

INSY6212

Assignment 2

Zebra (Group 7)

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Figure 1:Logo (Looka, [n.d])

Contents

Question 1	3
Question 1.1	3
Question 1.2	4
Question 1.3	6
Question 2	7
Key.....	7
WBS.....	11
Question 3	12
Question 3.1	12
Question 3.2	15
Question 4	27
References	30

Question 1

Question 1.1

A project evaluation form is an institutionalized tool which is used to identify and document the feasibility, scope, and probable impacts of a project before and in the course of its execution (WallStreetMojo, 2023). It gives the stakeholders a chance to study in a systematic way if a project is coherent with strategic objectives, financial resources, and timescale expectations (WallStreetMojo, 2023). The form typically includes spaces for project goals, resources required, potential dangers, expected benefits, and success criteria (WallStreetMojo, 2023).

For our Emergency SOS Services app project, it is important to have a project evaluation form as:

1. **Clarifies project objectives** – It ensures that all the people taking part understand why the app is being developed, such as making the community safer and allowing for rapid response to emergencies.
2. **Facilitates well-informed decision-making** – It supports a formalized cost overview, resources, and expected results, which can be utilized to validate the project and request approval.
3. **Catches potential risks in advance** – Issues like poor network connectivity, cross-platform compatibility, or budget constraint can be realized in advance.
4. **Facilitates resource planning** – It helps establish how many developers, designers, and QA testers will be needed, which will see demand for the project based on its needs.
5. **Serves as a reference point for monitoring and evaluation** – After the project is underway, the evaluation form acts as a reference point when tracking progress toward objectives, milestones, and cost.

Overall, using a project evaluation form for this app project offers formal planning, reduces uncertainty, and ensures the greatest potential for completing the project within time and within budget.

Question 1.2

What is cross-platform development?

Cross-platform development is a method in which one codebase can be run on more than one operating system, such as Android and iOS, through the assistance of integration frameworks like Flutter or React Native (Singh, 2025). It is a time and cost saver in development, offers feature and integration consistency, and is less maintenance-intensive, as changes or corrections are made once (Singh, 2025). For the Emergency SOS Services app, cross-platform development allows both Android and iOS users to enjoy the same features in the same manner, which keeps the project timeline and budget intact.

How will cross-platform development contribute to meeting our project timeline?

Cross-platform development keeps the project timeline extremely short. As the team only needs to write and test one codebase, the development time is shorter than if individual native apps needed to be written (Mărcuță, 2025). All platforms can also be updated, debugged, and feature-added simultaneously, which eliminates delays (Mărcuță, 2025). In terms of the Emergency SOS Services app, this equates to basic features like sending alerts, sharing the location, and notifying emergency contacts being delivered more quickly, allowing the project to meet the 12-month cycle and monthly milestones deadlines comfortably.

For the emergency SOS Services, the potential risks of following the cross-platform development trend for the system in developing and being released is:

Performance Concerns.

Due to different frameworks, there may be a major difficulty in ensuring optimal Application performance in cross-platform development. This is especially so in resource intensive apps compared to the native performance (Suria International Services, 2024). This would require the developers, to be sure to balance the optimization of the efficiency, and the reusability of the code in development. (Suria International Services, 2024)

Security.

Cyberattacks can happen to any software. Cross-platform struggles with this because of small updates; native apps can fix vulnerabilities because small patch frequency (Suria International Services, 2024). This would leave volumes of data in a vulnerable state on non-native platforms; this will be an issue with the Emergency SOS Service System being complaint with any legal parameter with the security when dealing with patient's health information stored on the application. This will require third party tools to be used to tackle this issue. (Suria International Services, 2024)

Compatibility Challenges.

Cross-platform app development encounters compatibility issues across different devices or operating systems versions. We must ensure that the Emergency SOS Service application, can run on a consistent basis with functionality across various hardware and software systems configurations (Cameron, 2024). This must be done to ensure that developers develop APIs that cover different systems to ensure compatibility for all devices. (Cameron, 2024)

For the Emergency SOS Service system, cross-platform development can enhance user experience due to better user accessibility to be able to access the application from any device or operating system making it flexible for the user on what device they access the application from (Edwards, 2024). This also offer a user experience that stays consistent across devices whether it be a mobile app, web app, or desktop, the interface, functionality and performance of the application will remain consistent and uniformly throughout the different devices. (Edwards, 2024)

Question 1.3

Company : Zebra

Project Name: Community Emergency SOS Service System

Project Description: Build an Emergency SOS Service system application for a community resident.

Business Case: Community-driven technology initiative

1. Improve the quality of life for residents.
2. Establish community's tech outreach and our Company as reliable in the engagement space.

Project Deliverables:

1. Project Plan.
2. System Design
3. Application full development.
4. Network Plan deployment.
5. Migrated and tested application.
6. Program documents.

Project Benefits:

1. Boosted reputation
2. Promotion resource

Project Budget: R1 750 000.00

Project Team Members:

Project Manager

Full Stack Developer

Backend Developer

Frontend Developer

Network Engineer

Designer

Systems Architect

Security Engineer

Database Administrator

Deployment Engineer

Question 2

Key

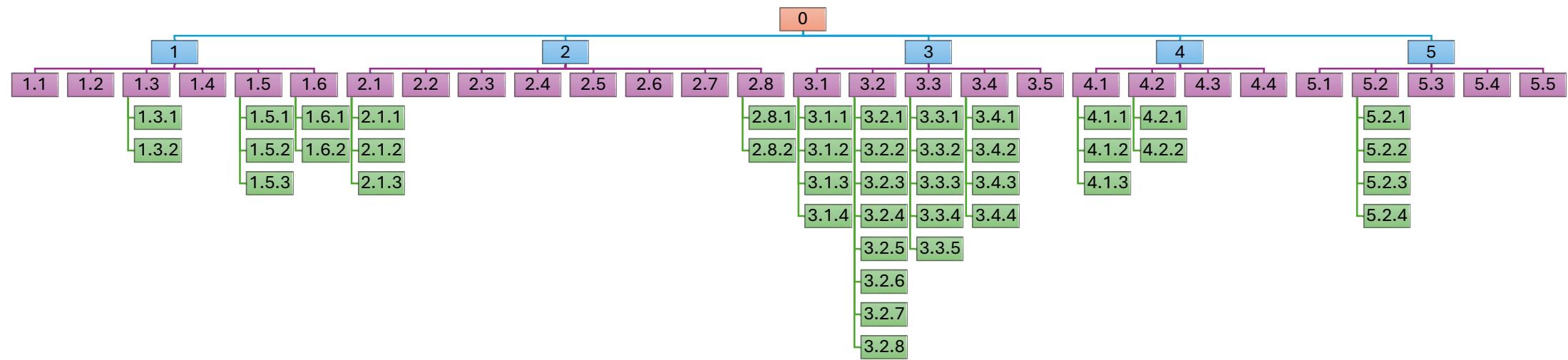
WBS	Task Name	Resource Names	Cost	Milestone
0	Emergency SOS System		R1 406 000,00	No
1	Planning And Analysis		R174 800,00	No
1.1	Identify Problem	Project Manager	R6 400,00	No
1.2	Identify Stakeholders	Project Manager	R6 400,00	No
1.3	Identify Requirements		R74 400,00	No
1.3.1	Identify Functional Requirements	Full Stack Developer, Security Engineer, Systems Architect	R38 400,00	No
1.3.2	Identify Non-Functional Requirements	Designer, Frontend Developer, Systems Architect	R36 000,00	No
1.4	Define Project Scope	Project Manager	R9 600,00	No
1.5	Plan Resources		R44 000,00	No
1.5.1	Hire Staff	Project Manager	R22 400,00	No
1.5.2	Plan Equipment	Systems Architect	R12 000,00	No
1.5.3	Plan Rates	Project Manager	R9 600,00	No
1.6	Create Project Plan		R34 000,00	No
1.6.1	Draft Project Plan	Systems Architect, Project Manager	R22 400,00	No
1.6.2	Liaison With Community And Update Plan To Feedback	Community Testers[1], Project Manager	R11 600,00	Yes
2	Designing		R242 400,00	No
2.1	Create Diagrams		R28 800,00	No
2.1.1	Use Case Diagram	Designer, Systems Architect	R9 600,00	No
2.1.2	UML Class Diagram	Designer, Systems Architect	R9 600,00	No

2.1.3	Activity Diagram	Designer, Systems Architect	R9 600,00	No
2.2	Design User Interface	Designer, Frontend Developer	R33 600,00	No
2.3	Design Database	Database Administrator	R16 800,00	No
2.4	Design Backend Architecture	Backend Developer, Full Stack Developer	R42 000,00	No
2.5	Design Network Architecture and Internet Connection	Network Engineer, Security Engineer	R56 000,00	No
2.6	Ensure Encryption Standard Is Set And Security Practices Are Designed for	Security Engineer	R20 000,00	No
2.7	Ensure Application Complies with Laws	Project Manager	R9 600,00	No
2.8	Design Documentation		R35 600,00	No
2.8.1	Create Design Documentation	Designer, Systems Architect	R24 000,00	No
2.8.2	Liaison With Community And Update Design To Feedback	Community Testers[1], Project Manager	R11 600,00	Yes
3	Development		R471 600,00	No
3.1	Database Development		R34 400,00	No
3.1.1	Create DB and Tables	Database Administrator	R16 800,00	No
3.1.2	Add Constraints	Database Administrator	R7 200,00	No
3.1.3	Insert Test Data	Database Administrator	R4 800,00	No
3.1.4	Merge DB with Main Development Branch After Approval	Database Administrator, Full Stack Developer	R5 600,00	Yes
3.2	Backend Development		R153 200,00	No
3.2.1	Create Classes	Backend Developer	R28 000,00	No
3.2.2	Create Exceptions	Full Stack Developer	R12 800,00	No
3.2.3	Structure Logic	Backend Developer, Systems Architect	R52 000,00	No
3.2.4	Connect to DB	Full Stack Developer	R6 400,00	No

3.2.5	Connect to Emergency Service Provider Contacts	Backend Developer	R14 000,00	No
3.2.6	Enable Emergency Notification Contacts	Backend Developer	R8 400,00	No
3.2.7	Integrate With Cross Platform API	Full Stack Developer	R28 800,00	Yes
3.2.8	Merge Backend with Main Development Branch After Approval	Backend Developer	R2 800,00	Yes
3.3	Frontend Development		R36 000,00	No
3.3.1	Connect to Backend	Full Stack Developer	R6 400,00	No
3.3.2	Develop Layout	Designer, Frontend Developer	R14 400,00	No
3.3.3	Create Navigation	Frontend Developer	R4 800,00	No
3.3.4	Validate Inputs	Frontend Developer	R7 200,00	No
3.3.5	Merge Frontend with Main Development Branch After Approval	Full Stack Developer	R3 200,00	Yes
3.4	Networking		R192 000,00	No
3.4.1	Implement Servers	Network Engineer, Server[1]	R128 000,00	No
3.4.2	Ensure Redundancy And Proper Encryption is In Place	Security Engineer	R20 000,00	No
3.4.3	Connect Application to Internet	Network Engineer	R12 000,00	No
3.4.4	Enable GeoLocation and Ability to Share Location to Emergency Provider	Full Stack Developer	R32 000,00	No
3.5	Finalise Development	Full Stack Developer, Network Engineer, Security Engineer	R56 000,00	Yes
4	Testing		R221 200,00	No
4.1	Alpha Testing		R50 000,00	No
4.1.1	Unit Testing	Backend Developer	R14 000,00	No
4.1.2	Integration Testing	Full Stack Developer	R16 000,00	No

4.1.3	Penetration Testing	Security Engineer	R20 000,00	No
4.2	Beta Testing		R52 000,00	No
4.2.1	Get Beta Users From a Select Group In Community	Project Manager	R32 000,00	No
4.2.2	Beta Users Test System and Gain Feedback	Community Testers[10]	R20 000,00	No
4.3	Fix Issues found	Full Stack Developer, Network Engineer, Security Engineer	R112 000,00	No
4.4	Finalise First Iteration of Program	Systems Architect	R7 200,00	Yes
5	Deployment		R296 000,00	No
5.1	Stage Deployment	Deployment Engineer	R12 000,00	No
5.2	Migrate Systems		R151 200,00	No
5.2.1	Migrate Data to Databases	Database Administrator	R9 600,00	No
5.2.2	Implement New System	Backend Developer, Frontend Developer, Full Stack Developer, Network Engineer, Security Engineer	R65 600,00	No
5.2.3	Beta Deploy	Deployment Engineer	R12 000,00	No
5.2.4	Gain Feedback And Update	Full Stack Developer	R64 000,00	No
5.3	Deploy To Public	Deployment Engineer	R16 800,00	Yes
5.4	Monitor And Maintain Application	Backend Developer, Full Stack Developer, Security Engineer	R100 000,00	No
5.5	Document Program For Maintenance And Update	Project Manager	R16 000,00	Yes

WBS



Question 3

Question 3.1

	WBS	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	Milestone
0	0	▪ Emergency SOS System	277 days	Wed 25/01/01	Thu 26/01/22			R1 406 000,00	No
1	1	▪ Planning And Analysis	33 days	Wed 25/01/01	Fri 25/02/14			R174 800,00	No
2	1.1	Identify Problem	2 days	Wed 25/01/01	Thu 25/01/02		Project Manager	R6 400,00	No
3	1.2	Identify Stakeholders	2 days	Fri 25/01/03	Mon 25/01/06	2	Project Manager	R6 400,00	No
4	1.3	▪ Identify Requirements	9 days	Tue 25/01/07	Fri 25/01/17	3		R74 400,00	No
5	1.3.1	Identify Functional Requirements	4 days	Tue 25/01/07	Fri 25/01/10	3	Full Stack Developer,Security Engineer, Systems Architect	R38 400,00	No
6	1.3.2	Identify Non-Functional Requirements	5 days	Mon 25/01/13	Fri 25/01/17	5	Designer,Frontend Developer, Systems Architect	R36 000,00	No
7	1.4	Define Project Scope	3 days	Mon 25/01/20	Wed 25/01/22	4	Project Manager	R9 600,00	No
8	1.5	▪ Plan Resources	10 days	Thu 25/01/23	Wed 25/02/05	7		R44 000,00	No
9	1.5.1	Hire Staff	7 days	Thu 25/01/23	Fri 25/01/31	7	Project Manager	R22 400,00	No
10	1.5.2	Plan Equipment	5 days	Thu 25/01/23	Wed 25/01/29	7	Systems Architect	R12 000,00	No
11	1.5.3	Plan Rates	3 days	Mon 25/02/03	Wed 25/02/05	9,10	Project Manager	R9 600,00	No
12	1.6	▪ Create Project Plan	7 days	Thu 25/02/06	Fri 25/02/14	8		R34 000,00	No
13	1.6.1	Draft Project Plan	4 days	Thu 25/02/06	Tue 25/02/11	8	Systems Architect,Project Manager	R22 400,00	No
14	1.6.2	Liaison With Community And Update Plan To Feedback	3 days	Wed 25/02/12	Fri 25/02/14	13	Community Testers[1],Project Manager	R11 600,00	Yes

	WBS	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	Milestone
15	2	▪ Designing	50 days	Mon 25/02/17	Fri 25/04/25	1		R242 400,00	No
16	2.1	▪ Create Diagrams	6 days	Mon 25/02/17	Mon 25/02/24	1		R28 800,00	No
17	2.1.1	Use Case Diagram	2 days	Mon 25/02/17	Tue 25/02/18	1	Designer,Systems Architect	R9 600,00	No
18	2.1.2	UML Class Diagram	2 days	Wed 25/02/19	Thu 25/02/20	17	Designer,Systems Architect	R9 600,00	No
19	2.1.3	Activity Diagram	2 days	Fri 25/02/21	Mon 25/02/24	18	Designer,Systems Architect	R9 600,00	No
20	2.2	Design User Interface	7 days	Tue 25/02/25	Wed 25/03/05	16	Designer,Frontend Developer	R33 600,00	No
21	2.3	Design Database	7 days	Thu 25/03/06	Fri 25/03/14	20	Database Administrator	R16 800,00	No
22	2.4	Design Backend Architecture	7 days	Mon 25/03/17	Tue 25/03/25	21	Backend Developer,Full Stack Developer	R42 000,00	No
23	2.5	Design Network Architecture and Internet Connection	7 days	Wed 25/03/26	Thu 25/04/03	22	Network Engineer,Security Engineer	R56 000,00	No
24	2.6	Ensure Encryption Standard Is Set And Security Practices Are Designed for	5 days	Fri 25/04/04	Thu 25/04/10	23	Security Engineer	R20 000,00	No
25	2.7	Ensure Application Complies with Laws	3 days	Fri 25/04/11	Tue 25/04/15	24	Project Manager	R9 600,00	No
26	2.8	▪ Design Documentation	8 days	Wed 25/04/16	Fri 25/04/25	25		R35 600,00	No
27	2.8.1	Create Design Documentation	5 days	Wed 25/04/16	Tue 25/04/22	25	Designer,Systems Architect	R24 000,00	No
28	2.8.2	Liaison With Community And Update Design To Feedback	3 days	Wed 25/04/23	Fri 25/04/25	27	Community Testers[1],Project Manager	R11 600,00	Yes

	WBS	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	Milestone
29	3	▪ Development	86 days	Mon 25/04/28	Mon 25/08/25	15		R471 600,00	No
30	3.1	▪ Database Development	13 days	Mon 25/04/28	Wed 25/05/14	15		R34 400,00	No
31	3.1.1	Create DB and Tables	7 days	Mon 25/04/28	Tue 25/05/06	15	Database Administrator	R16 800,00	No
32	3.1.2	Add Constraints	3 days	Wed 25/05/07	Fri 25/05/09	31	Database Administrator	R7 200,00	No
33	3.1.3	Insert Test Data	2 days	Mon 25/05/12	Tue 25/05/13	32	Database Administrator	R4 800,00	No
34	3.1.4	Merge DB with Main Development Branch After Approval	1 day	Wed 25/05/14	Wed 25/05/14	33	Database Administrator, Full Stack Developer	R5 600,00	Yes
35	3.2	▪ Backend Development	32 days	Thu 25/05/15	Fri 25/06/27	30		R153 200,00	No
36	3.2.1	Create Classes	10 days	Thu 25/05/15	Wed 25/05/28	30	Backend Developer	R28 000,00	No
37	3.2.2	Create Exceptions	4 days	Thu 25/05/15	Tue 25/05/20	30	Full Stack Developer	R12 800,00	No
38	3.2.3	Structure Logic	10 days	Thu 25/05/29	Wed 25/06/11	36,37	Backend Developer, Systems Architect	R52 000,00	No
39	3.2.4	Connect to DB	2 days	Thu 25/06/12	Fri 25/06/13	38	Full Stack Developer	R6 400,00	No
40	3.2.5	Connect to Emergency Service Provider Contacts	5 days	Mon 25/06/16	Fri 25/06/20	39	Backend Developer	R14 000,00	No
41	3.2.6	Enable Emergency Notification Contacts	3 days	Mon 25/06/23	Wed 25/06/25	40	Backend Developer	R8 400,00	No
42	3.2.7	Integrate With Cross Platform API	9 days	Mon 25/06/16	Thu 25/06/26	39	Full Stack Developer	R28 800,00	Yes
43	3.2.8	Merge Backend with Main Development Branch After Approval	1 day	Fri 25/06/27	Fri 25/06/27	40,42	Backend Developer	R2 800,00	Yes
44	3.3	▪ Frontend Development	11 days	Mon 25/06/30	Mon 25/07/14	35		R36 000,00	No
45	3.3.1	Connect to Backend	2 days	Mon 25/06/30	Tue 25/07/01	35	Full Stack Developer	R6 400,00	No
46	3.3.2	Develop Layout	3 days	Wed 25/07/02	Fri 25/07/04	45	Designer, Frontend Developer	R14 400,00	No
47	3.3.3	Create Navigation	2 days	Mon 25/07/07	Tue 25/07/08	46	Frontend Developer	R4 800,00	No
48	3.3.4	Validate Inputs	3 days	Wed 25/07/09	Fri 25/07/11	47	Frontend Developer	R7 200,00	No
49	3.3.5	Merge Frontend with Main Development Branch After Approval	1 day	Mon 25/07/14	Mon 25/07/14	48	Full Stack Developer	R3 200,00	Yes
50	3.4	▪ Networking	25 days	Tue 25/07/15	Mon 25/08/18	44		R192 000,00	No
51	3.4.1	Implement Servers	7 days	Tue 25/07/15	Wed 25/07/23	44	Network Engineer, Server[1]	R128 000,00	No
52	3.4.2	Ensure Redundancy And Proper Encryption is In Place	5 days	Thu 25/07/24	Wed 25/07/30	51	Security Engineer	R20 000,00	No
53	3.4.3	Connect Application to Internet	3 days	Thu 25/07/31	Mon 25/08/04	52	Network Engineer	R12 000,00	No
54	3.4.4	Enable GeoLocation and Ability to Share Location to Emergency Provider	10 days	Tue 25/08/05	Mon 25/08/18	51,53	Full Stack Developer	R32 000,00	No
55	3.5	Finalise Development	5 days	Tue 25/08/19	Mon 25/08/25	50	Full Stack Developer, Network Engineer, Se	R56 000,00	Yes

	WBS	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	Milestone
56	4	▪ Testing	48 days	Tue 25/08/26	Thu 25/10/30	29		R221 200,00	No
57	4.1	▪ Alpha Testing	15 days	Tue 25/08/26	Mon 25/09/15	29		R50 000,00	No
58	4.1.1	Unit Testing	5 days	Tue 25/08/26	Mon 25/09/01	29	Backend Developer	R14 000,00	No
59	4.1.2	Integration Testing	5 days	Tue 25/09/02	Mon 25/09/08	58	Full Stack Developer	R16 000,00	No
60	4.1.3	Penetration Testing	5 days	Tue 25/09/09	Mon 25/09/15	59	Security Engineer	R20 000,00	No
61	4.2	▪ Beta Testing	20 days	Tue 25/09/16	Mon 25/10/13	57		R52 000,00	No
62	4.2.1	Get Beta Users From a Select Group In Community	10 days	Tue 25/09/16	Mon 25/09/29	57	Project Manager	R32 000,00	No
63	4.2.2	Beta Users Test System and Gain Feedback	10 days	Tue 25/09/30	Mon 25/10/13	62	Community Testers[10]	R20 000,00	No
64	4.3	Fix Issues found	10 days	Tue 25/10/14	Mon 25/10/27	61	Full Stack Developer, Network Engineer, Security Engineer	R112 000,00	No
65	4.4	Finalise First Iteration of Program	3 days	Tue 25/10/28	Thu 25/10/30	64	Systems Architect	R7 200,00	Yes

	WBS	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	Milestone
66	5	▪ Deployment	60 days	Fri 25/10/31	Thu 26/01/22	56		R296 000,00	No
67	5.1	Stage Deployment	5 days	Fri 25/10/31	Thu 25/11/06	56	Deployment Engineer	R12 000,00	No
68	5.2	▪ Migrate Systems	33 days	Fri 25/11/07	Tue 25/12/23	67		R151 200,00	No
69	5.2.1	Migrate Data to Databases	4 days	Fri 25/11/07	Wed 25/11/12	67	Database Administrator	R9 600,00	No
70	5.2.2	Implement New System	4 days	Thu 25/11/13	Tue 25/11/18	69	Backend Developer, Frontend Developer, Full Stack Developer, Network Engineer, Security Engineer	R65 600,00	No
71	5.2.3	Beta Deploy	5 days	Wed 25/11/19	Tue 25/11/25	69,70	Deployment Engineer	R12 000,00	No
72	5.2.4	Gain Feedback And Update	20 days	Wed 25/11/26	Tue 25/12/23	71	Full Stack Developer	R64 000,00	No
73	5.3	Deploy To Public	7 days	Wed 25/12/24	Thu 26/01/01	68	Deployment Engineer	R16 800,00	Yes
74	5.4	Monitor And Maintain Application	10 days	Fri 26/01/02	Thu 26/01/15	73	Backend Developer, Full Stack Developer, Security Engineer	R100 000,00	No
75	5.5	Document Program For Maintenance And Update	5 days	Fri 26/01/16	Thu 26/01/22	74	Project Manager	R16 000,00	Yes

	Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue	Base
1	Project Manager	Work		PM		100%	R400,00/hr	R0,00/hr	R0,00	Prorated	Standard
2	Full Stack Developer	Work		FSD		100%	R400,00/hr	R0,00/hr	R0,00	Prorated	Standard
3	Backend Developer	Work		BD		100%	R350,00/hr	R0,00/hr	R0,00	Prorated	Standard
4	Frontend Developer	Work		FD		100%	R300,00/hr	R0,00/hr	R0,00	Prorated	Standard
5	Network Engineer	Work		NE		100%	R500,00/hr	R0,00/hr	R0,00	Prorated	Standard
6	Designer	Work		D		100%	R300,00/hr	R0,00/hr	R0,00	Prorated	Standard
7	Systems Architect	Work		SA		100%	R300,00/hr	R0,00/hr	R0,00	Prorated	Standard
8	Community Testers	Material		CT			R2 000,00			R0,00	Prorated
9	Security Engineer	Work		SE		100%	R500,00/hr	R0,00/hr	R0,00	Prorated	Standard
10	Server	Material		S			R100 000,00			R0,00	Prorated
11	Database Administrator	Work		DA		100%	R300,00/hr	R0,00/hr	R0,00	Prorated	Standard
12	Deployment Engineer	Work		D		100%	R300,00/hr	R0,00/hr	R0,00	Prorated	Standard

Question 3.2

<https://github.com/Lungelo21/INSY6212-A2-Group-7>

The screenshot shows a list of 12 open issues on a GitHub repository. Each issue is represented by a card with the following details:

Issue Title	Labels	Comments	Milestone	Assignee
Issue Regarding Monitoring and Maintaining Application	documentation, feedback, iteration	#12 - KhumoRatsana opened 13 hours ago	Milestone 10: Do...	
Issue Regarding System Migrations	deployment, documentation	#11 - KhumoRatsana opened 13 hours ago	Milestone 9: Dep...	
Issue Regarding Fixing Issues Found	development, iteration	#10 - KhumoRatsana opened 14 hours ago	Milestone 8: Fina...	
Issue Regarding the Enabling of Geolocation and ability to share location	development, iteration	#9 - KhumoRatsana opened 14 hours ago	Milestone 7: Fina...	
Issue Regarding Input Validation	development, frontend, integration	#8 - KhumoRatsana opened 14 hours ago	Milestone 6: Mer...	
Issue Regarding Integrating with Cross Platform API	backend, development, integration	#7 - KhumoRatsana opened 15 hours ago	Milestone 5: Mer...	
Issue Regarding Connection to Emergency Service Provider Contacts	backend, development, integration	#6 - KhumoRatsana opened 15 hours ago	Milestone 5: Mer...	
Issue Regarding Connection to Database	backend, frontend, integration	#5 - KhumoRatsana opened 15 hours ago	Milestone 4: Inte...	
Issue Regarding Test Data Insertion	database, development, integration	#4 - KhumoRatsana opened 15 hours ago	Milestone 3: Mer...	
Issue Regarding Creating and Designing Documentation	documentation, frontend	#3 - KhumoRatsana opened 15 hours ago	Milestone 2: Liais...	
Issue Regarding Drafting a project plan	documentation, feedback, Planning	#2 - KhumoRatsana opened 16 hours ago	Milestone 1: Liais...	

Issue Regarding Test Data Insertion #4

[Edit](#)[New issue](#)[Open](#)

KhumoRatsoana opened 15 hours ago

Collaborator ...

- Poor Data Realism
- The use of overly simplistic or unrealistic data can fail to simulate real-world scenarios, leading to missed bugs.

[Create sub-issue](#)

KhumoRatsoana added this to the [Milestone 3: Merge Database with Main Development Branch After Approval](#) milestone 15 hours ago

KhumoRatsoana assigned [Lungelo21](#) and [ST10450036](#) 15 hours ago

KhumoRatsoana added [database](#), [integration](#), [development](#) 15 hours ago



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Labels

[database](#) [development](#) [integration](#)

Projects

No projects



Milestone

[Milestone 3: Merge Database with Main Development Branch After Approval](#)

No due date



Relationships

None yet



Development

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Issue Regarding Connection to Database #5

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KhumoRatoana opened 15 hours ago

Collaborator [...](#)

- Incorrect Configuration
- Mistyped connection strings, wrong ports, and missing credentials is blocking access.

[Create sub-issue](#) [...](#)

KhumoRatoana added this to the [Milestone 4: Integrate with Cross Platform API](#) milestone 15 hours ago

KhumoRatoana assigned [ST10439763](#) 15 hours ago

KhumoRatoana added [backend](#) [frontend](#) [integration](#) 15 hours ago

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Assignees [ST10439763](#)

Labels [backend](#) [frontend](#) [integration](#)

Projects No projects

Milestone [Milestone 4: Integrate with Cross Platform API](#) No due date

Relationships None yet

Development [Code with agent mode](#)

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Issue Regarding Connection to Emergency Service Provider Contacts #6

[Edit](#)[New issue](#)[Open](#)

KhumoRatsoana opened 15 hours ago

Collaborator ...

- Data Accuracy and Synchronization
- Outdated or incorrect contact details such as phone numbers, dispatch centers is delaying critical response times.

[Create sub-issue](#)

KhumoRatsoana added this to the [Milestone 5: Merge Backend with Main Development Branch After Approval](#) milestone 15 hours ago

KhumoRatsoana assigned [Chris102401](#), [KhumoRatsoana](#) and [ST10439763](#) 15 hours ago

KhumoRatsoana added [backend](#), [integration](#), [development](#) 15 hours ago



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Assignees

Chris102401

KhumoRatsoana

ST10439763



Labels

[backend](#) [development](#) [integration](#)

Projects

No projects



Milestone

Milestone 5: Merge Backend with Main Development Branch After Approval

No due date



Relationships

None yet



Development

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Issue Regarding Integrating with Cross Platform API #7

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KhumoRatsoana opened 15 hours ago

Collaborator ...

- Inconsistent Behavior Across Platforms
- APIs are behaving differently on Windows vs. macOS, due to OS-level constraints or SDK differences

[Create sub-issue](#)

KhumoRatsoana added this to the [Milestone 5: Merge Backend with Main Development Branch After Approval](#) milestone 15 hours ago

KhumoRatsoana assigned [Lungelo21](#), [ST10439763](#) and [ST10450036](#) 15 hours ago

KhumoRatsoana added [backend](#), [integration](#), [development](#) 15 hours ago

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Assignees

[Lungelo21](#)[ST10439763](#)[ST10450036](#)

Labels

[backend](#) [development](#) [integration](#)

Projects

No projects



Milestone

[Milestone 5: Merge Backend with Main Development Branch After Approval](#)

No due date



Relationships

None yet



Development

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Issue Regarding Input Validation #8

Edit New issue 

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KhumoRatsoana opened 14 hours ago

Collaborator ...

- Missing Validation Rules
- Did not check for required fields, formats, or ranges which lead to null values, broken logic, and database errors.

Create sub-issue 



 KhumoRatsoana added this to the [Milestone 6: Merge Frontend with Main Development Branch After Approval](#) milestone 14 hours ago

 KhumoRatsoana self-assigned this 14 hours ago

 KhumoRatsoana added [frontend](#) [integration](#) [development](#) 14 hours ago



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Assignees

 KhumoRatsoana



Labels

[development](#) [frontend](#) [integration](#)



Projects

No projects



Milestone

 [Milestone 6: Merge Frontend with Main Development Branch After Approval](#)

No due date



Relationships

None yet



Development

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Issue Regarding the Enabling of Geolocation and ability to share location #9

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KhumoRatoana opened 14 hours ago [Collaborator](#) [...](#)

- Privacy Concerns
- Sharing location data especially in real time can expose users to risks if not properly secured or controlled.

[Create sub-issue](#) [...](#)

[Milestone 7: Finalize Development](#)

[Chris102401](#) and [Lungelo21](#)

[iteration](#) [development](#)

No projects

[Milestone 7: Finalize Development](#)

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Issue Regarding Fixing Issues Found #10

[Open](#)

 **KhumoRatsoana** opened 14 hours ago Collaborator ...

-Required fixes still unresolved

[Create sub-issue](#) [...](#)

 **KhumoRatsoana** added this to the [Milestone 8: Finalize first Iteration of Program](#) milestone 14 hours ago

 **KhumoRatsoana** assigned [KhumoRatsoana](#), [Lungelo21](#) and [ST10450036](#) 14 hours ago

 **KhumoRatsoana** added [iteration](#) [development](#) 14 hours ago

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Assignees [KhumoRatsoana](#) [Lungelo21](#) [ST10450036](#)

Labels [development](#) [iteration](#)

Projects No projects

Milestone [Milestone 8: Finalize first Iteration of Program](#) No due date

Relationships None yet

Development [Code with agent mode](#)

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Issue Regarding System Migrations #11

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KhumoRatsoana opened 14 hours ago

Collaborator ...

- Downtime and Disruption
- Migration wasn't carefully timed or staged, which can interrupt business operations and frustrate users.

[Create sub-issue](#)

KhumoRatsoana added this to the [Milestone 9: Deploy to public](#) milestone 14 hours ago

KhumoRatsoana assigned [Lungelo21](#), [ST10439763](#) and [ST10450036](#) 14 hours ago

KhumoRatsoana added [documentation](#) and [deployment](#) 14 hours ago



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Assignees

[Lungelo21](#)[ST10439763](#)[ST10450036](#)

Labels

[deployment](#) [documentation](#)

Projects

No projects



Milestone

[Milestone 9: Deploy to public](#)

No due date



Relationships

None yet



Development

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Issue Regarding Monitoring and Maintaining Application #12

[Open](#)



KhumoRatsoana opened 14 hours ago

- Lack of Real-Time Visibility
- Lack of proper logging and monitoring tools, cause the critical errors to be missed, as well as performance bottlenecks, or security breaches until users complain.

[Create sub-issue](#)



KhumoRatsoana added this to the [Milestone 10: Document Program for Maitane and Update](#) milestone [14 hours ago](#)

KhumoRatsoana assigned [Chris102401](#) and [KhumoRatsoana](#) [14 hours ago](#)

KhumoRatsoana added [documentation](#) [iteration](#) [feedback](#) [14 hours ago](#)



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Chris102401

KhumoRatsoana

Labels

documentation feedback iteration

Projects

No projects

Milestone

Milestone 10: Document Program for Maitane and Update

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None yet

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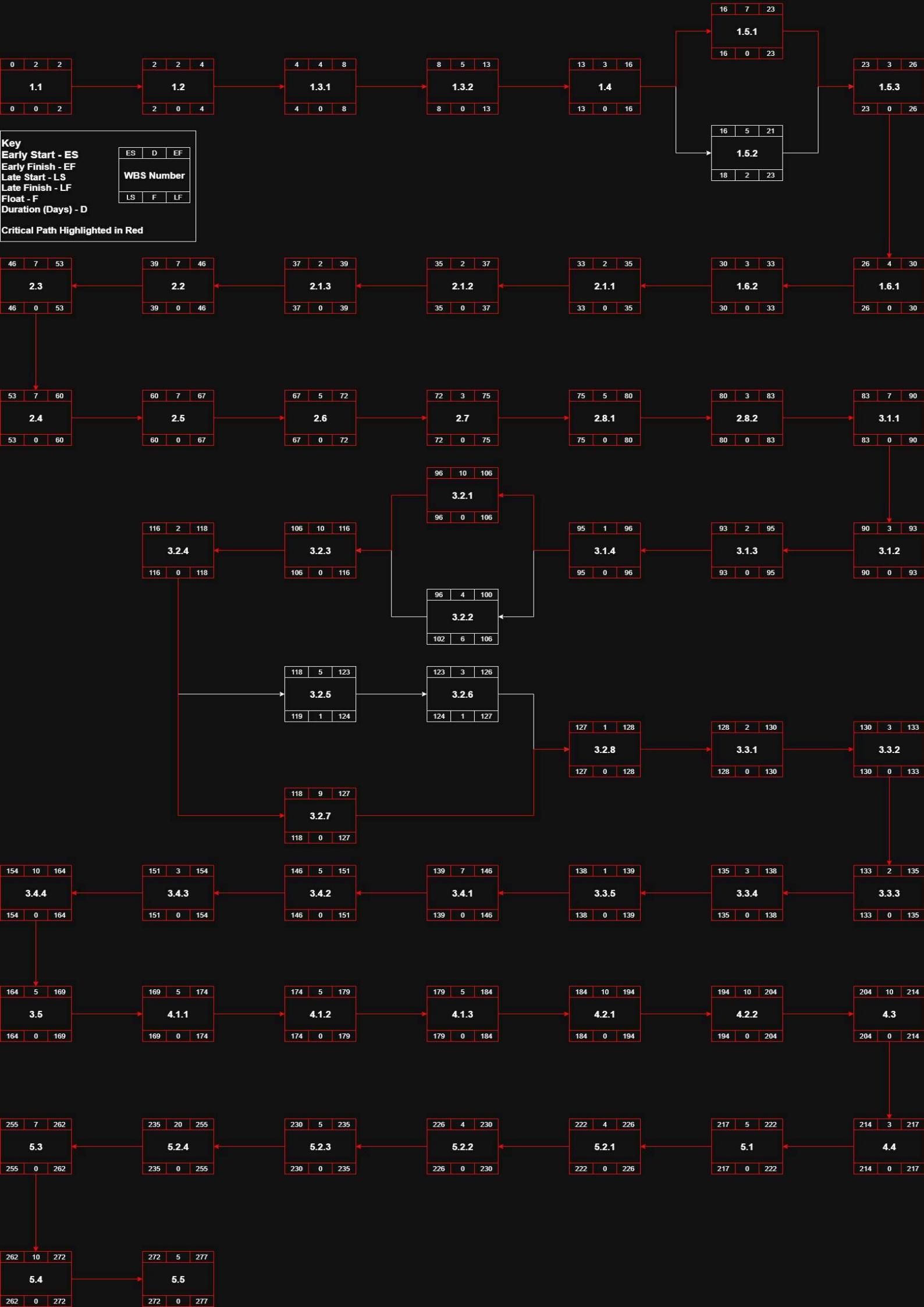
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Question 4

KEY

WBS	TITLE
0	Emergency SOS System
1	Planning And Analysis
1.1	Identify Problem
1.2	Identify Stakeholders
1.3	Identify Requirements
1.3.1	Identify Functional Requirements
1.3.2	Identify Non-Functional Requirements
1.4	Define Project Scope
1.5	Plan Resources
1.5.1	Hire Staff
1.5.2	Plan Equipment
1.5.3	Plan Rates
1.6	Create Project Plan
1.6.1	Draft Project Plan
1.6.2	Liaison With Community And Update Plan To Feedback
2	Designing
2.1	Create Diagrams
2.1.1	Use Case Diagram
2.1.2	UML Class Diagram
2.1.3	Activity Diagram
2.2	Design User Interface
2.3	Design Database
2.4	Design Backend Architecture
2.5	Design Network Architecture and Internet Connection
2.6	Ensure Encryption Standard Is Set And Security Practices Are Designed for
2.7	Ensure Application Complies with Laws
2.8	Design Documentation
2.8.1	Create Design Documentation
2.8.2	Liaison With Community And Update Design To Feedback
3	Development
3.1	Database Development
3.1.1	Create DB and Tables
3.1.2	Add Constraints
3.1.3	Insert Test Data
3.1.4	Merge DB with Main Development Branch After Approval
3.2	Backend Development
3.2.1	Create Classes
3.2.2	Create Exceptions
3.2.3	Structure Logic
3.2.4	Connect to DB
3.2.5	Connect to Emergency Service Provider Contacts
3.2.6	Enable Emergency Notification Contacts

3.2.7	Integrate With Cross Platform API
3.2.8	Merge Backend with Main Development Branch After Approval
3.3	Frontend Development
3.3.1	Connect to Backend
3.3.2	Develop Layout
3.3.3	Create Navigation
3.3.4	Validate Inputs
3.3.5	Merge Frontend with Main Development Branch After Approval
3.4	Networking
3.4.1	Implement Servers
3.4.2	Ensure Redundancy And Proper Encryption is In Place
3.4.3	Connect Application to Internet
3.4.4	Enable GeoLocation and Ability to Share Location to Emergency Provider
3.5	Finalise Development
4	Testing
4.1	Alpha Testing
4.1.1	Unit Testing
4.1.2	Intergration Testing
4.1.3	Penetration Testing
4.2	Beta Testing
4.2.1	Get Beta Users From a Select Group In Community
4.2.2	Beta Users Test System and Gain Feedback
4.3	Fix Issues found
4.4	Finalise First Iteration of Program
5	Deployment
5.1	Stage Deployment
5.2	Migrate Systems
5.2.1	Migrate Data to Databases
5.2.2	Implement New System
5.2.3	Beta Deploy
5.2.4	Gain Feedback And Update
5.3	Deploy To Public



References

- Cameron, L., 2024. *Cross-Platform App Development: Advantages and Disadvantages*. [Online] Available at: <https://www.warpdevelopment.com/cross-platform-app-development-advantages-and-disadvantages/> [Accessed 29 Septemeber 2025].
- Edwards, S., 2024. *How cross-platform integration is improving UX*. [Online] Available at: <https://www.sherwen.com/insights/the-role-of-cross-platform-integration-in-improving-ux> [Accessed 29 September 2025].
- Looka, [n.d]. *Logo Maker*. [Online] Available at: <https://looka.com/logo-maker/> [Accessed 1 October 2025].
- Mărcuță, C., 2025. *Exploring the Limitations and Potentials of Cross-Platform Development - A Comprehensive Guide*. [Online] Available at: <https://moldstud.com/articles/p-exploring-the-limitations-and-potentials-of-cross-platform-development-a-comprehensive-guide> [Accessed 22 September 2025].
- Singh, M. P., 2025. *Top 7 Ways Cross-Platform App Development Saves Costs*. [Online] Available at: <https://engineerbabu.com/blog/how-cross-platform-app-development-saves-costs/#:~:text=Cross-platform%20app%20development%20has%20become%20a%20strategic%20approach,by%20utilizing%20a%20single%20codebase%20across%20multiple%20platforms> [Accessed 22 September 2025].
- Suria International Services, 2024. *Top 10 Challenges of Cross-platform Application Development*. [Online] Available at: <https://www.suriinternational.com/top-10-challenges-of-cross-platform-app-development/> [Accessed 29 September 2025].
- WallStreetMojo, 2023. *Project Evaluation*. [Online] Available at: <https://www.wallstreetmojo.com/project-evaluation/> [Accessed 22 September 2025].