


# Ideation Phase

## Brainstorm & Idea Prioritization Template

Date	19 September 2022
Team ID	PNT2022TMID09656
Project Name	Classification of arrhythmia by using deep learning with 2-d ecg spectral image representation
Maximum Marks	4 Marks

### Step-1: Team Gathering, Collaboration and Select the Problem Statement



## Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

⌚ 10 minutes to prepare  
👥 1 hour to collaborate  
👤 3-6 people recommended

#### ➦ Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

⌚ 10 minutes

- Team gathering**  
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.
- Set the goal**  
Think about the problem you'll be focusing on solving in the brainstorming session.
- Learn how to use the Facilitation tools**  
Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#)

#### ➦ Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

⌚ 5 minutes

**Module**

**How might we [your problem statement]?**  
The electrocardiogram (ECG) is one of the most extensively employed signals used in the diagnosis and prediction of cardiovascular diseases (CVDs). The ECG signals can capture the heart's rhythmic irregularities, commonly known as arrhythmias. A careful study of ECG signals is crucial for precise diagnosis of patients' acute and chronic heart conditions. In this study, we propose a two-dimensional

The electrocardiogram (ECG) is a record of the heart's electrical activity. It is a non-invasive, painless, and portable method for diagnosing and monitoring heart conditions. The ECG signal is a complex waveform that represents the heart's electrical activity. It is a crucial tool for diagnosing and predicting cardiovascular diseases (CVDs). The ECG signal can capture the heart's rhythmic irregularities, commonly known as arrhythmias. A careful study of ECG signals is crucial for precise diagnosis of patients' acute and chronic heart conditions. In this study, we propose a two-dimensional

**Key rules of brainstorming**  
To run an smooth and productive session

- Stay in topic.
- Encourage wild ideas.
- Defer judgment.
- Listen to others.
- Go for volume.
- If possible, be visual.

## Step-2: Brainstorm, Idea Listing and Grouping

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### Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

#### TIP

You can extend a sticky note and fill the space (which is sticky) down to start drawing!

#### Muthamizhan

The proposed CHD model requires a 10 stages of ECG signals as input data	ECG signals, representing meaningful, manually coded signals, the performance	It identifies how any heart disease affects the data
The early detection of arrhythmia, you have understanding of disease cause	The early diagnosis of cardiac arrhythmia, highly relies on the ECG	Consistent time to finish the test and give the result
It can also categorize according to risk levels	Implemented in Python with the open source library TensorFlow	The present research currently a single-lead ECG signal

#### VigneshKumar

An irregular or abnormal heartbeat	Pause in sinus rhythm	Evaluating the age tracing
Abnormalities of regular sinus rhythm, irregular sinus rhythm or fast	Abnormalities of cardiac electrical activity result	Based on heart rate
noninvasive diagnostic technique	ECG data to use features based on the regions	The mapping techniques for arrhythmia classification techniques using a deep neural network

#### Bharathidasan

Interpreting different approaches of machine learning (ML) techniques	Analysis of the proposed ECG signals based on artificial intelligence	Detection of Classification using Support Vector Machine
Detection of Ischemic Myocardial Infarction using Machine CNN	Multi-Lead ECG Classification via an Information Based framework	compared with AlexNet and VGGNet
Each convolutional layer is followed by a pooling layer	The results show the CNN architecture with four 3D convolutional layers	A fully connected layer is used between the last pooling layer and the output layer

#### Vetri selvan

optimization parameters in the proposed ECG CHD model	Long term monitoring	It is quick, safe and portable test
Detects irregular heart beats	can ECG detect heart blockage	can be easily added to modified
delivering more preventive care	poor electrodes to patient contact	Remote access and availability

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### Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

10 minutes

#### TIP

Add color-coded tags to sticky notes to make it easier to find, organize, organize, and categorize important ideas as themes within your mind.

What went well..

What didn't go well...

Action..

Timeline

Negative

Active the task

collaboration

Fearless

suggestions

Security

## Step-3: Idea Prioritization



### Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

