INSY6212 ASSINGMENT 2

ST10194321 & ST1034088

MAY 9, 2025

PREPARED FOR:
Felicia Jagdeo

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Introduction to Application

ShepSafe is a user-friendly mobile application designed specifically for the Port Shepstone CBD and the surrounding areas within a 10-kilometer radius. The primary purpose of this application is to provide timely notifications to community members regarding local crime incidents (Dlamini, 2022). The app will facilitate the creation of interactive community forums which will connect the existing Crime Prevention Forum (CPF) groups directly with local residents.

Users which are the community will have the ability to receive real-time updates, send emergency alerts, request immediate assistance or patrol support, and engage actively in community discussions (Crime Spotter, 2025). The app will include educational resources, providing practical safety tips and strategies on how to effectively prevent and respond to potential threats (Crime Spotter, 2025).

This application will directly addresses the increasing crime rates in the currently deteriorating CBD, which have begun to affect the surrounding communities. Through the act of improving communication and collaboration between CPF groups and local residents, the application aims to grow a stronger, more proactive community approach to public safety and crime prevention (Dlamini, 2022).

Question 1.1

In the case for the crime notification and prevention app for Port Shepstone called ShepSafe, a project evaluation form will provide a detailed breakdown of project objectives. The evaluation form will serve for gathering feedback from users, stakeholders, and project team members (Gido, Clements and Baker, 2018). Assess how well the application is functioning in terms of usability, responsiveness, and effectiveness in crime prevention. It will help in identifying the strengths as well as weaknesses so that the development team can recognize which features is working correctly, for instance, call for assistance, which has various developing factors, user interface design, system bugs, or community interactions features (Landau, 2022). The project evaluation form promotes accountability of the projects team, aligning the teams with the goals and expectations of the community. From a management perspective, it provides an extensive overview of the project, centralizing data to aid the decision making processes.

Considering growing crime in Port Shepstone CBD and how the apps features will help with community security (Jasson, 2024). Implementing a project evaluation form will correctly identity and address the concerns of the people in the community which in turn enhances the development of the application in response to the people's comments. This maintains the apps relevance and user trust whilst progressing towards the ultimate goal of securing the community.

Question 1.2

Cross-platform development is a software development approach that enables developers to create a single application that can run on multiple operating systems such as Android and iOS using one shared codebase (Białęcki, 2023). Whereas the alternative is to create native application for each platform that the application is accessed through. In the case of the notification and crime prevention in Port Shepstone CBD and surrounding areas, using a single codebase for a cross platform development style will be most beneficial. Ensuring accessibility across all platforms and devices while maintaining a consistent function and UI/UX.

Cross platform development for our crime alert and prevention application helps to simplify the development process by reducing the amount of time that is required for developing and maintaining individual applications for each platform (Białęcki, 2023). The developer can write the logic and UI pieces once, using a unified codebase and run them for Android and iOS. It gets rid of the duplicate efforts, reduces testing hours, and becomes easier to make bug fixes and updates. Therefore, the project can be implemented faster, enabling us to react fast to the increase in crime in the Port Shepstone CBD and vicinity.

Performance

Due to the cross platform frameworks differ from the native frameworks, there will be a minor performance penalty (Białęcki, 2023). Additionally, the graphical or resourceful predominate features will increase the latency of the application.

User Interface

The application may not always support all components of the UI design the same way, resulting in inconsistencies in the look and feel of the application.

Security

Cross Platform components are not as well looked after compared to the native counterparts. The libraries used are sometimes outdated creating risks in code and user experience. The storage and encryption for the application will provide some challenges as each platform has different criteria (Białęcki, 2023). Finding a middle

ground between the platform criteria’s whilst maintaining the security standards of the application may be difficult.

Cross platform development ensures that all users, with various devices have access to the same set of features, interface design, and application updates. This consistency improves usability and reliability, especially for an application focused on safety and communication (Białęcki, 2023). Faster update cycles and easier maintenance mean issues can be resolved quickly, reducing user frustration. The ability to deliver a smooth and uniform experience across platforms increases user satisfaction and trust in the app, which is crucial for a tool that the community will rely on for receiving crime alerts, requesting help, and staying informed.

Question 1.3

Real Time Crime Alerts

One of the core deliverables for this project is the Real-Time Crime Alerts feature. This will allow users within a radius of Port Shepstone CBD to receive immediate notifications about nearby criminal activity, categorized by type, urgency, and location. It will rely on geolocation services to ensure alerts are accurate and timely, and CPF members will be responsible for verifying and issuing these alerts via an admin dashboard (Crime Spotter, 2025). This feature is essential to the project's aim of increasing community safety and awareness, as outlined in the Project Charter (Gillis, 2022). By delivering real time information, the application ensures residents are well informed and can take proactive steps to avoid dangerous situations, thus directly supporting the project's objective of reducing crime and improving communication.

Emergency Help Request

A major deliverable is Emergency Help Request, which will include a panic button that sends an SOS message as well as the user’s live location to nearby enforcement members (Crime Spotter, 2025). This tool may also connect to emergency services and will log all help requests for follow up or accountability (Gillis, 2022). This deliverable is crucial because it empowers residents to seek immediate assistance during emergencies. This feature aligns with the project's mission to provide quick and effective crime response mechanisms and ensure community members are never left without support when they need it most (Gido, Clements and Baker, 2018).

CPF Community Forum

A key deliverable is the CPF Community Forum, which will offer a space for users to join monitored local discussion groups. These forums will enable real time interactions, allowing residents to report concerns, share observations, and receive updates from CPF (Crime Spotter, 2025). This feature shows the project's commitment to strengthening communication between CPF groups and the broader community. As outlined in the Project Charter, creating an inclusive and collaborative environment is essential for a sustainable crime prevention strategy, and the forum delivers just that (Gido, Clements and Baker, 2018).

Interactive crime maps

The Interactive Crime Map is another deliverable that adds great value to the application. This map will visualize recent crime data within an area, allowing users to view hotspots, filter incidents by type and time, and better understand local safety trends (Crime Spotter, 2025). CPF members can also use it to manage patrol zones effectively. Visualizing data helps users grasp complex crime patterns quickly, which in turn informs their daily decisions. This supports the goal of enhancing safety awareness and using technology to provide data-driven insights into community safety (Gillis, 2022).

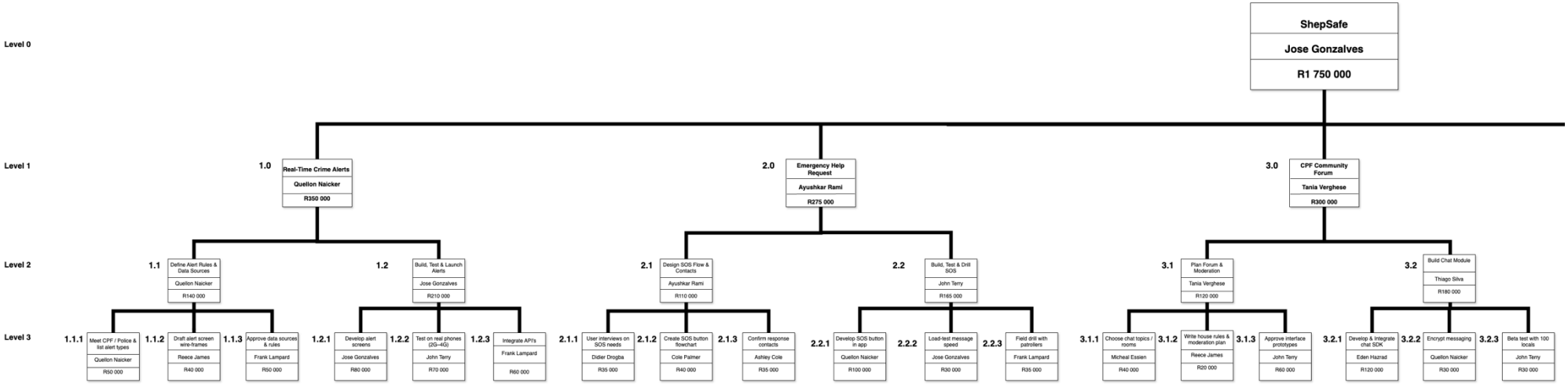
Safety Tips & Learning Hub

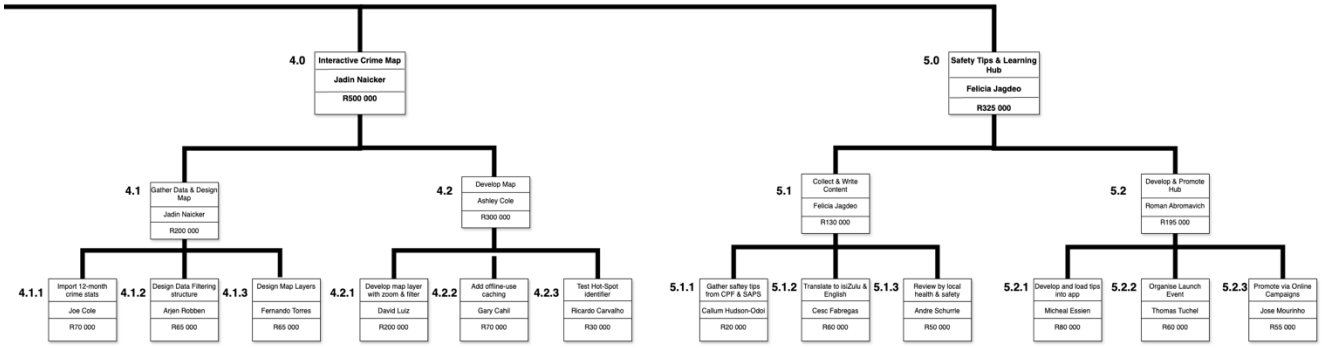
The safety tips and learning hub is an educational resource within the app. It will include articles, videos, and guides that teach users how to protect themselves, respond to threats, and understand local safety laws and procedures (Crime Spotter, 2025). This content will be regularly updated to remain relevant to the evolving crime landscape (Gillis, 2022). This will also be the place where users can learn more about the app and how it could help them. The purpose of this deliverable is to empower residents with knowledge, helping to prevent crime through awareness and preparation. This ties directly into the projects goal of educating the public and building a proactive, informed community equipped to handle safety challenges (Gido, Clements and Baker, 2018).

Question 2

ShepSafe Work Breakdown Structure

Link: https://drive.google.com/drive/folders/19jEjvlFCXjv-LmR8sEQemYnc_U-hmewI?usp=share_link





(Draw.io ,2025) ,

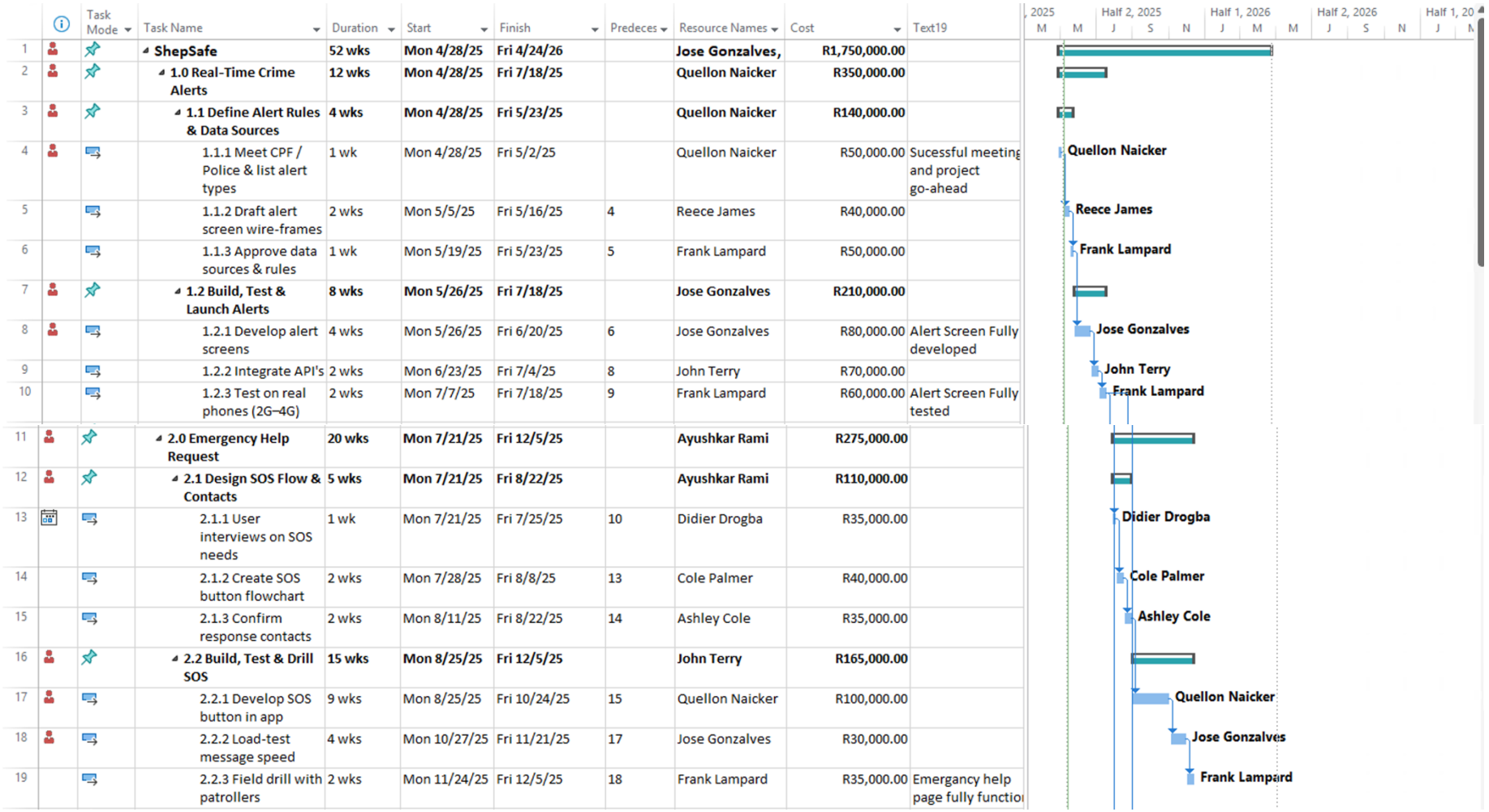
(Gido, Clements and Baker, 2018)

Images have been uploaded to GitHub as well: https://github.com/Quellon/ShepSafe.git

Question 3.1

Indentured List and Gantt

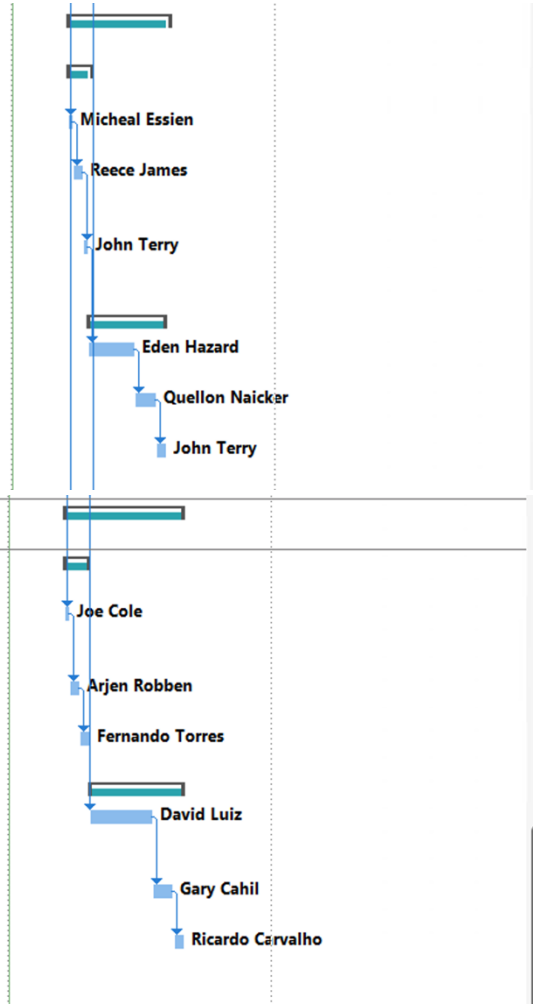
Link: https://drive.google.com/drive/folders/1Yi9X8bIP9qxKsCADAxEg-uyt9RpVXrFD?usp=share_link



	Task Mode	Task Name	Duration	Start	Finish	Predeces	Resource Names	Cost	Text19
1		**ShepSafe**	**52 wks**	**Mon 4/28/25**	**Fri 4/24/26**		**Jose Gonzalves,**	**R1,750,000.00**	
2		**1.0 Real-Time Crime Alerts**	**12 wks**	**Mon 4/28/25**	**Fri 7/18/25**		**Quellon Naicker**	**R350,000.00**	
3		**1.1 Define Alert Rules & Data Sources**	**4 wks**	**Mon 4/28/25**	**Fri 5/23/25**		**Quellon Naicker**	**R140,000.00**	
4		1.1.1 Meet CPF / Police & list alert types	1 wk	Mon 4/28/25	Fri 5/2/25		Quellon Naicker	R50,000.00	Sucessful meeting and project go-ahead
5		1.1.2 Draft alert screen wire-frames	2 wks	Mon 5/5/25	Fri 5/16/25	4	Reece James	R40,000.00	
6		1.1.3 Approve data sources & rules	1 wk	Mon 5/19/25	Fri 5/23/25	5	Frank Lampard	R50,000.00	
7		**1.2 Build, Test & Launch Alerts**	**8 wks**	**Mon 5/26/25**	**Fri 7/18/25**		**Jose Gonzalves**	**R210,000.00**	
8		1.2.1 Develop alert screens	4 wks	Mon 5/26/25	Fri 6/20/25	6	Jose Gonzalves	R80,000.00	Alert Screen Fully developed
9		1.2.2 Integrate API's	2 wks	Mon 6/23/25	Fri 7/4/25	8	John Terry	R70,000.00	
10		1.2.3 Test on real phones (2G–4G)	2 wks	Mon 7/7/25	Fri 7/18/25	9	Frank Lampard	R60,000.00	Alert Screen Fully tested
11		**2.0 Emergency Help Request**	**20 wks**	**Mon 7/21/25**	**Fri 12/5/25**		**Ayushkar Rami**	**R275,000.00**	
12		**2.1 Design SOS Flow & Contacts**	**5 wks**	**Mon 7/21/25**	**Fri 8/22/25**		**Ayushkar Rami**	**R110,000.00**	
13		2.1.1 User interviews on SOS needs	1 wk	Mon 7/21/25	Fri 7/25/25	10	Didier Drogba	R35,000.00	
14		2.1.2 Create SOS button flowchart	2 wks	Mon 7/28/25	Fri 8/8/25	13	Cole Palmer	R40,000.00	
15		2.1.3 Confirm response contacts	2 wks	Mon 8/11/25	Fri 8/22/25	14	Ashley Cole	R35,000.00	
16		**2.2 Build, Test & Drill SOS**	**15 wks**	**Mon 8/25/25**	**Fri 12/5/25**		**John Terry**	**R165,000.00**	
17		2.2.1 Develop SOS button in app	9 wks	Mon 8/25/25	Fri 10/24/25	15	Quellon Naicker	R100,000.00	
18		2.2.2 Load-test message speed	4 wks	Mon 10/27/25	Fri 11/21/25	17	Jose Gonzalves	R30,000.00	
19		2.2.3 Field drill with patrollers	2 wks	Mon 11/24/25	Fri 12/5/25	18	Frank Lampard	R35,000.00	Emergancy help page fully functio

(Microsoft,2025b) ,(Gido, Clements and Baker, 2018)

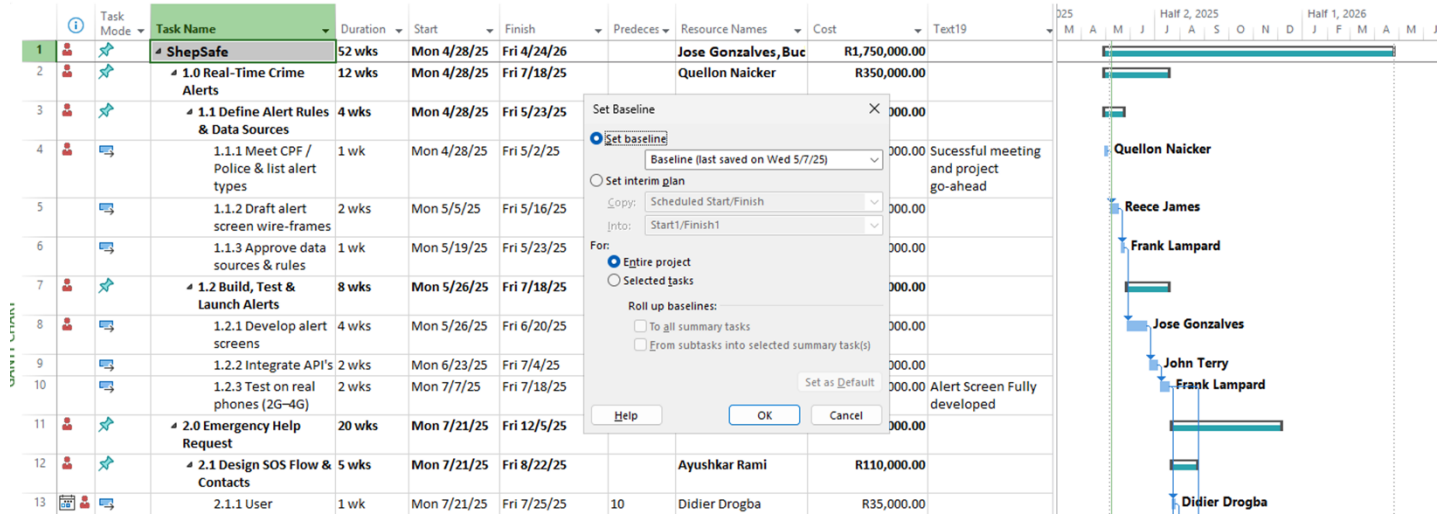
20			**3.0 CPF Community Forum**	**20 wks**	**Mon 7/21/25**	**Fri 12/5/25**		**Tania Verghese**	**R300,000.00**	
21			**3.1 Plan Forum & Moderation**	**5 wks**	**Mon 7/21/25**	**Fri 8/22/25**		**Tania Verghese**	**R120,000.00**	
22			3.1.1 Choose chat topics / rooms	1 wk	Mon 7/21/25	Fri 7/25/25	10	Micheal Essien	R40,000.00	
23			3.1.2 Write house rules & moderation plan	2 wks	Mon 7/28/25	Fri 8/8/25	22	Reece James	R20,000.00	
24			3.1.3 Approve interface prototypes	1 wk	Mon 8/11/25	Fri 8/15/25	23	John Terry	R60,000.00	
25			**3.2 Build Chat Module**	**15 wks**	**Mon 8/18/25**	**Fri 11/28/25**		**Thiago Silva**	**R180,000.00**	
26			3.2.1 Develop & Integrate chat SDK	9 wks	Mon 8/18/25	Fri 10/17/25	24	Eden Hazard	R120,000.00	
27			3.2.2 Encrypt messaging	4 wks	Mon 10/20/25	Fri 11/14/25	26	Quellon Naicker	R30,000.00	
28			3.2.3 Beta test with locals	2 wks	Mon 11/17/25	Fri 11/28/25	27	John Terry	R30,000.00	Community Chat fully functional
29			**4.0 Interactive Crime Map**	**23 wks**	**Mon 7/21/25**	**Fri 12/26/25**		**Jadin Naicker**	**R500,000.00**	
30			**4.1 Gather Data & Design Map**	**5 wks**	**Mon 7/21/25**	**Fri 8/22/25**		**Jadin Naicker**	**R200,000.00**	
31			4.1.1 Import 12-month crime stats	1 wk	Mon 7/21/25	Fri 7/25/25	10	Joe Cole	R70,000.00	
32			4.1.2 Design Data Filtering structure	2 wks	Mon 7/28/25	Fri 8/8/25	31	Arjen Robben	R65,000.00	
33			4.1.3 Design Map Layers	2 wks	Mon 8/11/25	Fri 8/22/25	32	Fernando Torres	R65,000.00	
34			**4.2 Develop Map**	**18 wks**	**Mon 8/25/25**	**Fri 12/26/25**		**Ashley Cole**	**R300,000.00**	
35			4.2.1 Develop map layer with zoom & filter	12 wks	Mon 8/25/25	Fri 11/14/25	10	David Luiz	R200,000.00	
36			4.2.2 Add offline-use caching	4 wks	Mon 11/17/25	Fri 12/12/25	35	Gary Cahil	R70,000.00	
37			4.2.3 Test Hot-Spot identifier	2 wks	Mon 12/15/25	Fri 12/26/25	36	Ricardo Carvalho	R30,000.00	Tested and developed Crime hotstop map



(Microsoft,2025b), (Gido, Clements and Baker, 2018)

38			5.0 Safety Tips & Learning Hub	17 wks	Mon 12/29/25	Fri 4/24/26		Felicia Jagdeo	R325,000.00	
39			5.1 Collect & Create Content	4 wks	Mon 12/29/25	Fri 1/23/26		Felicia Jagdeo	R130,000.00	
40			5.1.1 Gather saftey tips from CPF &	1 wk	Mon 12/29/25	Fri 1/2/26	28,37,19	Callum Hudson-Odoi	R20,000.00	
41			5.1.2 Translate to isiZulu & English	1 wk	Mon 1/5/26	Fri 1/9/26	40	Cesc Fabregas	R60,000.00	
42			5.1.3 Review by local health &	2 wks	Mon 1/12/26	Fri 1/23/26	41	Andre Schurrle	R50,000.00	
43			5.2 Develop & Promote Hub	13 wks	Mon 1/26/26	Fri 4/24/26		Roman Abromavich	R195,000.00	
44			5.2.1 Develop and load tips into app	7 wks	Mon 1/26/26	Fri 3/13/26	42	Micheal Essien	R80,000.00	
45			5.2.2 Organise Launch Event	3 wks	Mon 3/16/26	Fri 4/3/26	44	Jose Gonzalves	R60,000.00	
46			5.2.3 Promote via Online Campaigns	3 wks	Mon 4/6/26	Fri 4/24/26	45	Jose Mourinho	R55,000.00	Successful implentation of Ti and launch

Baseline Plan Set



	Task Mode	Task Name	Duration	Start	Finish	Predeces	Resource Names	Cost	Text19
1		ShepSafe	52 wks	Mon 4/28/25	Fri 4/24/26		Jose Gonzalves,Buc	R1,750,000.00	
2		1.0 Real-Time Crime Alerts	12 wks	Mon 4/28/25	Fri 7/18/25		Quellon Naicker	R350,000.00	
3		1.1 Define Alert Rules & Data Sources	4 wks	Mon 4/28/25	Fri 5/23/25			000.00	
4		1.1.1 Meet CPF / Police & list alert types	1 wk	Mon 4/28/25	Fri 5/2/25			000.00	Sucessful meeting and project go-ahead
5		1.1.2 Draft alert screen wire-frames	2 wks	Mon 5/5/25	Fri 5/16/25			000.00	
6		1.1.3 Approve data sources & rules	1 wk	Mon 5/19/25	Fri 5/23/25			000.00	
7		1.2 Build, Test & Launch Alerts	8 wks	Mon 5/26/25	Fri 7/18/25			000.00	
8		1.2.1 Develop alert screens	4 wks	Mon 5/26/25	Fri 6/20/25			000.00	
9		1.2.2 Integrate API's	2 wks	Mon 6/23/25	Fri 7/4/25			000.00	
10		1.2.3 Test on real phones (2G–4G)	2 wks	Mon 7/7/25	Fri 7/18/25			000.00	Alert Screen Fully developed
11		2.0 Emergency Help Request	20 wks	Mon 7/21/25	Fri 12/5/25			000.00	
12		2.1 Design SOS Flow & Contacts	5 wks	Mon 7/21/25	Fri 8/22/25		Ayushkar Rami	R110,000.00	
13		2.1.1 User	1 wk	Mon 7/21/25	Fri 7/25/25	10	Didier Drogba	R35,000.00	

(Microsoft,2025b)

(Gido, Clements and Baker, 2018)

Question 3.2

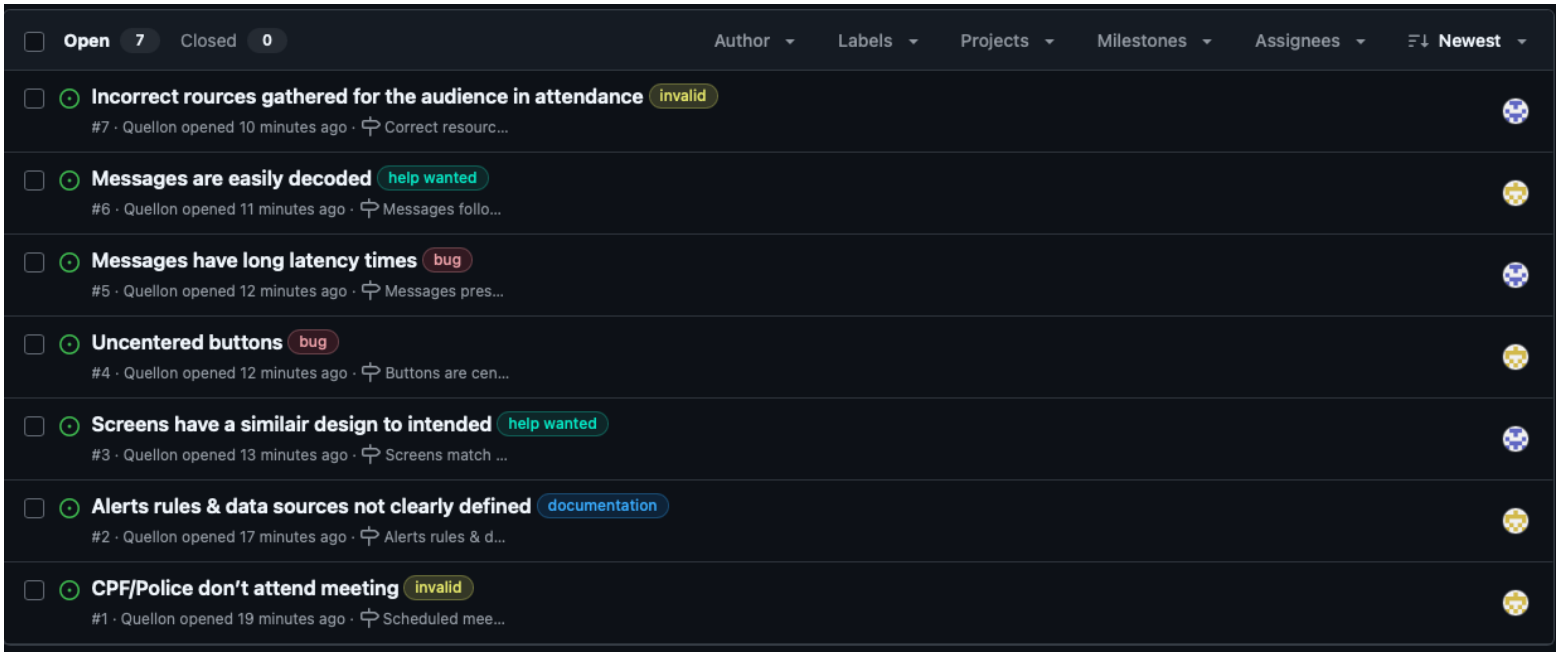
Microsoft Projects Logs

	Task Mode	Task Name	Issue Name	Labels	Assignees	Project	Milestones
1		Meet CPF/Police & list alert types	**CPF/Police don't attend meeting**	Invalid	Quellon Naicker	**ShepSafe**	Scheduled meeting with CPF/Police is completed
2		Define Alert Rules & Data Sources	**Alerts rules & data sources not clearly defined**	Documentation	Quellon Naicker	**ShepSafe**	Alerts rules & data sourcesare defined and communicated
3		Develop Alert screens	**Screens have a similair design to intended**	Help Wanted	Jose Gonzalves	**ShepSafe**	Screens match intended design
4		Develop SOS button in app	**Uncentered buttons**	Bug	Quellon Naicker	**ShepSafe**	Buttons are centered correctly
5		Load-test message speed	**Messages have long latency times**	Bug	Jose Gonzalves	**ShepSafe**	Messages present correct text and low latency
6		Encrypt messaging	**Messages are easily decoded**	Help Wanted	Quellon Naicker	**ShepSafe**	Messages follow the correct encryption plan
7		Organise Launch Event	**Incorrect rources gathered for the audience in attendance**	Invalid	Jose Gonzalves	**ShepSafe**	Correct resources and people are present

(Microsoft,2025b)

GitHub Issue Logs

Link: https://github.com/Quellon/ShepSafe.git

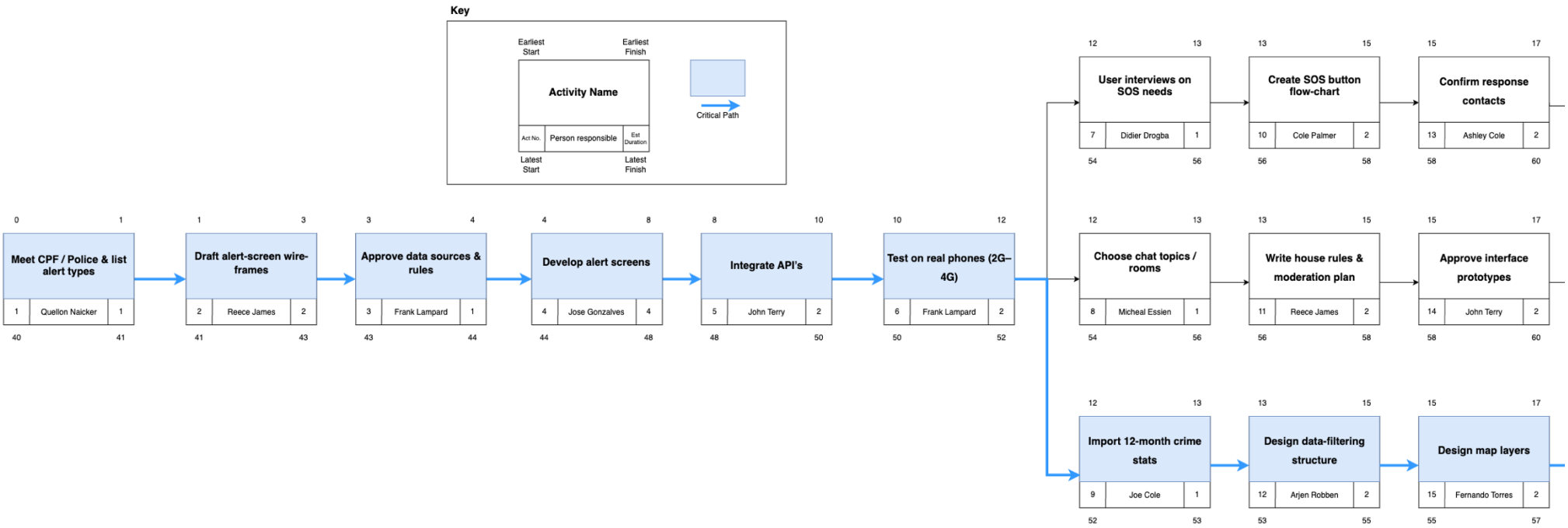


(Github, 2025)

Question 4

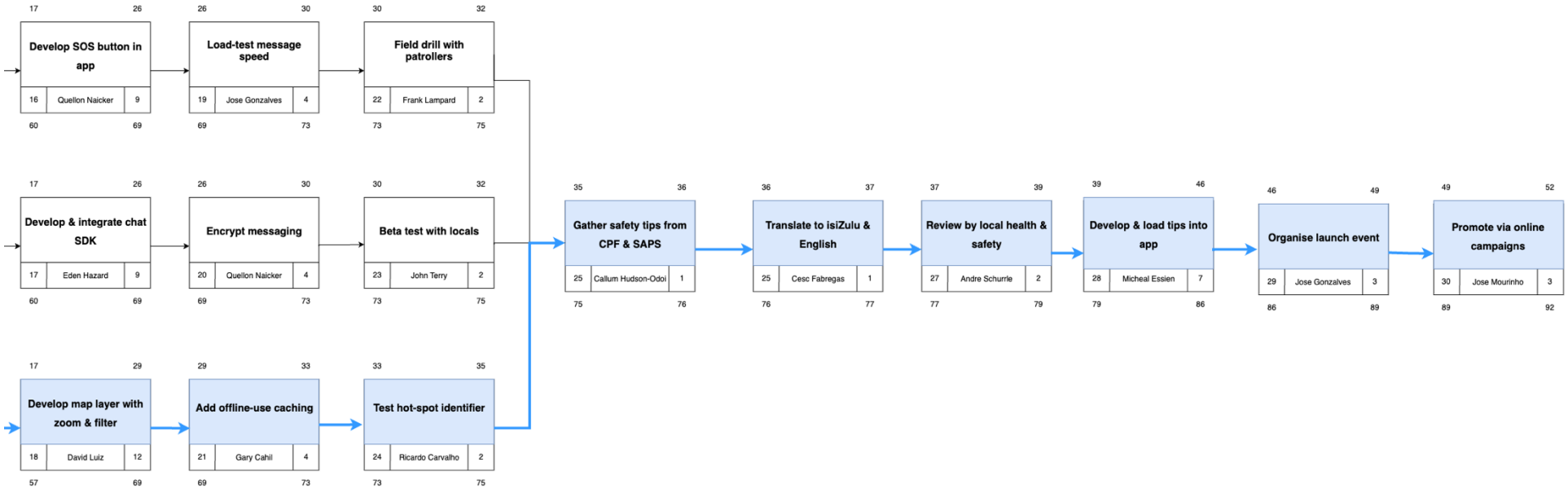
Network Diagram for ShepSafe

Link: https://drive.google.com/drive/folders/18c-Kizl4MkNXA9y3mEt6GrKhVZUXQSws?usp=share_link



(Draw.io ,2025) ,

(Gido, Clements and Baker, 2018)



(Draw.io ,2025) ,

(Gido, Clements and Baker, 2018)

Images have been uploaded to GitHub as well: https://github.com/Quellon/ShepSafe.git

Schedule Table Showing Earliest/ Latest Start and Finish Times and Total Slack

				Earlist		Latest		
	Activity	Resonsible	Est. Duration	Start	Finish	Start	Finish	Total Slack
1	Meet CPF / Police & list alert types	Quellon Naicker	1	0	1	40	41	40
2	Draft alert screen wire-frames	Reece James	2	1	3	41	43	40
3	Approve data sources & rules	Frank Lampard	1	3	4	43	44	40
4	Develop alert screens	Jose Gonzalves	4	4	8	44	48	40
5	Integrate API's	John Terry	2	8	10	48	50	40
6	Test on real phones (2G–4G)	Frank Lampard	2	10	12	50	52	40
7	User interviews on SOS needs	Didier Drogba	1	12	13	54	56	43
8	Choose chat topics / rooms	Micheal Essien	1	12	13	54	56	43
9	Import 12-month crime stats	Joe Cole	1	12	13	54	56	43
10	Create SOS button flowchart	Cole Palmer	2	13	15	56	58	43
11	Write house rules & moderation plan	Reece James	2	13	15	56	58	43
12	Design Data Filtering structure	Arjen Robben	2	13	15	56	58	43
13	Confirm response contacts	Ashley Cole	2	15	17	58	60	43
14	Approve interface prototypes	John Terry	2	15	17	58	60	43
15	Design Map Layers	Fernando Torres	2	15	17	55	57	40
16	Develop SOS button in app	Quellon Naicker	9	17	26	60	69	43
17	Develop & Integrate chat SDK	Eden Hazard	9	17	26	60	69	43
18	Develop map layer with zoom & filter	David Luiz	12	17	29	57	69	40
19	Load-test message speed	Jose Gonzalves	4	26	30	69	73	43
20	Encrypt messaging	Quellon Naicker	4	26	30	69	73	43
21	Add offline-use caching	Gary Cahil	4	29	33	69	73	40
22	Field drill with patrollers	Frank Lampard	2	30	32	73	75	43
23	Beta test with locals	John Terry	2	30	32	73	75	43
24	Test Hot-Spot identifier	Ricardo Carvalho	2	33	35	73	75	40
25	Gather saftey tips from CPF & SAPS	Callum Hudson-Odoi	1	35	36	75	76	40
26	Translate to isiZulu & English	Cesc Fabregas	1	36	37	76	77	40
27	Review by local health & safety	Andre Schurrle	2	37	39	77	79	40
28	Develop and load tips into app	Micheal Essien	7	39	46	79	86	40
29	Organise Launch Event	Jose Gonzalves	3	46	49	86	89	40
30	Promote via Online Campaigns	Jose Mourinho	3	49	52	89	92	40

(Gido, Clements and Baker, 2018)

(Microsoft,2025a)

Question 5

Group Members:

ST10194321: Jose Gonzalves

ST1034088: Quellon Naicker

Each group member has submitted their own self-reflection and peer evaluation separately in a separate document.

Reference List

Białęcki, H., 2023. *Cross-Platform App Development 101: What Is It and How Does It Work? | Monterail*. Monterail.com. [online] Available at: <https://www.monterail.com/blog/cross-platform-app-development> [Accessed 27 April 2025]

Crime Spotter, 2025. *How it Works*. [online] Available at: <https://crimespotter.co.za/how-it-works/> [Accessed 4 May 2025].

Dlamini, N., 2022. *Crime continues to plague Port Shepstone*. [online] Available at: <https://www.citizen.co.za/south-coast-herald/south-coast-fever/2022/11/17/crime-continues-to-plague-port-shepstone/> [Accessed 1 May 2025].

Draw.io, 2025. *Draw.io.* Version 26.1.1 [Program] Available at: <https://www.drawio.com > [Accessed 1 May 2025]

Gido, J., Clements, J. & Baker, R., 2022. *Successful Project Managment.*[pdf] 2nd ed. Hampshire: Cengage. Available at:<https://advtechonline.sharepoint.com/:b:/s/BCA1_G1_VCKNDN/ETrxilq5lIVHp6dbOUbIG2IB6a_hLt2wxb4C9dhunWqm7Q?e=YVBQU4 > [Accessed 24 April 2025]

GitHub, 2025. *GitHub Issues.* [Website] Available at: <https://github.com/Quellon/ShepSafe/issues> [Accessed 1 May 2025]

Gillis, A., 2022. *What is a Project Charter? Definition and Examples*. SearchCIO. [online] Available at: <https://www.techtarget.com/searchcio/definition/project-charter>.[Accessed 27 April 2025]

Landau, P., 2022. *Improving Your Project Evaluation Process - ProjectManager.com*. ProjectManager.com. [online] Available at: <https://www.projectmanager.com/blog/improving-project-evaluation-process>. [Accessed 30 April 2025]

Mannotra, V., 2023. *How to build Cross-Platform Mobile Apps*. [online] Available at: <https://www.browserstack.com/guide/build-cross-platform-mobile-apps> [Accessed 29 April 2025].

Microsoft, 2025a. *Excel.* Version 15. [Program] Available at: <https://www.microsoft.com/en-za/microsoft-365/excel > [Accessed 4 May 2025]

Microsoft, 2025b. *Microsoft Projects.* Version 2502. [Program] Available at:<https://www.microsoft.com/en-za/microsoft-365/planner/microsoft-project > [Accessed 2 May 2025]

Jasson, W., 2024. *Crime 'wreaking havoc' across SA, says minister*. IOL. [online] Available at: <https://iol.co.za/sunday-tribune/news/2024-09-01-crime-wreaking-havoc-across-sa-says-minister/> [Accessed 30 April 2025].