MediSafe – Stay away and defeat diseases

2022-143

Life with Covid-19

Team members

Supervisor : Mr. Ravi Supunya

Co- supervisor: Mr. Samantha Rajapaksha

External Supervisor : Dr. Shashika Liyanage

Student name	**Registration number**
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Senanayaka S.A.M.A.B.M	IT19011608

Introduction

- What is COVID-19?
- Why we focus about this research?

Rapid antigen test

PCR test

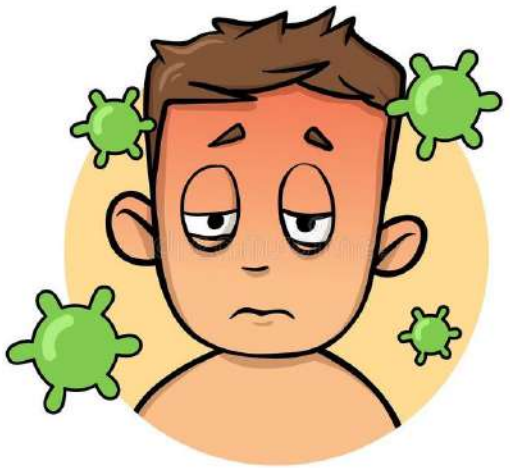
Meeting a doctor

Symptoms

CoviSafe

Research problem

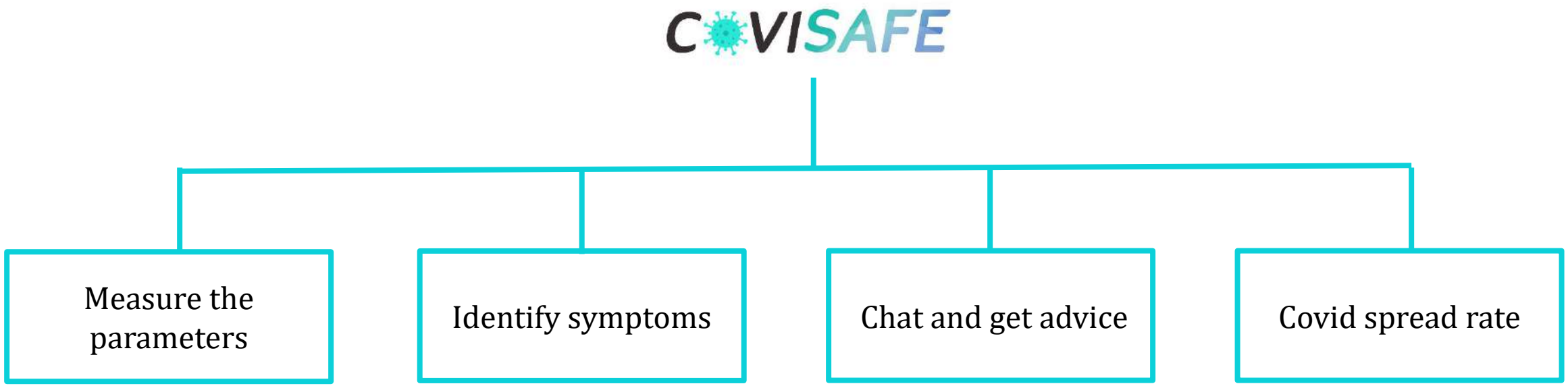
- The virus is spreading rapidly.
- The cost is high to diagnose.
- More time to deliver results.
- No way to quickly identify disease.
- No way to get more details regarding the Information.



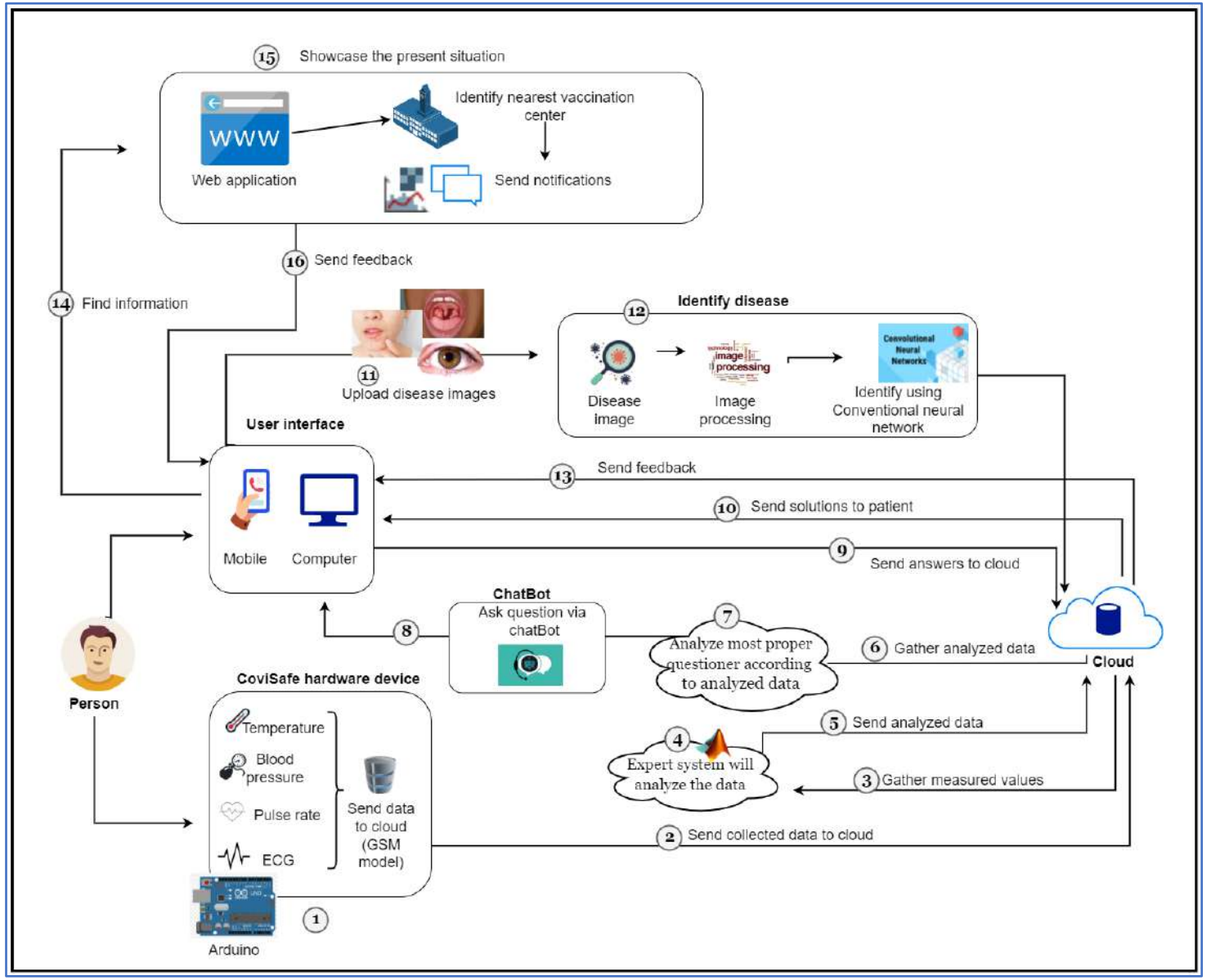
Main objective

Provide the user with the ability to track the outcomes of their measurements monitoring and get the help they need from the comfort of anywhere.

Sub objectives



Overall system diagram



IT18077698

Thennakoon T.M.B.C.K

Specializing in Information Technology

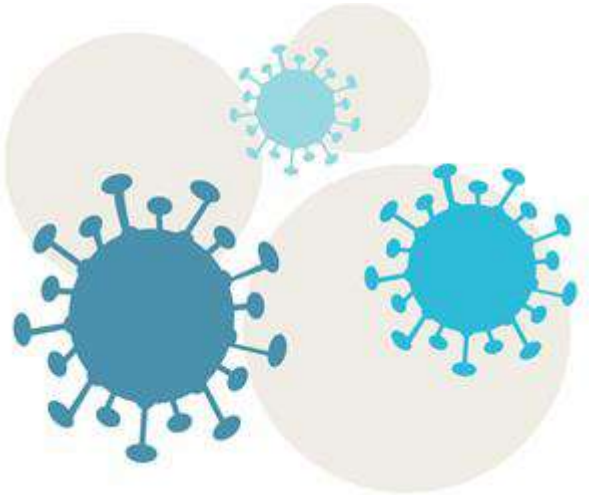
Introduction

Background

Research gap

Research problem

Objectives



Background

- When a person is affected with Covid 19,

- It is of vital importance to calculate the risk of disease and decide whether he can stay at home or should admit to a hospital for medication.

Research gap

Due to the spread of Covid-19, people did not have adequate equipment in their homes to know their current status. Therefore,

- How we know the level of our body symptoms ?
- What we have to do to know results?
- How we clarify the result?

Research	Features			
	Identify all measurements single device	Provide value with result	Process measured data	Sensors with IT
Research A	✗	✓	✗	✓
Research B	✗	✗	✓	✗
CoviSafe	✓	✓	✓	✓

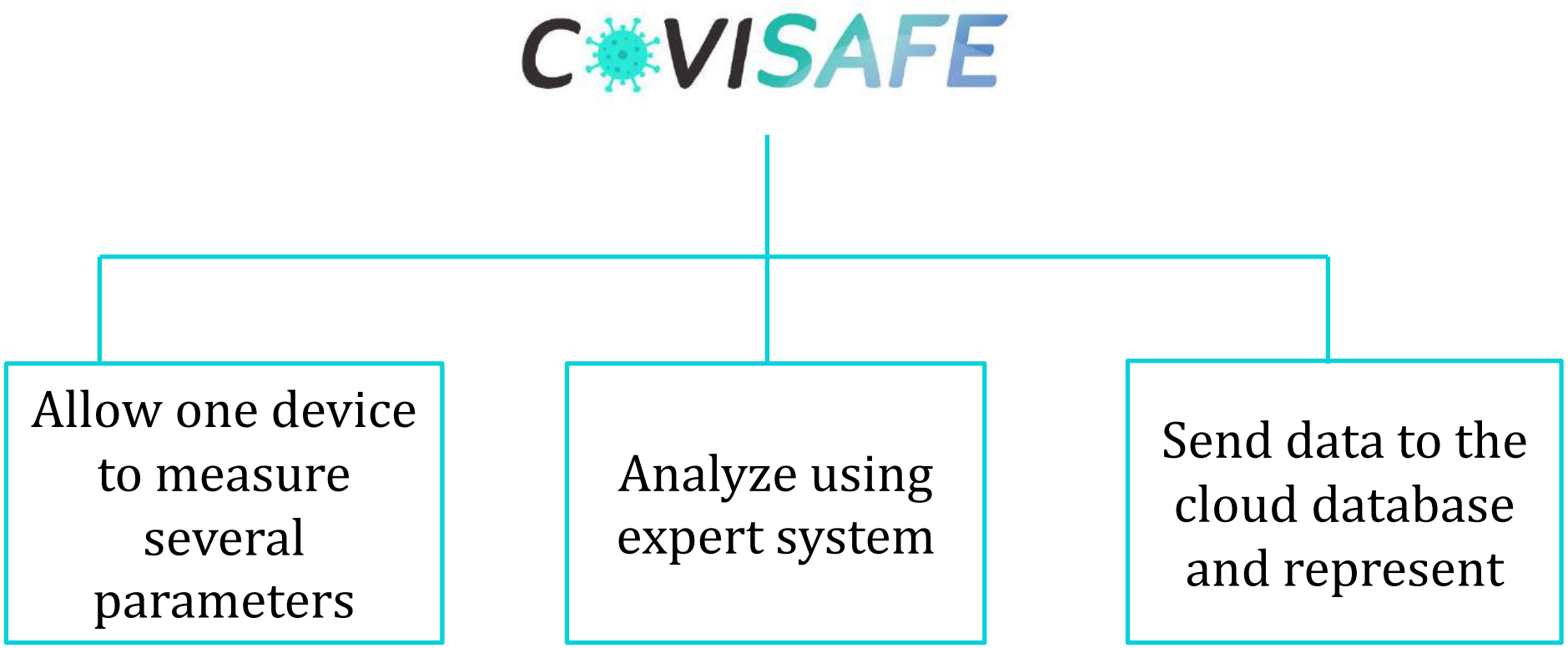
Research problem

- Covid-19 testing cost is high.
- Doctors became extremely busy.
- Get more time to provide reports.
- No way to gather the collected data for a one system.

Main objective

Create a user-friendly device for cost effective, portable monitoring system for Covid-19.

Sub objective



Methodology

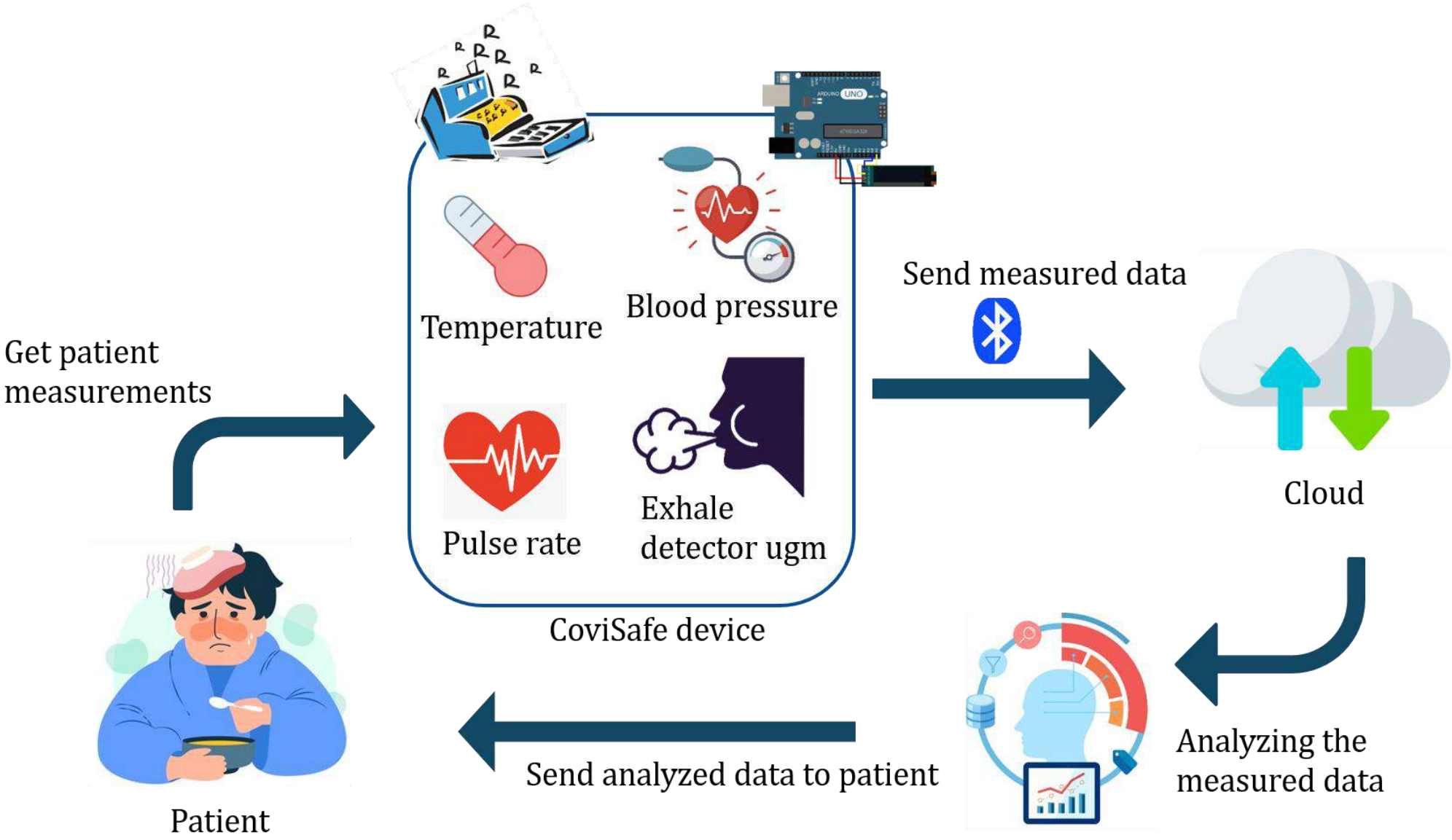
a. System diagram

b. Technologies

c. Requirements

d. Gantt chart

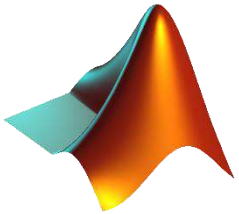
System diagram



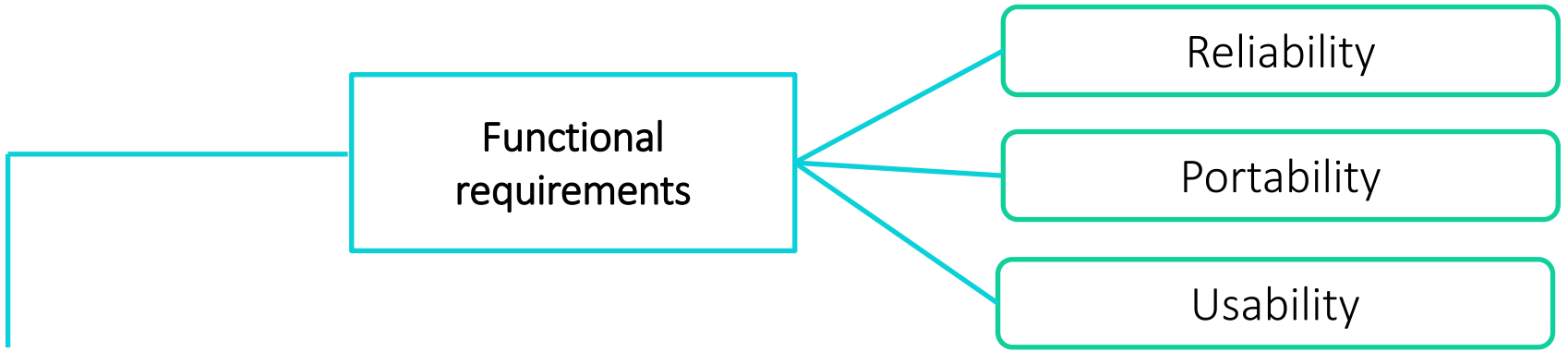
Technologies

- C Programming
- MATLAB software
- Propagation algorithm
- ESP32

PROGRAMMING



Requirements



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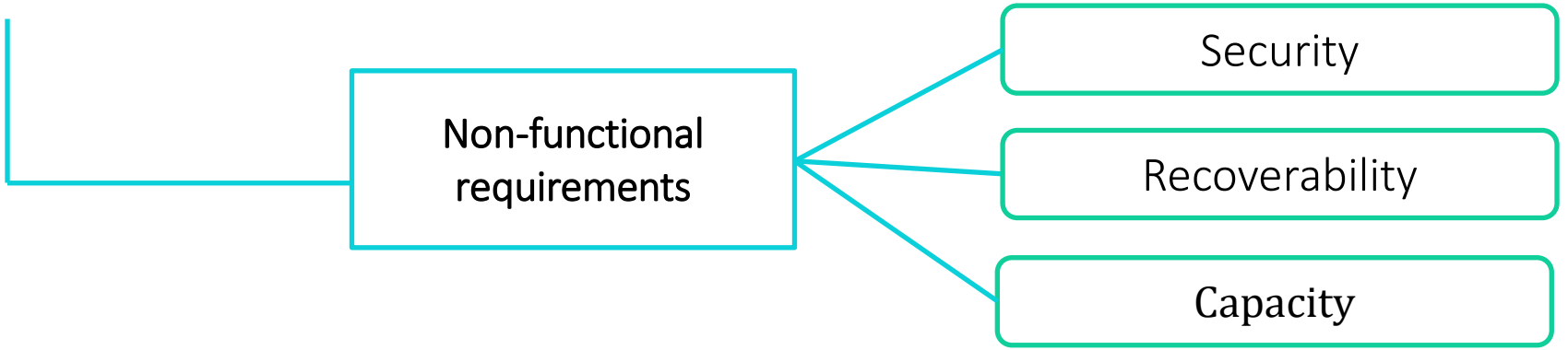
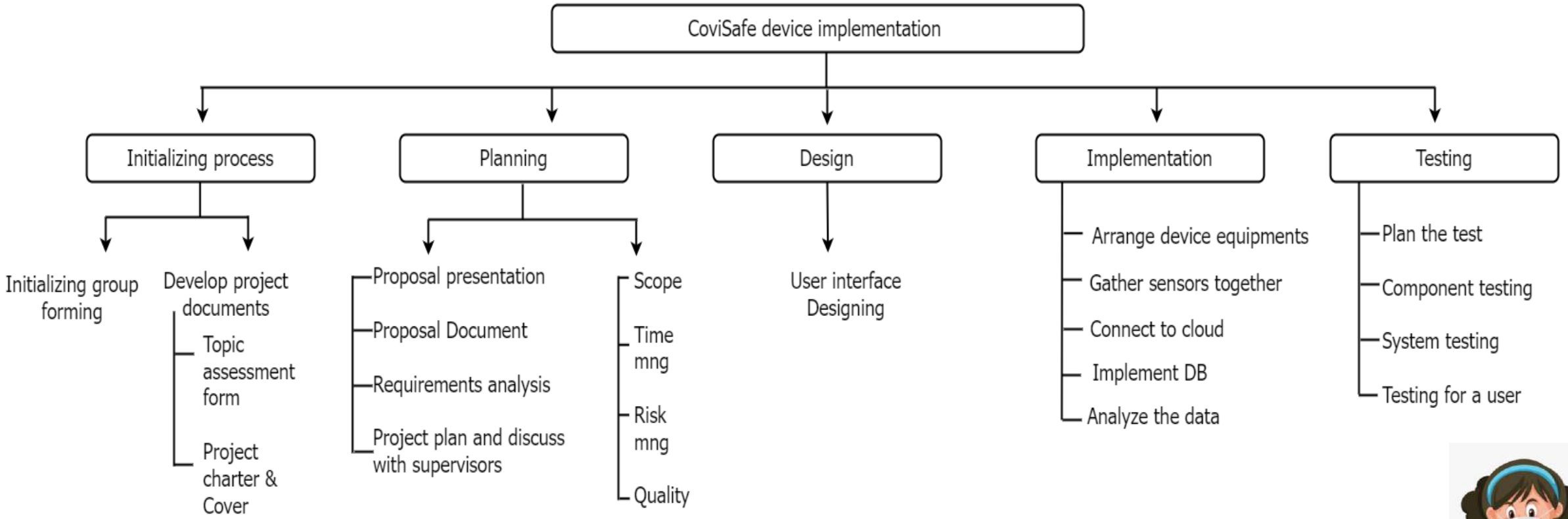
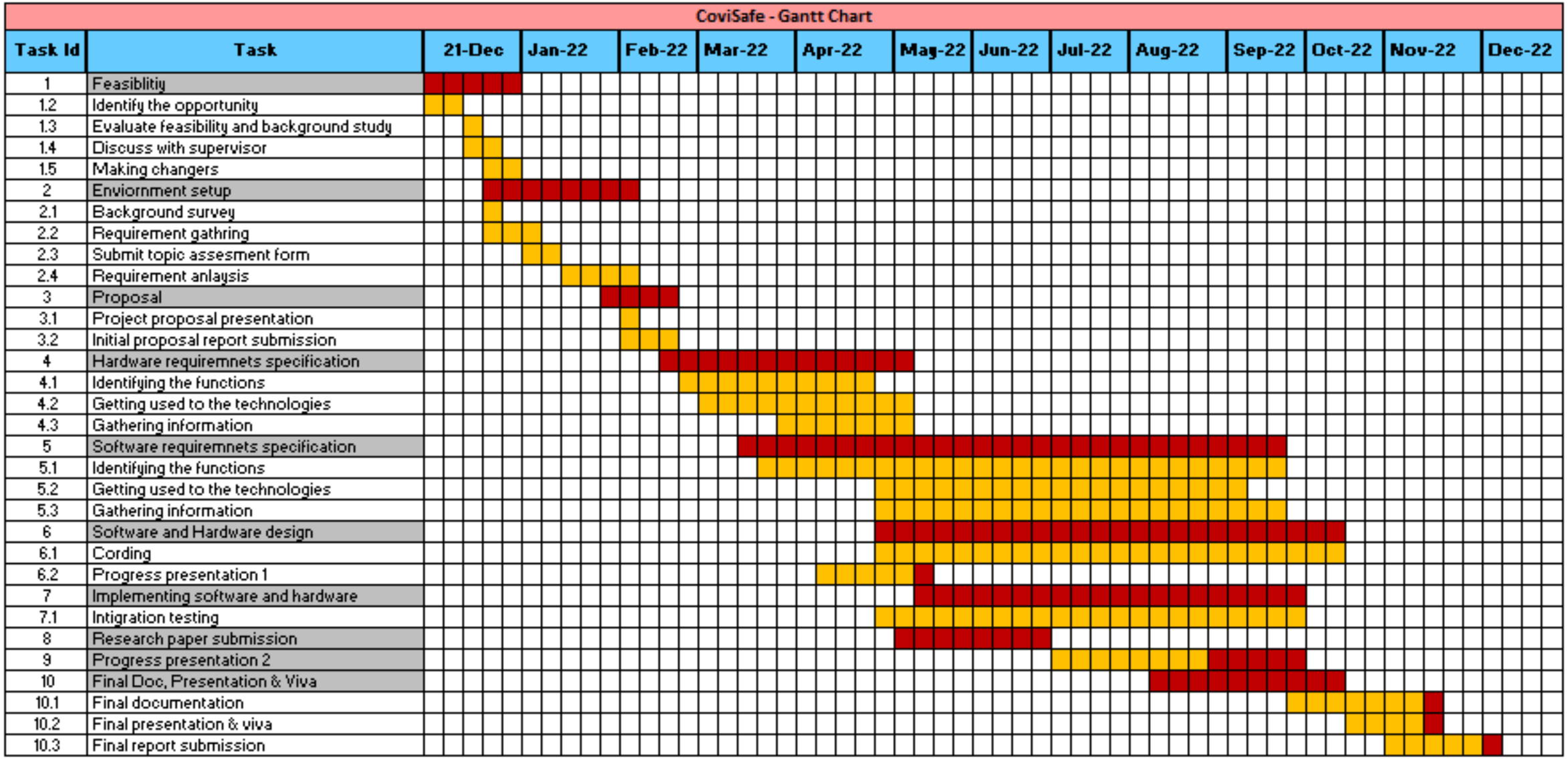


Work breakdown structure



Gantt chart


CoviSafe - Gantt Chart
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References

- [1] K. Baskaran, P. Baskaran, V. Rajaram and N. Kumaratharan, "IoT Based COVID Preventive System for Work Environment," 2020 Fourth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC), 2020, pp. 65-71, doi: 10.1109/I-SMAC49090.2020.9243471.

- [2] I. K. Hanoon and M. I. Aal-Nouman, "Cloud-based COVID-19 Patient Monitoring using Arduino," 2021 3rd East Indonesia Conference on Computer and Information Technology (EIConCIT), 2021, pp. 292-296, doi: 10.1109/EIConCIT50028.2021.9431881.

- [3] A. K, R. Anand, S. D. Prabhu and G. R. S., "IoT based Smart Healthcare System to Detect and Alert Covid Symptom," 2021 6th International Conference on Communication and Electronics Systems (ICCES), 2021, pp. 685-692, doi: 10.1109/ICCES51350.2021.9488952.

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Perera B.A.A.W.S

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Research problem

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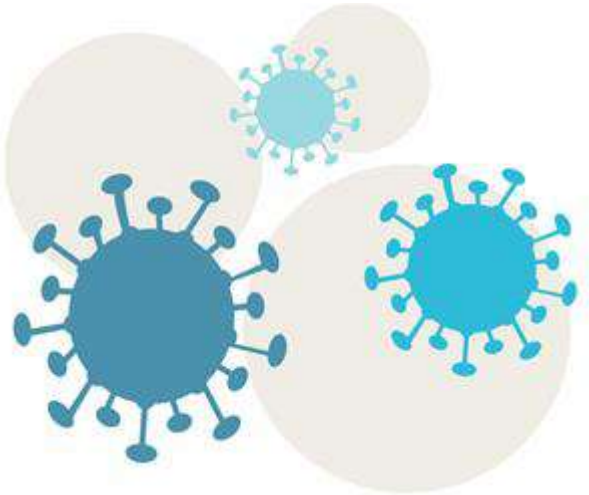


Background

- What are the symptoms we are consider about?
  - Sore throat
  - Skin Rashes
  - Red eye

- How this process conduct?

Research gap

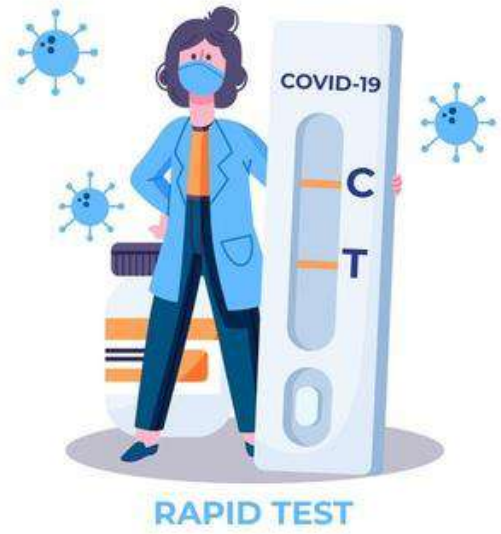
During the pandemic situation, majority of new ideas were invented.

- How to prevent from covid-19?
- How to minimize the virus spreading?
- Detect symptoms from physically checking.

Research	Features			
	Identify external symptoms	Suggest status	Provide suggestions	IT Solutions
Research A	✓	✓	✓	✗
Research B	✓	✓	✗	✗
CoviSafe	✓	✓	✓	✓

Research problem

- Doctors can’t diagnose without touching.
- Need time to diagnose the disease and verify it.
- People are less amount of certain symptoms, which can lead to spread virus.
- Unavailability of finding nearest medical centers.



Main objective

The main objective is identifying the external symptoms of COVID-19 and provide necessary suggestions.

Sub objective

Methodology

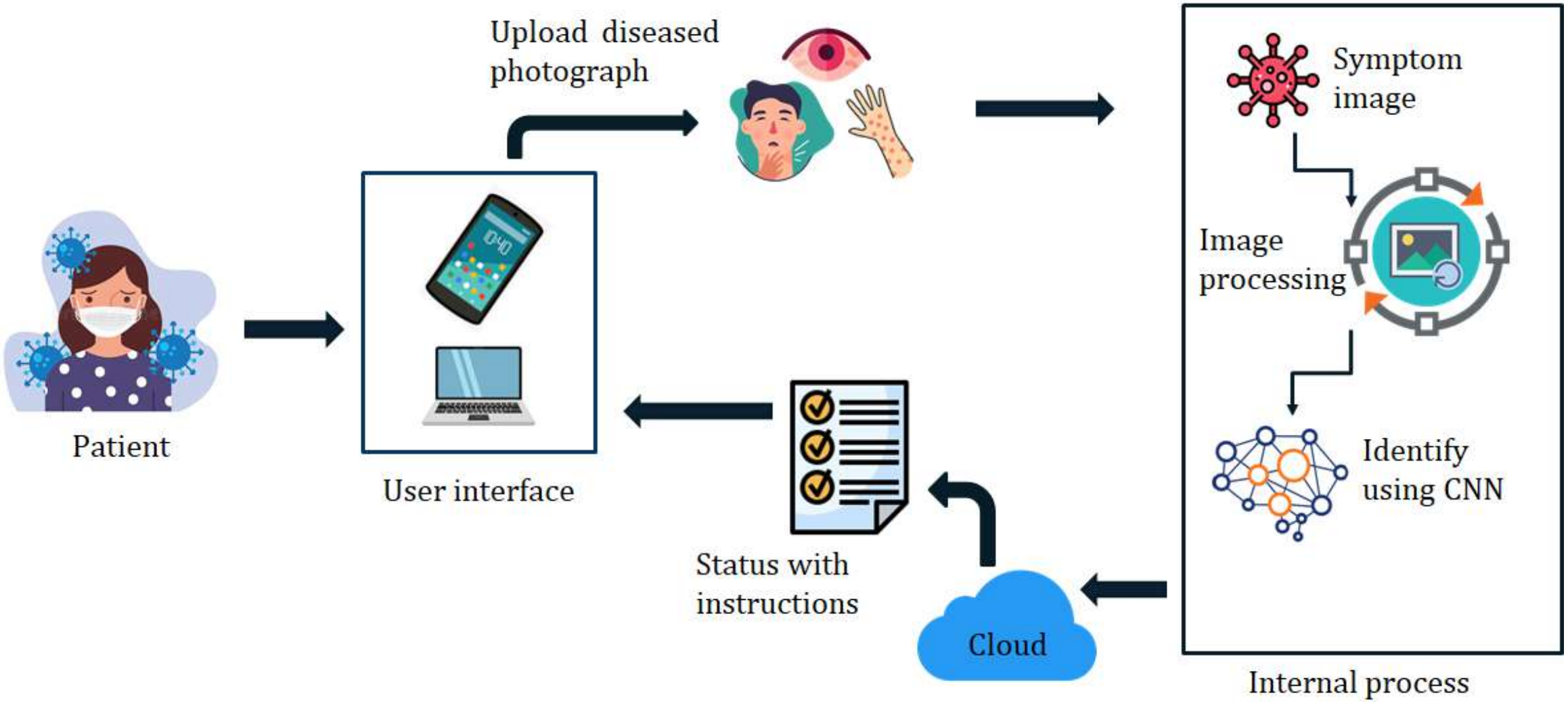
a. System diagram

b. Technologies

c. Requirements

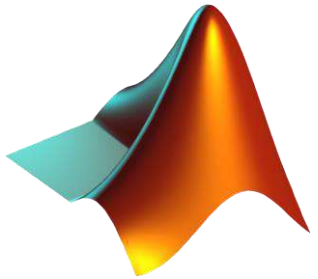
d. Gantt chart

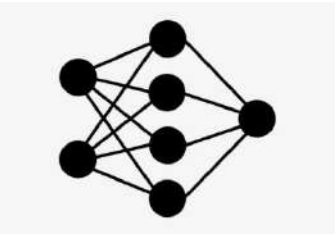
System diagram



Technologies

- Conventional Neural network
- Image processing
- Machine Learning
- Python language
- Matlab software





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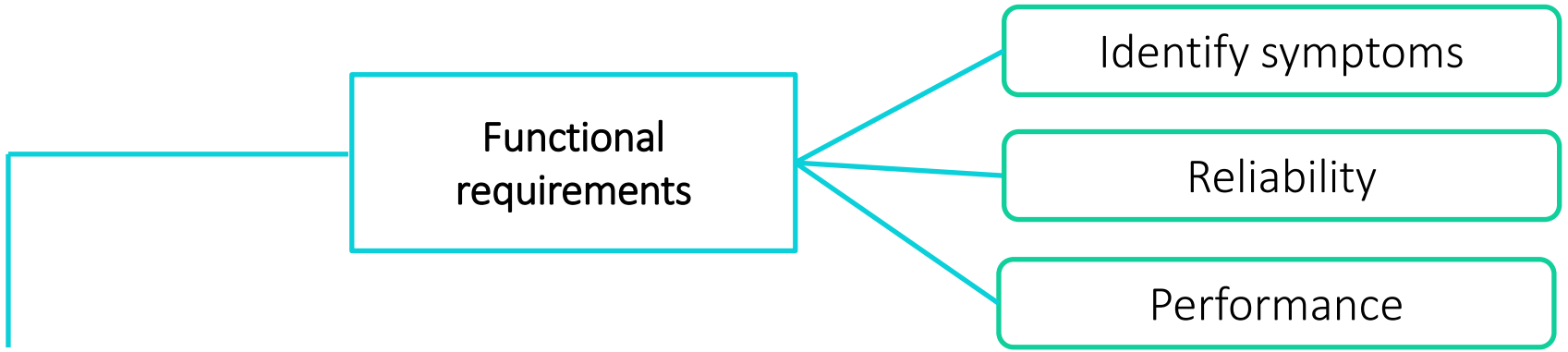

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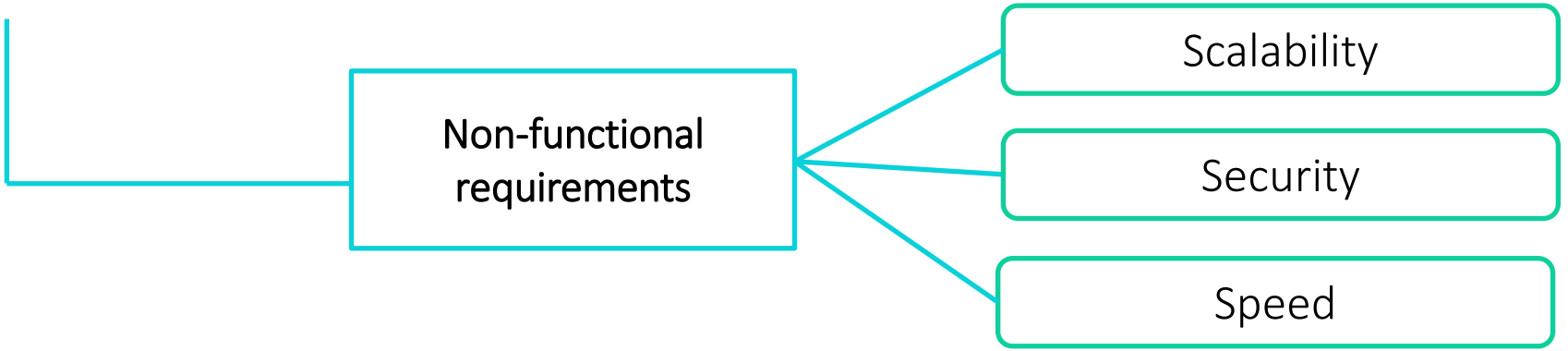
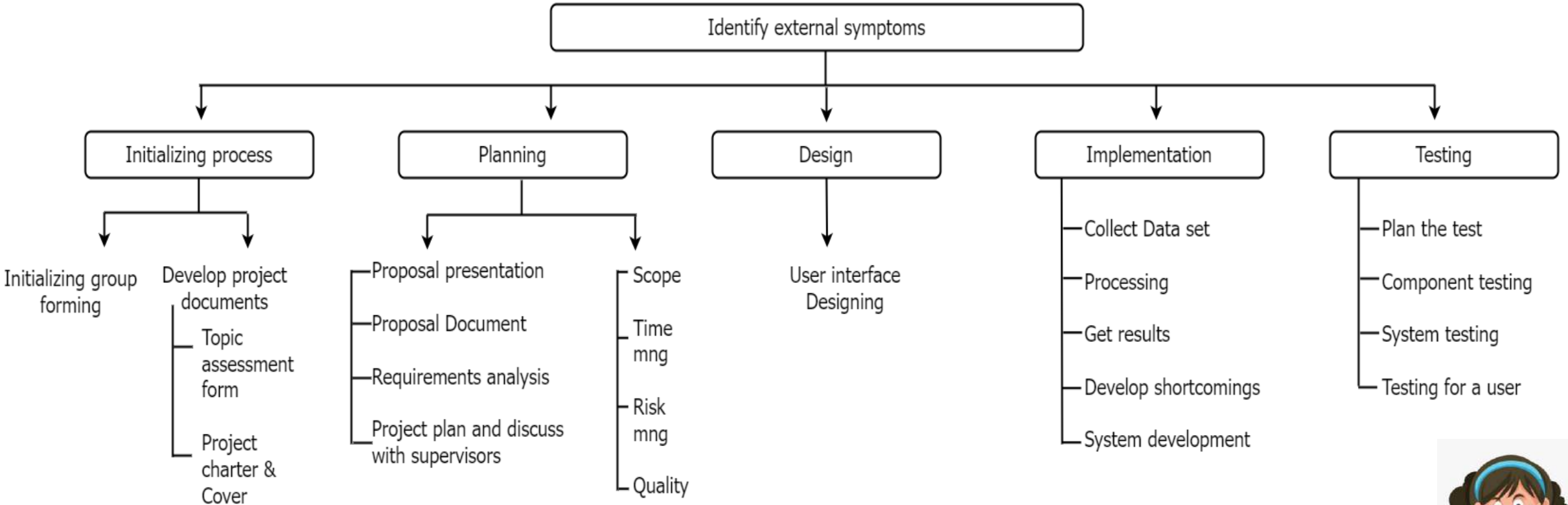
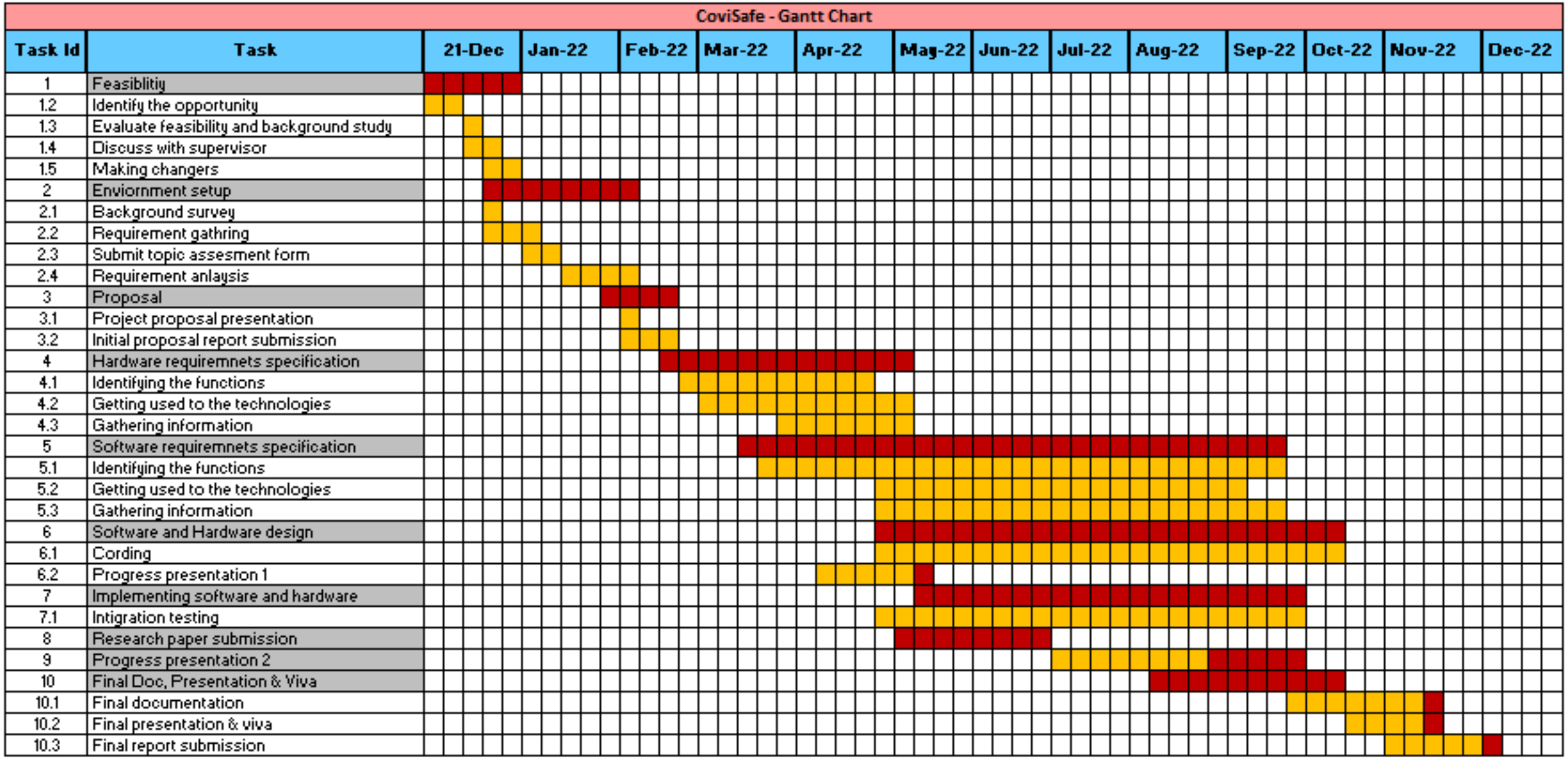


Work breakdown structure



Gantt chart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IT19015040

Rasuni Wageesha H.A

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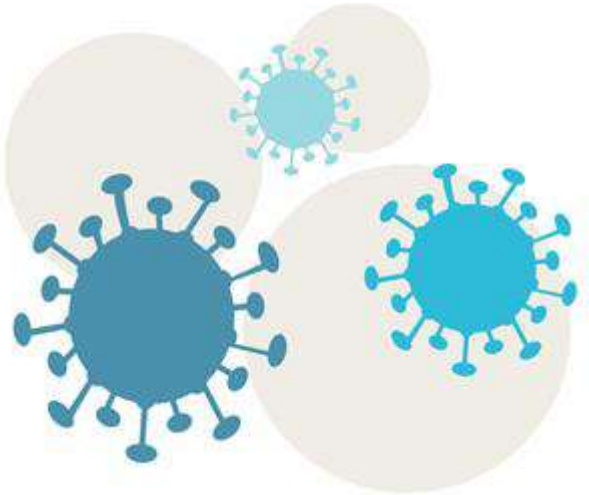
Introduction

Background

Research gap

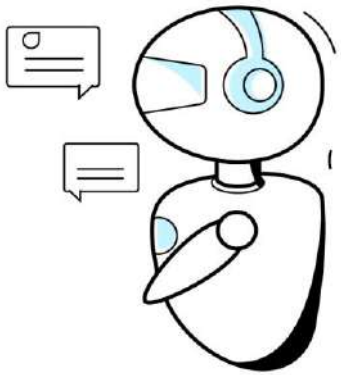
Research problem

Objectives



Background

- What is chatbot?
- How chatbot works?
- Why do we use chatbots for COVID pandemic situations?



Research gap

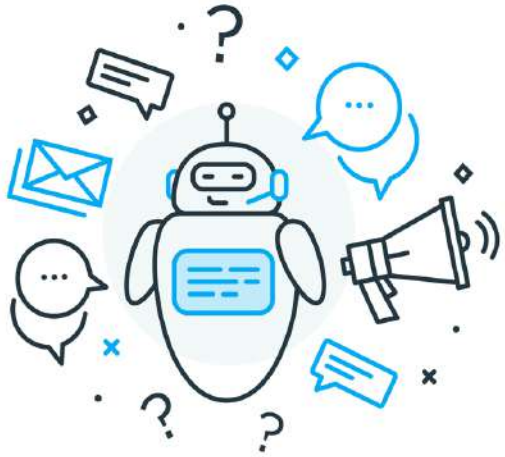
Many people become lonely as COVID matures.

- We are trying to develop long sentences.
- To diagnose a disease using a multilingual chatbot, follow the instructions and ask questions about the disease.

Research	Features		
	Long Sentences	Multi Language	Recommendations
Research A	✗	✗	✓
Research B	✗	✗	✗
CoviSafe	✓	✓	✓

Research Problem

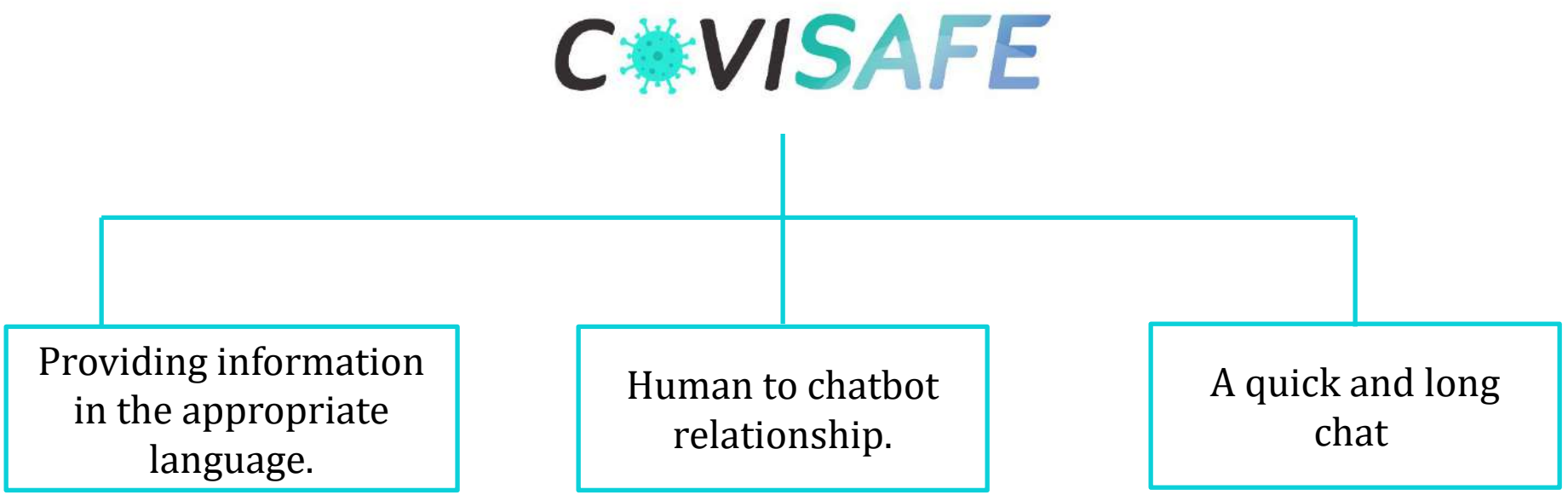
- Currently, only short word is used.
- Not to support the multi-languages.



Main objective

So, we are trying to develop long sentences with conversational with multi-lingual.

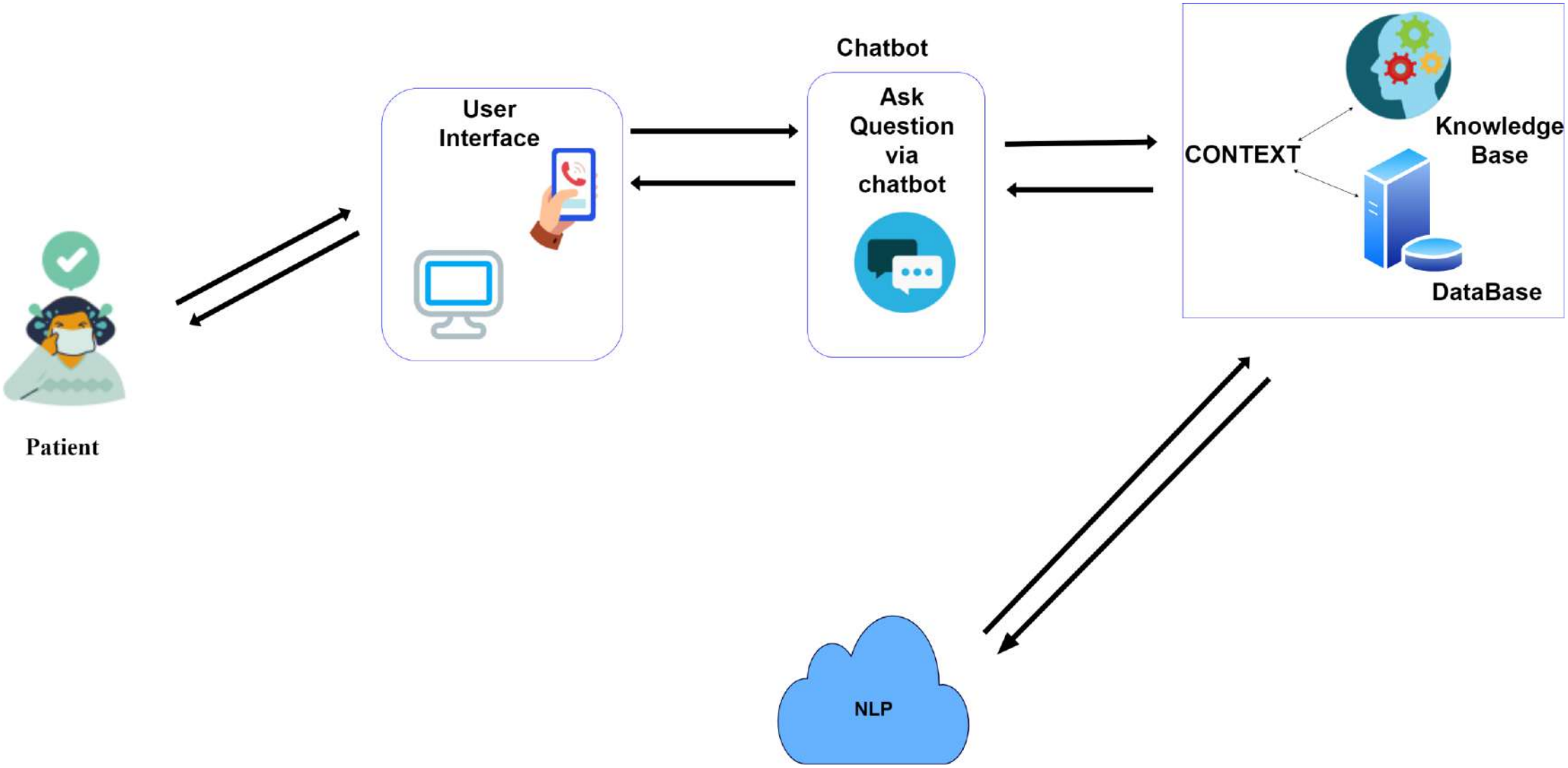
Sub objective



Methodology

- System diagram
- Technologies
- Requirements
- Gantt chart

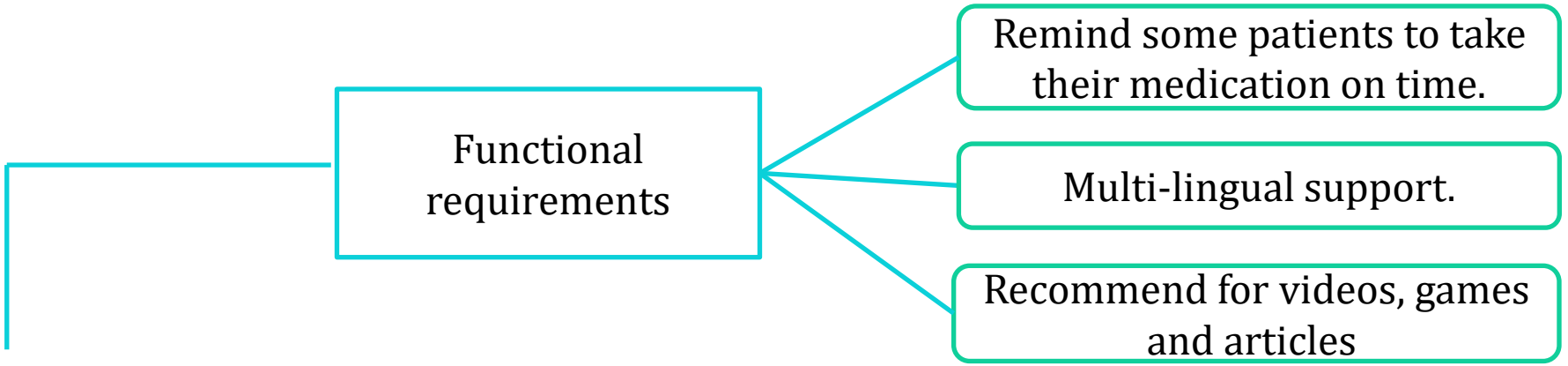
System diagram



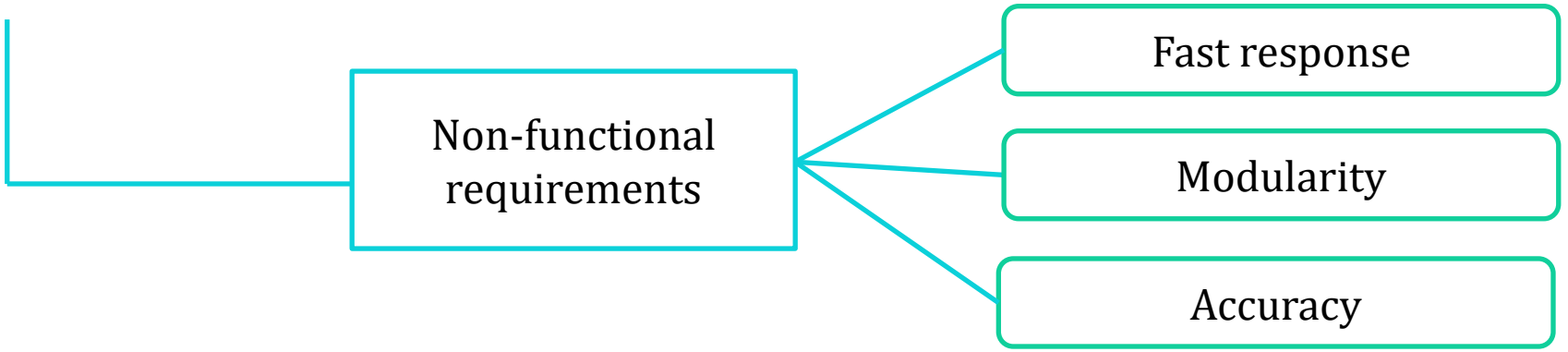
Technologies

- AI
- Natural Language Processing
- MySQL
- Cloud Computing
- Cloud Hosting
- Java
- API

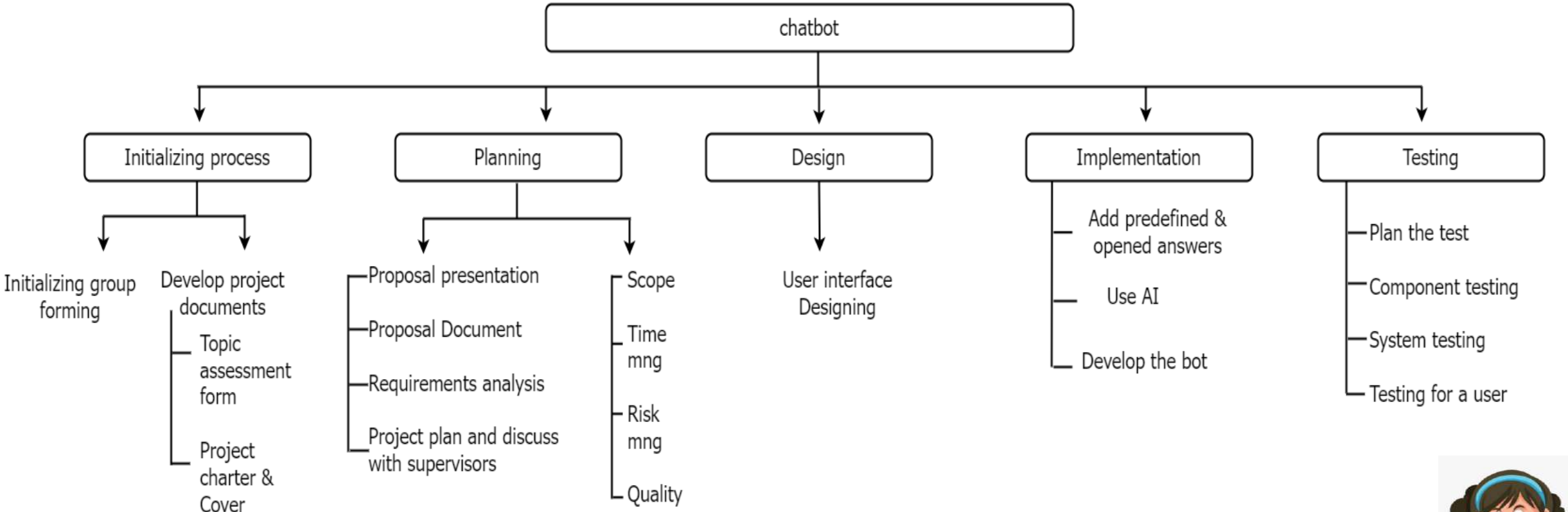
Requirements



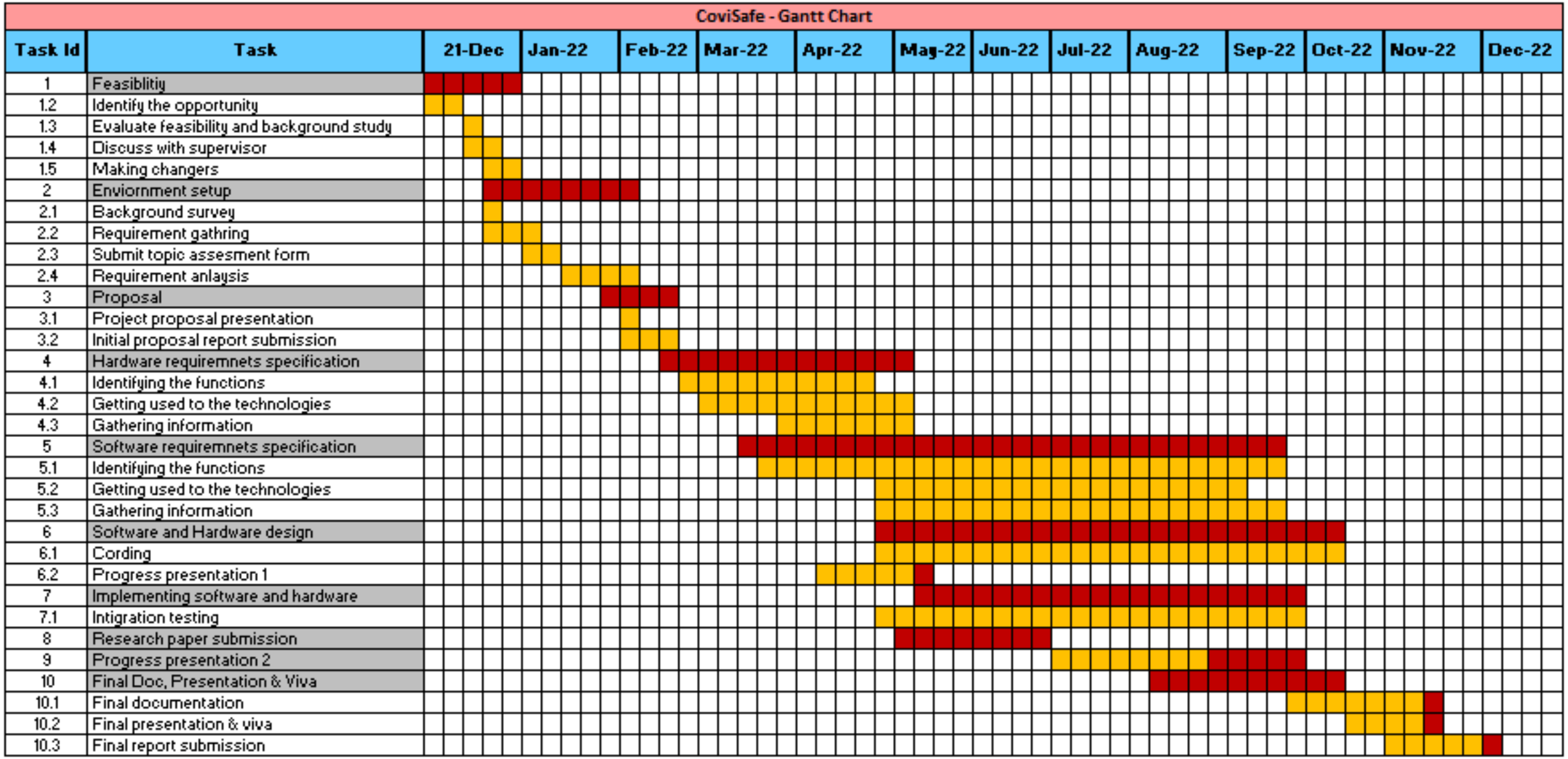
Requirements



Work breakdown structure



Gantt chart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Senanayaka S.A.M.A.B.M.

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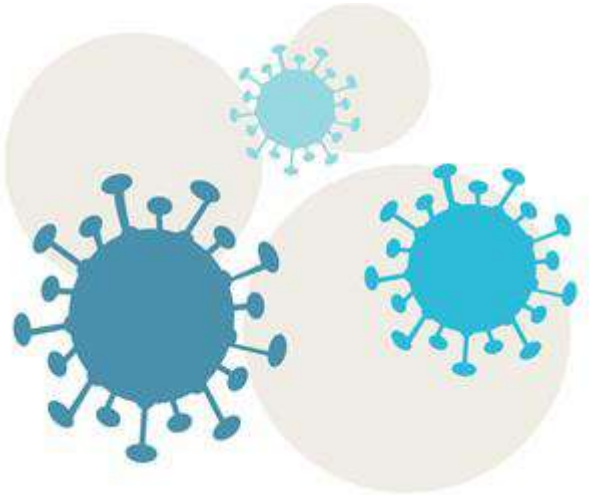
Introduction

Background

Research gap

Research problem

Objectives



Background

- How to spread covid 19?
- What could be done to prevent the spread of covid 19?
- what are the measurements required to estimate rates of COVID-19 transmission, infection, and detection

Research gap

- Identify the spread rate of the covid variants.
- sent a notification to the nearest vaccination center.
- Locate the high-risk zones.

Research	Features		
	Covid spread rate	Identifying High risk area	Find vaccination center
Research A	✓	✗	✗
Research B	✓	✗	✗
CoviSafe	✓	✓	✓

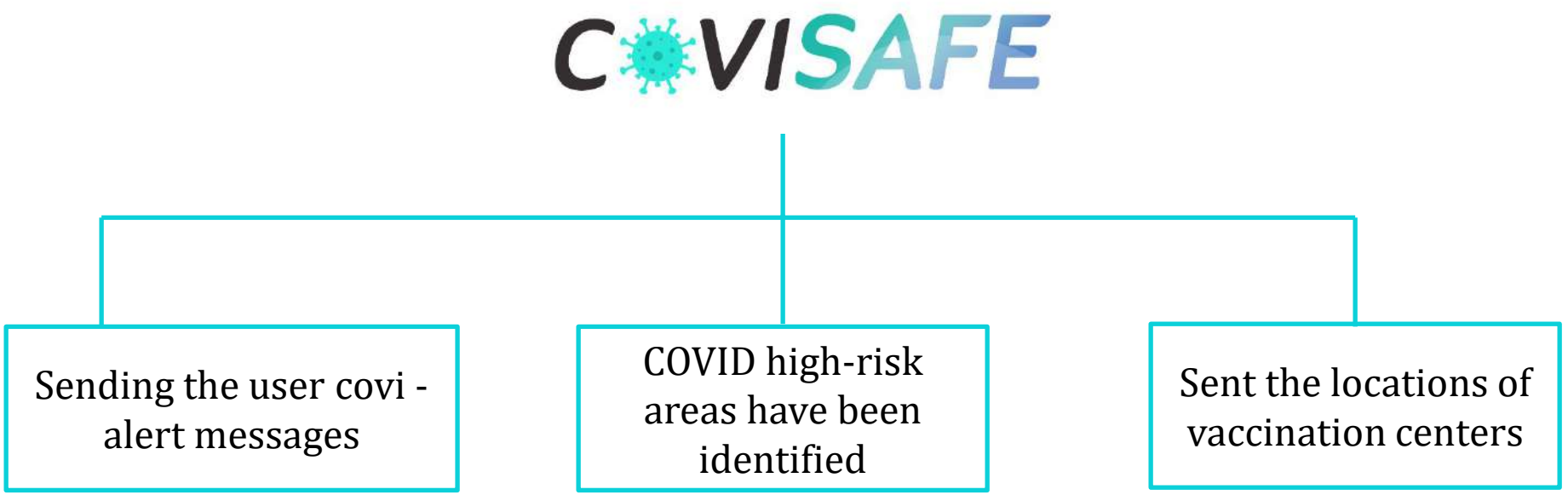
Research problem

- There is a lack of clear information on Covid 19.
- Finding Covid vaccination centers could be difficult.
- Identifying high-risk and low-risk covid areas is challenging.

Main objective

The main objective is to determine the covid spread rate in a country.

Sub objective



Methodology

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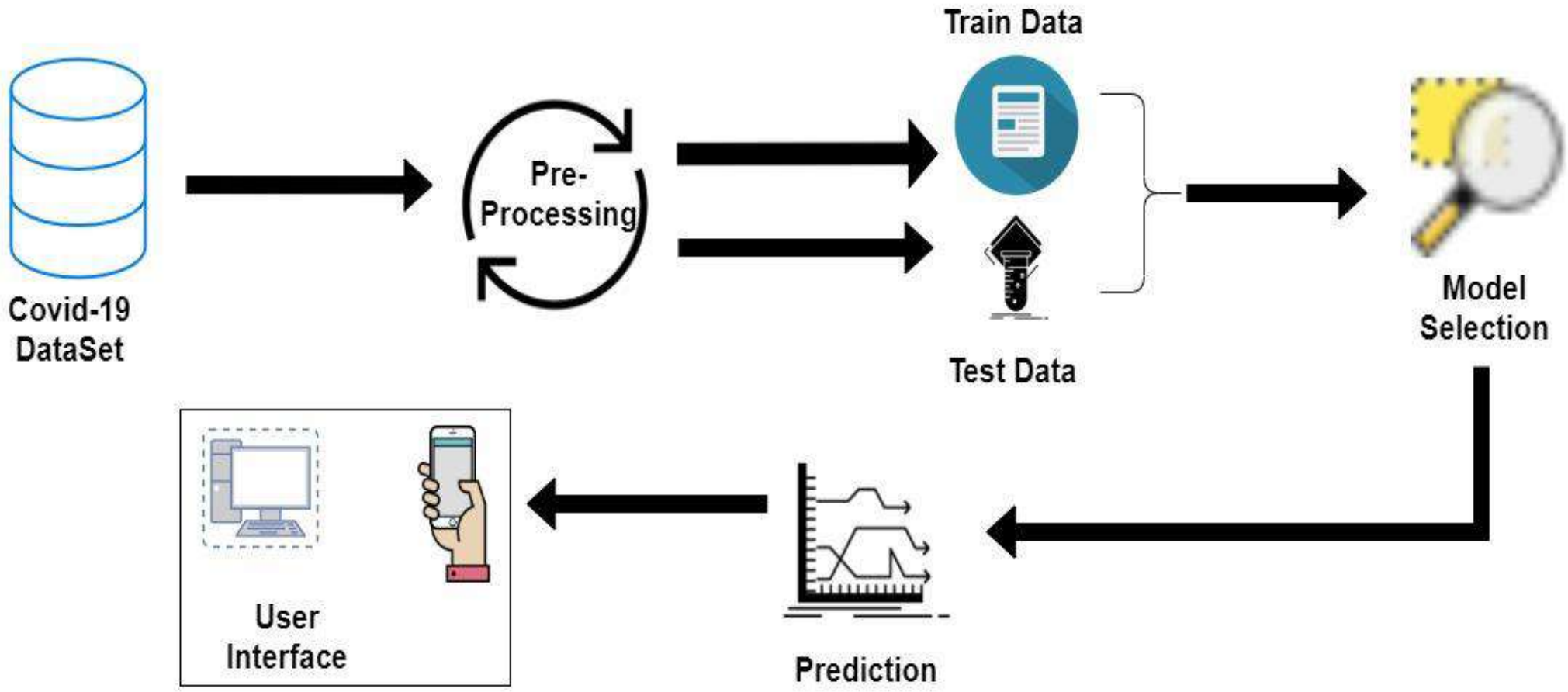
System diagram



Technologies

- Technology

  1)python

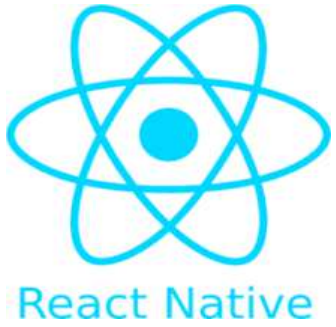
  2)machine learning

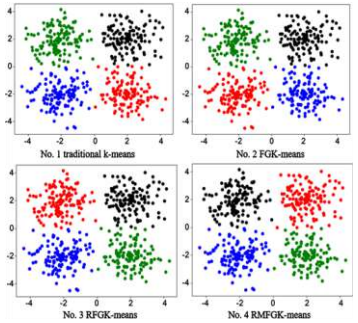
  3)react and react native

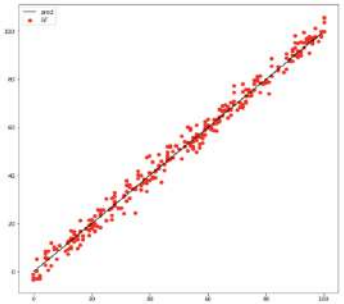
- Algorithms

  1)Linear aggression

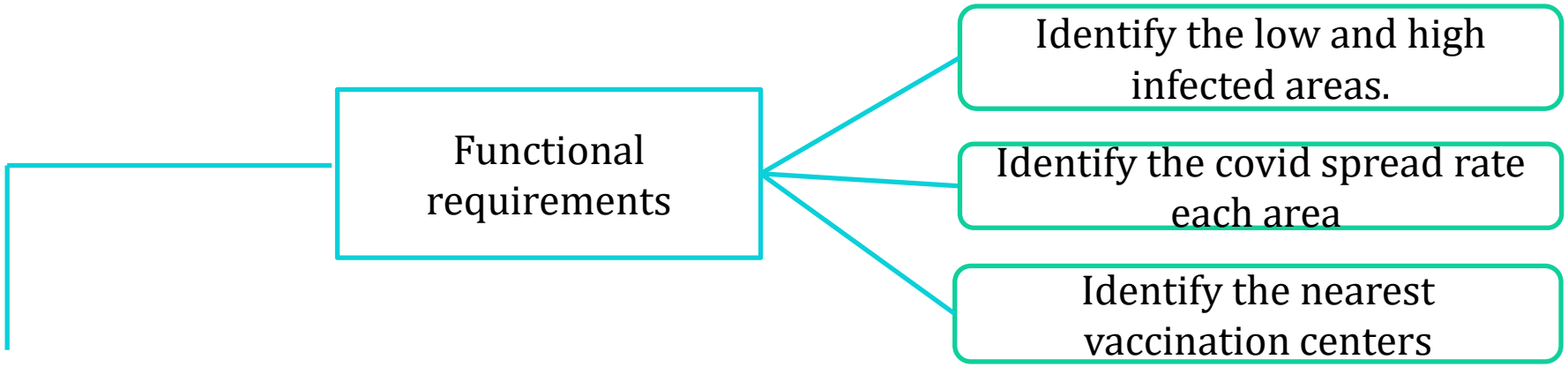
  2)Support vector machine



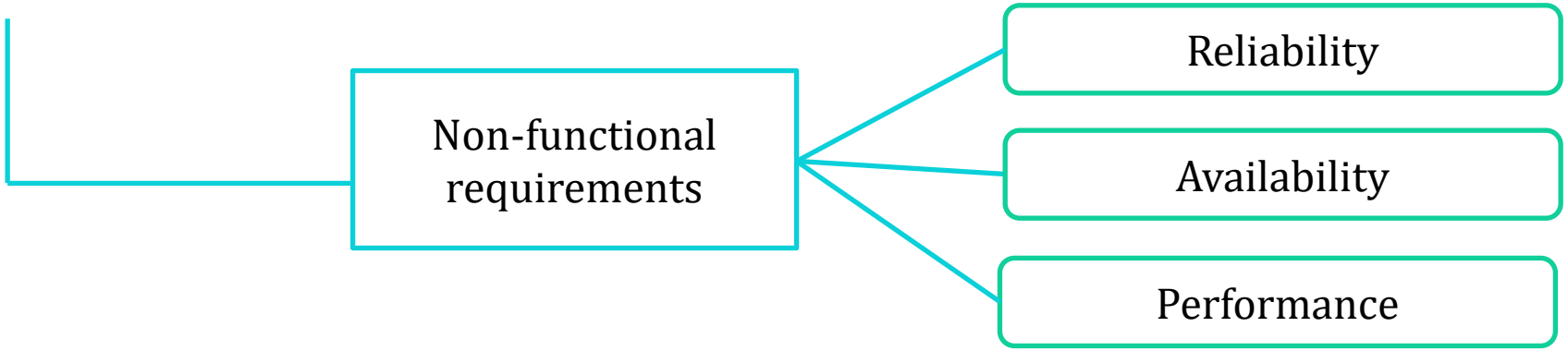




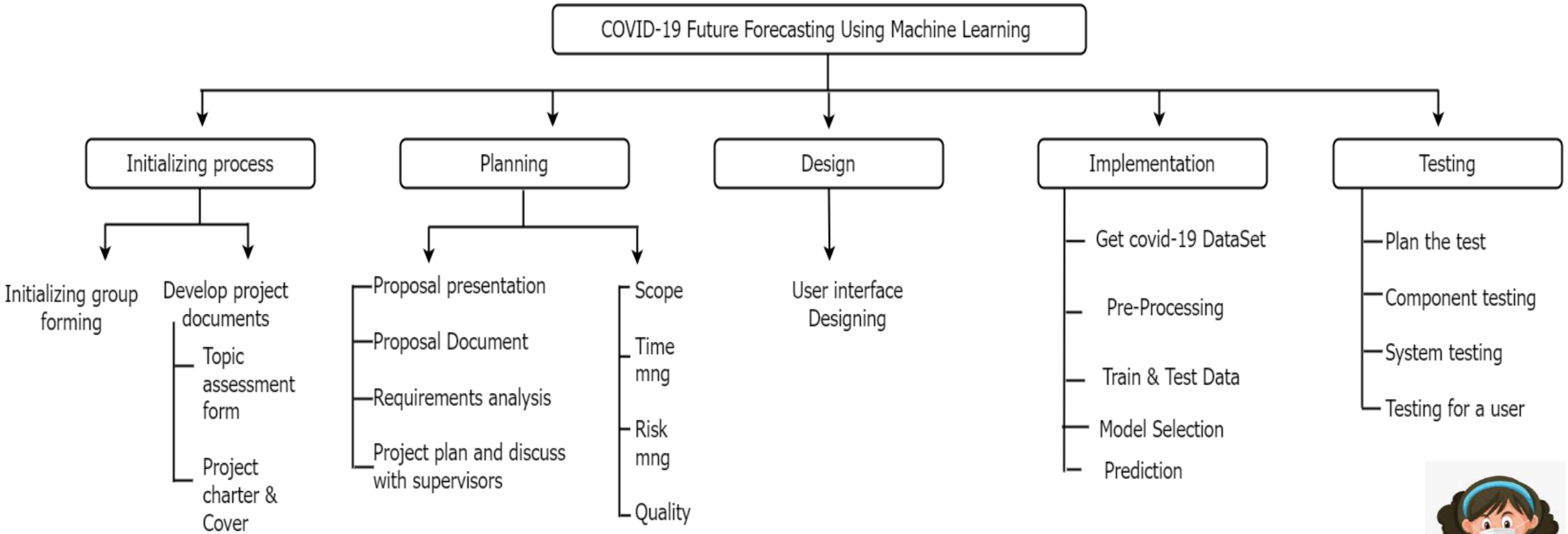
Requirements



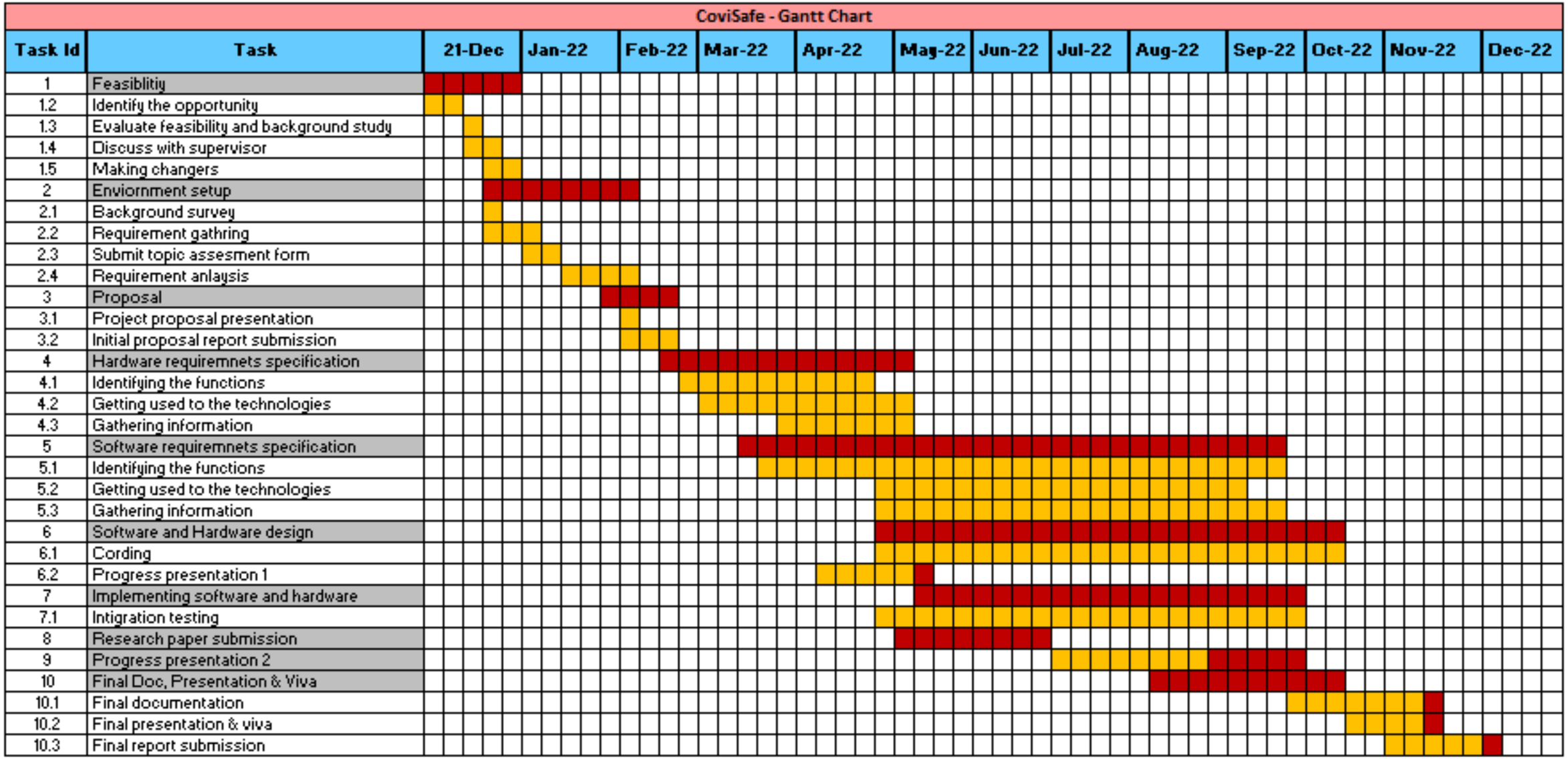
Requirements



Work breakdown structure



Gantt chart


CoviSafe - Gantt Chart
Task Id
Task
21-Dec
Jan-22
Feb-22
Mar-22
Apr-22
May-22
Jun-22
Jul-22
Aug-22
Sep-22
Oct-22
Nov-22
Dec-22
1 Feasiblitiy
1.2 Identify the opportunity
1.3 Evaluate feasibility and background study
1.4 Discuss with supervisor
1.5 Making changers
2 Enviornment setup
2.1 Background survey
2.2 Requirement gathring
2.3 Submit topic assesment form
2.4 Requirement anlaysis
3 Proposal
3.1 Project proposal presentation
3.2 Initial proposal report submission
4 Hardware requiremnets specification
4.1 Identifying the functions
4.2 Getting used to the technologies
4.3 Gathering information
5 Software requiremnets specification
5.1 Identifying the functions
5.2 Getting used to the technologies
5.3 Gathering information
6 Software and Hardware design
6.1 Cording
6.2 Progress presentation 1
7 Implementing software and hardware
7.1 Intigration testing
8 Research paper submission
9 Progress presentation 2
10 Final Doc, Presentation & Viva
10.1 Final documentation
10.2 Final presentation & viva
10.3 Final report submission

References

- [1]Yunxiang Liu, Yan Xiao "Analysis and Prediction of COVID-19 in Xinjiang Based on Machine Learning" Analysis and Prediction of COVID-19 in Xinjiang Based on Machine Learning...13-15 Nov. 2020

- [2]Jayavrinda Vrindavanam , Raghunandan Srinath , Hari Haran Shankar, "Machine Learning based COVID-19 Cough Classification Models - A Comparative Analysis" The paper demonstrates three machine learning classification models and determines the better classifier among these three models 8-10 April 2021

- [3]Aishwarya Sen , Umang Kala, "Analysis and Prognosis of COVID-19 Pandemic in India - A Machine Learning Approach" Four different Machine Learning algorithms namely Random Forest Regression, Multiple Linear Regression, Support Vector Regression and Lasso Regression have been considered 19-20 Feb. 2021

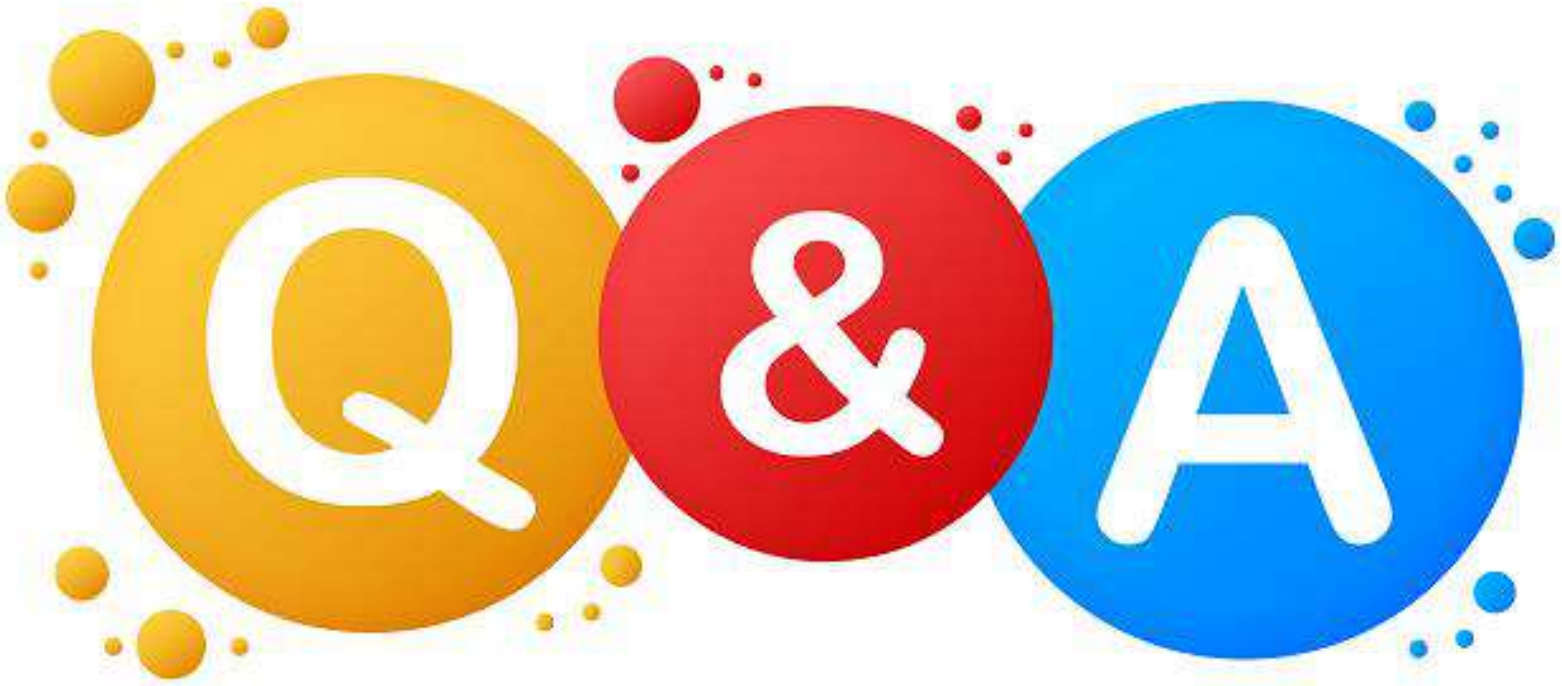
- [4]Pratima Kumari, Durga Toshniwal, "Real-time estimation of COVID-19 cases using machine learning and mathematical models - The case of India" The count of COVID-19 cases skyrocketed in the past few days, which creates immense pressure on health officials and governments. 26-28 Nov. 2020

Commercialization

- Device is low cost and portable every people can use.
- Advertising in paper articles.
- Social media marketing plan.
- Recognizing target audience.

Budget

Description of Task	Estimated Budget (Rs)
Device Implementation	8000.00
Cloud Services and Servers	5000.00
Stationary printing & Photocopy	1700.00
Transport expenses	4500.00
Internet and call usage	4500.00
Total	23,700.00


Q&A


THANK
YOU