Ideation Phase
Brainstorm & Idea Prioritization Template

Date	24 September 2022
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Project Name	Gesture-based Tool for Sterile Browsing of Radiology Images
Maximum Marks	4 Marks

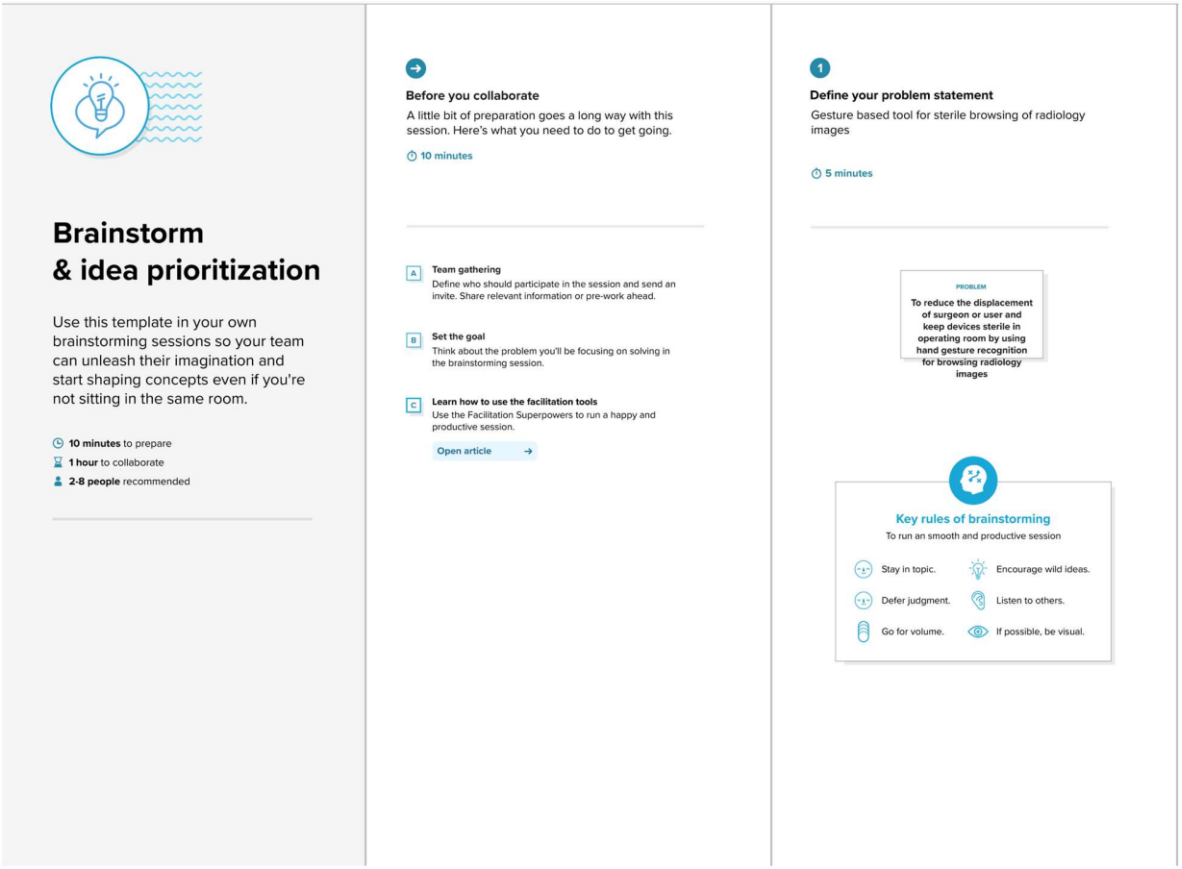
Brainstorm & Idea Prioritization Template:

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.

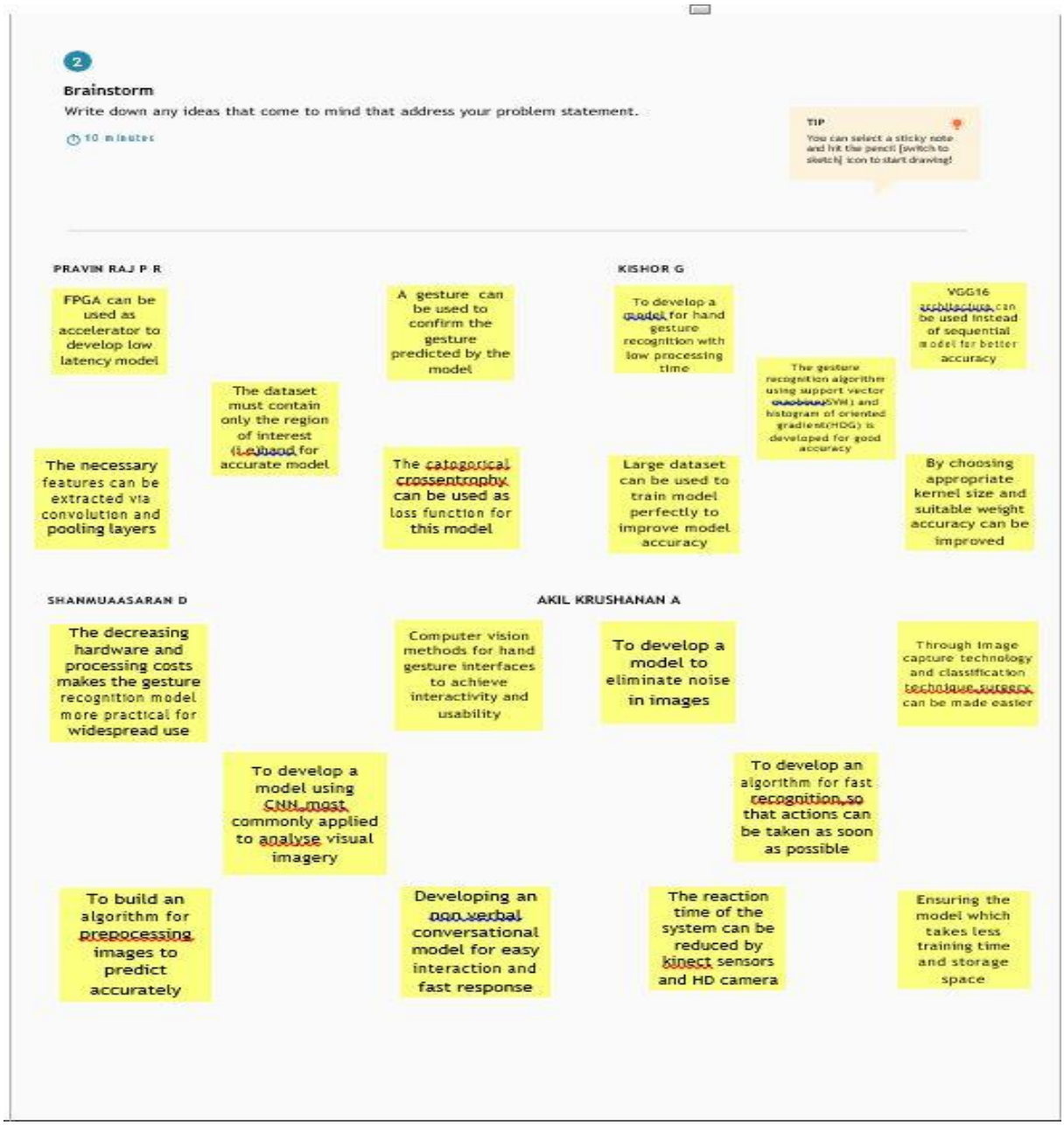
Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

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

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



Step-2: Brainstorm, Idea Listing and Grouping



3

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 and break it up into smaller sub-groups.

20 minutes

Image processing techniques

- Background subtraction
- Image thresholding
- Skin or glove colour extraction
- Binary imaging
- Counting fingers using convex hull method
- Image enhancement using dilation(size of foreground object or white region increases)
- Counting fingers using image detection
- Image detection
- Image enhancement using erosion(size of foreground object or white region decreases)

Machine leaning techniques

- Using Convolutional Neural Networks
- Gesture detection using training and testing of CNN model
- Use libraries like numpy, pandas,etc.,
- Object detection using external python frameworks or libraries
- Use pretrained model like mediapipe

User Interface

- We can use flask framework and HTML template, CSS for the UI
- Use (HTML,CSS,JS) for browsing and showing radiology images
- Use HTTP requests and responses to communicate with python code from web UI

Image capture and compression

- Using webcam or infrared camera to capture hand
- Using openCV webcam video is converted into frames
- Reduce the resolution of the segmented hand image for better performance

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