advanced scheduling options for multi-platform publishing. Additionally, the AI-driven content summaries are basic, which may not satisfy users looking for more nuanced, tailored output.

In contrast, Scoop.it offers a more sophisticated approach to content curation and publishing. It allows users to aggregate content from specific sources and topics and supports direct publishing to multiple social media platforms. One of Scoop.it's key strengths lie in its detailed analytics, enabling users to track performance across platforms. However, its pricing model can be prohibitive for smaller teams or students, limiting accessibility. Furthermore, while it allows for some content customization, Scoop.it does not offer extensive options for creating fully branded templates for newsletters, and its scheduling features, though present, are not as intuitive as those found in competing platforms.

Our proposed system seeks to build on the strengths of both Paper.li and Scoop.it while addressing their shortcomings. Unlike Paper.li, which focuses primarily on newsletter creation, our platform will support multiple output formats, including tailored posts for social media platforms such as Twitter, LinkedIn, and Instagram. This multi-format approach will provide greater flexibility for users to share content across various channels. In contrast to Scoop.it's focus on advanced analytics, which may not be a priority for small businesses or individual users, our platform will prioritize accessibility and affordability. By offering automated content generation with customizable scheduling, notifications, and content summaries powered by advanced natural language processing (NLP) and large language models (LLMs), our system will deliver more personalized and accurate content than the basic summaries offered by both Paper.li and Scoop.it.

The SaaS market is experiencing substantial growth, with content management tools being a significant area of demand. In 2023, SaaS adoption reached 85% of enterprise software usage, and organizations continue to allocate significant resources toward SaaS solutions. On average, companies spend \$9,600 per employee annually on SaaS products, demonstrating a strong appetite for innovative content management tools. This market trend underscores the potential success of our platform, particularly with its unique combination of flexibility, user-friendliness, and affordability, which is particularly attractive to the growing number of small businesses, students, and social media influencers in need of accessible content solutions

https://www.saasacademy.com/blog/saas-statistics

https://redline.digital/saas-industry-statistics/

Release Planning Challenges:

There were several challenges encountered during the Release Planning process:

- → Unclear Requirements:
 - Determining tasks for epics and breaking down required tasks into what epics they fit under.
 - Starting our project board on GitHub seemed like the best approach initially and turned out to not fit our needs and was not the most user friendly, so we switched to using Jira to define sprint backlogs and tasks.
 - It took a bit of work to sort out a clear formatting style for release planning document and backlogs.

→ Team Coordination:

- Occordinating between 7 developers with different schedules, workloads, and availabilities was a challenge encountered during this release planning process. This week two official meetings were held, the first during the scheduled lecture time (attended by all members) and the second on Thursday with the TA (attended by 6/7 members due to scheduling conflicts). Going forward, we aim to have all meetings during the 9-12 block on Tuesday to ensure full attendance by the group.
- o To this point, work has been split (relatively) evenly between group members

For the next phase of the project, we aim to:

→ Modify Backlog:

 As the project progresses, small changes to the backlog may be required. User stories may need to be broken down into further tasks, or some tasks may need to be refined. As a group, we will aim to clarify which backlog items require modification and modify these accordingly.

→ Begin Sprint 1:

 A full team meeting will be conducted on Tuesday to divide the tasks for the first sprint. The first sprint will be the shortest, lasting one week in duration. It will also begin on Tuesday after our meeting.

Appendix A - Meeting Minutes:

January 14, 2025 – Meeting 2

Joined: Dea, Shijie, Dalton, Jaden, Nicholas, Thomas, Chidera.

- → The group went over the project description and worked together to break the project into several themes and epics. The project was broken down into 6 initial themes:
 - O Six group members were allocated a theme and were tasked with breaking down the theme into user stories, and then into further tasks (Shijie, Dalton, Jaden, Nicholas, Thomas, Chidera). A single group member was allocated to reviewing and modifying these themes, stories, and tasks to ensure they were clear and concise (Dea).
- → The GitHub Repository ReadMe was modified (Thomas).
- \rightarrow The group also discussed the Release Planning Meeting with the TA. Thursday (1/16/2025) at 11:40 was the timeslot selected, where the most members could attend (6/7 were able to attend, as the meeting is outside of the course hours).
- → Next meeting: The group will show the initial themes and user stories to the TA and seek clarification about the report format. Once approved, we will begin breaking down the user stories into tasks and implementing these tasks in GitHub Projects.

January 16, 2025 – Meeting 3 - Release Planning Meeting

Joined: Dea, Dalton, Jaden, Nicholas, Thomas, Chidera.

Absent: Shijie (schedule conflict)

- → The group presented the themes and user stories to the TA.
 - o Also requested clarification on the format of the report.
 - We were advised that a template was now provided on Brightspace for the report.
 - Suggestions were also made for additional contents in the report. For example, researching a similar market application and including pros and cons to the features it already has.
- → After the Release Planning Meeting was finished, the group met to debrief the meeting.
 - Now that the user stories were presented, we would begin breaking down the stories into tasks.

- As discussed in the previous meeting, six group members were allocated a theme, and tasked with breaking down the theme into user stories, and then into further tasks (Shijie, Dalton, Jaden, Nicholas, Thomas, Chidera). One group member would be responsible for performing market research and including this in the report (Dea).
- → The group also discussed GitHub Projects, and it was determined that Jira may be the best software to implement our backlog, as it has many options and customizations that are not available within GitHub.
 - The group agreed, and the switch was made. All members of the group were added to the Jira Project.
- → Next meeting: The group will have completed the user stories, product backlog, and the sprint backlogs. They will have been implemented in Jira, and the Release Planning Document will have been submitted. The group will meet on Tuesday (1/21/2025) to allocate tasks for Sprint 1 and will formally begin implementing the project.

Appendix B - Team Contributions:

Team Member	Contribution
Jaden Kuhn	 Wrote user stories for a feature Helped write the sprint backlog Helped set up the Jira board, adding the priority field and epics/user stories/tasks Decomposed user stories into tasks (product backlog) Added epic/user stories/tasks into Jira Wrote the introduction
Chidera Nwana	 Wrote user stories for a feature Contributed ideas for user stories Decomposed user stories in the Customizable Templates section into tasks with added priorities f Updated the product backlog for the Customizable Templates section
Dalton Morris	 Wrote user stories for a feature Filled in non-functional requirements Broke down some features into tasks on Jira Filled out some of the challenges section
Dea Kukuqani	 Verified the user stories for contradictions and accuracy Did market research and go over extra features we want to include or expand

	on – focused on two similar products
	that we want to compare to while
	meeting market needs
Nicholas Caruso	- Created the Jira page for the project.
	- Wrote user stories for features.
	 Decomposed user stories into tasks.
	- Implemented stories and tasks into
	Jira.
	- Wrote the "Challenges" section.
	- Included "Meeting Minutes".
Thomas Semenak	- Wrote user stories for a feature and
	decomposed into tasks
	 Updated the readme on GitHub
	- Brain-stormed for sprint backlog
	- Helped with sprint backlog
	- Helped set up the Jira board, adding
	epics/user stories/tasks
Shijie Tong	- Wrote user stories for a feature
	- Helped with Jira (set up story and
	tasks)
	- Helped with sprint backlog
	 Helped with product backlog