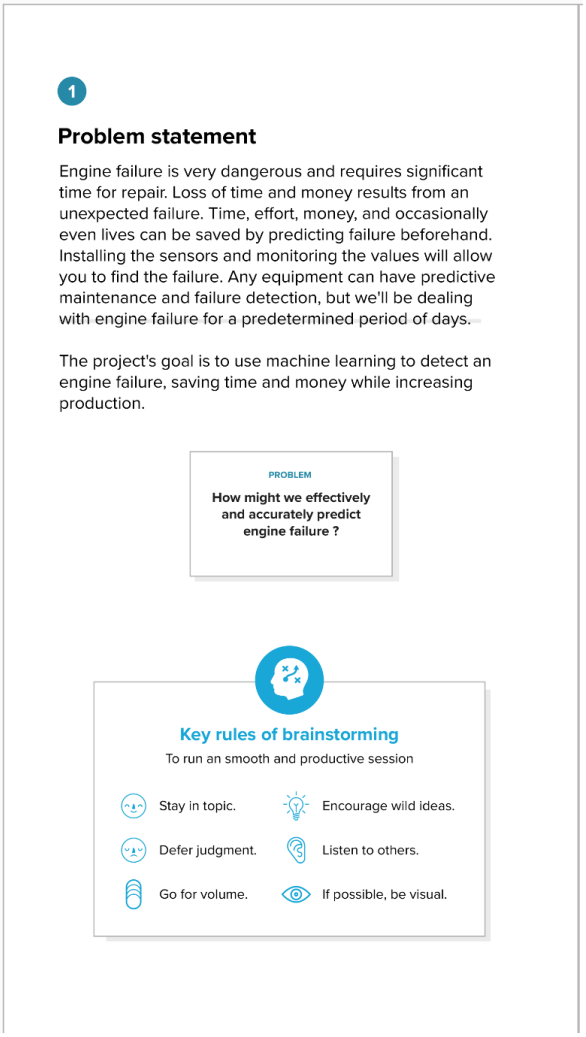
Ideation Phase
Brainstorm & Idea Prioritization

Date	1 October2022
Team ID	PNT2022TMID21701
Project Name	Predictive Analytics for Aircraft Engines
Maximum Marks	

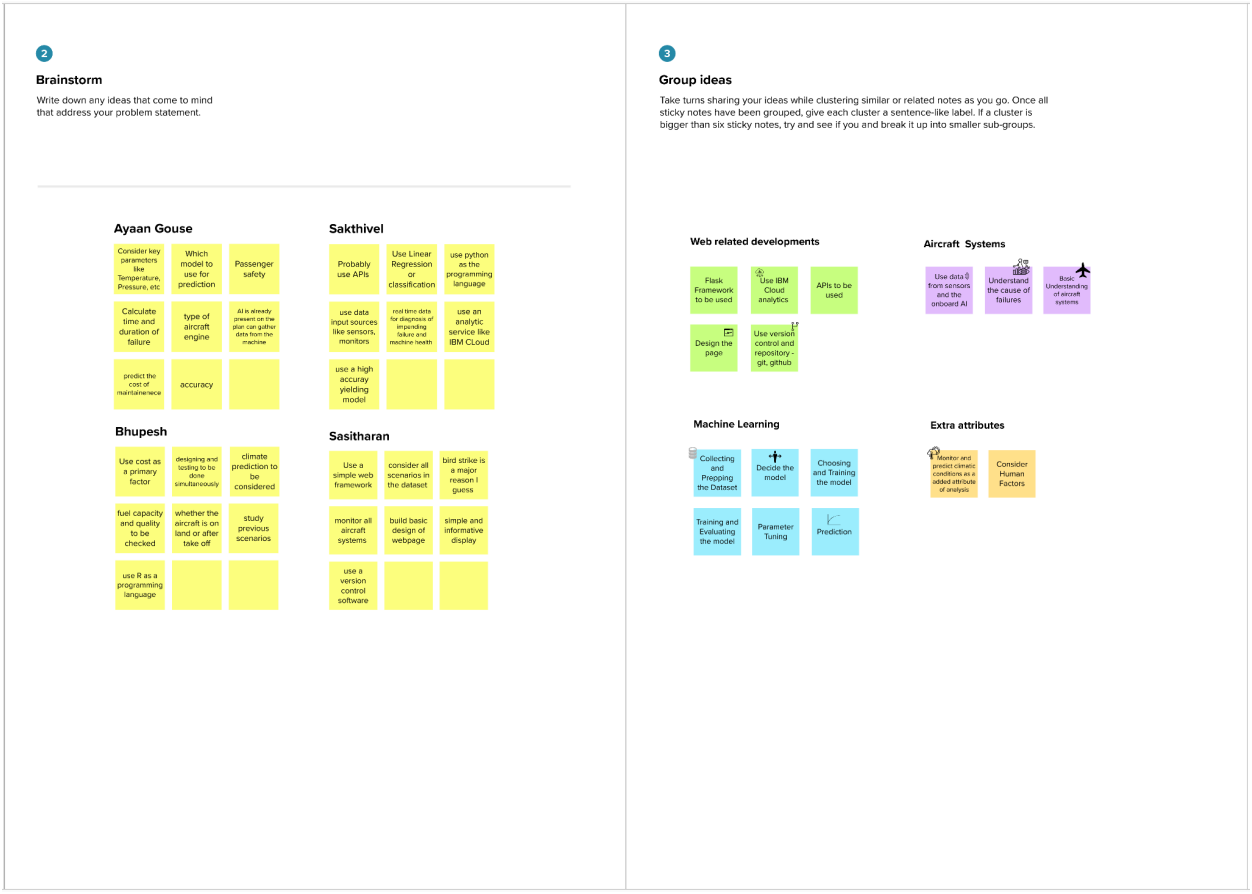
Brainstorm & Idea Prioritization Template:

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.

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



Step-2: Brainstorm, Idea Listing and Grouping



Step-3: Idea Prioritization

4

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.

IBM Project

Machine Learning-Based Predictive Analytics For Aircraft Engine

1 Problem statement

Engine failure is very dangerous and requires significant time for repair. Loss of time and money results from an unexpected failure. Time, effort, money, and occasionally even lives can be saved by predicting failure beforehand. Installing the sensors and monitoring the values will allow you to find the failure. Any equipment can have predictive maintenance and failure detection, but we'll be dealing with engine failure for a predetermined period of days.

The project's goal is to use machine learning to detect an engine failure, saving time and money while increasing production.

PROBLEM

How might we effectively and accurately predict engine failure ?

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.

2 Brainstorm

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

Ayaan Gouse

- Consider key parameters like Temperature, Pressure, etc
- Which model to use for prediction
- Passenger safety
- Calculate time and duration of failure
- type of aircraft engine
- AI is already present on the plan can gather data from the machine
- predict the cost of maintainenece
- accuracy

Sakthivel

- Probably use APIs
- Use Linear Regression or classification
- use python as the programming language
- use data input sources like sensors, monitors
- real time data for diagnosis of impending failure and machine health
- use an analytic service like IBM CLoud
- use a high accuray yielding model

Bhupesh

- Use cost as a primary factor
- designing and testing to be done simultaneously
- climate prediction to be considered
- fuel capacity and quality to be checked
- whether the aircraft is on land or after take off
- study previous scenarios
- use R as a programming language

Sasitharan

- Use a simple web framework
- consider all scenarios in the dataset
- bird strike is a major reason I guess
- monitor all aircraft systems
- build basic design of webpage
- simple and informative display
- use a version control software

3 Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, 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.

Web related developments

- Flask Framework to be used
- Use IBM Cloud analytics
- APIs to be used
- Design the page
- Use version control and repository - git, github

Aircraft Systems

- Use data from sensors and the onboard AI
- Understand the cause of failures
- Basic Understanding of aircraft systems

Machine Learning

- Collecting and Prepping the Dataset
- Decide the model
- Choosing and Training the model
- Training and Evaluating the model
- Parameter Tuning
- Prediction

Extra attributes

- Monitor and predict climatic conditions as a added attribute of analysis
- Consider Human Factors

4 Prioritize

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