

## Ideation Phase

### Brainstorm & Idea Prioritization

Date	19 September 2022
Team ID	PNT2022TMID32676
Project Name	VirtualEye - Life Guard for Swimming Pools to Detect Active Drowning
Maximum Marks	4 Marks

#### Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

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.

Reference: <https://www.mural.co/templates/empathy-map-canvas>

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



### VIRTUAL EYE

#### Brainstorm & idea prioritization

In this session we aim to achieve a good base for beginning our project. With clear understanding of the task in hand, the next step would be to collectively put in our thoughts/ imagination and end with a proper feasibility study.

#### Ground Rules

- Be Creative
- Rule out every possible ideas and improvements
- Make your points clear and purposeful
- Don't hesitate. (Every point is noteworthy)
- Arguments are good ALA it lands beneficial
- Have various perspectives towards the problem

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#### Choose your best "How Might We" Questions

Share the top 5 brainstorm questions that you created and let the group determine where to begin by selecting one question to move forward with based on what seems to be the most promising for idea generation in the areas you are trying to impact.

🕒 10 minutes

##### QUESTION 1

How might we detect and differentiate active drowning with the least possible error rate?

##### QUESTION 2

How might we automate the alert systems so as to provide crucial stats and info to the rescue team ?

##### QUESTION 3

How might we optimize the detection algorithm to yield results in the least time?





##### QUESTION 4

How might we bring more privacy, yet use camera for detection?

##### QUESTION 5

How might we optimally use minimal hardware to get the most accurate information in an around the environment?

#### Team

-  Sasi
-  Satish
-  Soma (L)
-  Viswa



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

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### Brainstorm solo

Have each participant begin in the "solo brainstorm space" by silently brainstorming ideas and placing them into the template. This "silent-storming" avoids group-think and creates an inclusive environment for introverts and extroverts alike. Set a time limit. Encourage people to go for quantity.

10 minutes

#### Soma

High level testing must be carried out before real world deployment.	Proper hyperparameters must be found for the model.	Systematic and Efficient algorithms to be followed
Requires HD cameras for good quality frames to be processed	Underwater cameras a possible solution to detect humans under deep water	24/7 Power supply is must for the system to run & report
Provide critical and proper message to the rescue team	Make sure the stakeholders know, how the system works.	Make sure the stakeholders understand that there is a possibility for a false alarm as well

#### Viswa

optimized feed transfer to achieve live relay will less BW to get the classifiable video of underwater footage	able to process absolute drowning and also alerting the rescue team of passive possibilities as a probable instance	setup in ACS and suggestive ways to ensure the information reaches in one or more ways as this deal with critical life saving situation
ensuring ways where there is 100% sources of spotting a drowning situation and giving multiple cameras strategic to achieve results in appropriate situations	ensuring the video feed is not being recorded or saved instead being used only for detection which is later discarded	using alternative source of energy such as solar to make a green system but making sure to always have backup supply
having an integration with fitness band components to get also state of a swimmer to have extra information and predict possibility of a drowning incident	having video reflective indicators given to children and newbies and leading them signals to make the drowning direction easy	having considered the metrics and variance of different age groups and also different swimming environments both controlled and unsecure

#### Sasi

The AI should be trained with more samples for better results	There should be manual alert system in case of detection failure	More cameras should be used to improve accuracy.
How will be the accuracy level in the system?	Will the system detect properly if the pool is clumsy?	System should detect multiple drowning and should report the same
For privacy purpose the video stream should not be stored.	The system shouldnt annoy others	cameras can be mounted on the bottom of floating boards for large swimming pools.

#### Sathish

power backup should be there in case of powercut.	The network connectivity should be good for faster alert transmission.	cameras should be maintained properly for good results
What happens if animals were encountered in the pool?	When more people are drowning there will be a problem to detect all so multiple cameras are needed to eliminate such problems.	Use powerful algorithm to get trained from various datasets.
AI should be trained in such a way that it should detect multiple drowning		

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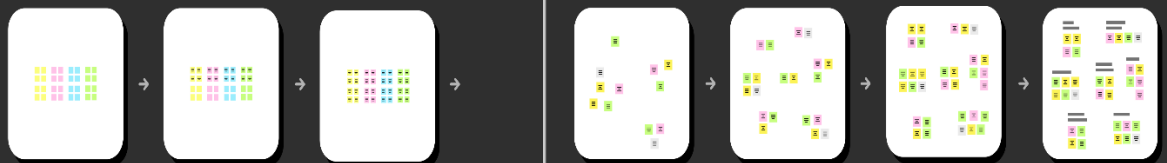
### Brainstorm as a group

Have everyone move their ideas into the "group sharing space" within the template and have the team silently read through them. As a team, sort and group them by thematic topics or similarities. Discuss and answer any questions that arise. Encourage "Yes, and..." and build on the ideas of other people along the way.

15 minutes

TIP

You can use the Voting session tool above to focus on the strongest ideas



### Step-3: Idea Prioritization

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#### 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

