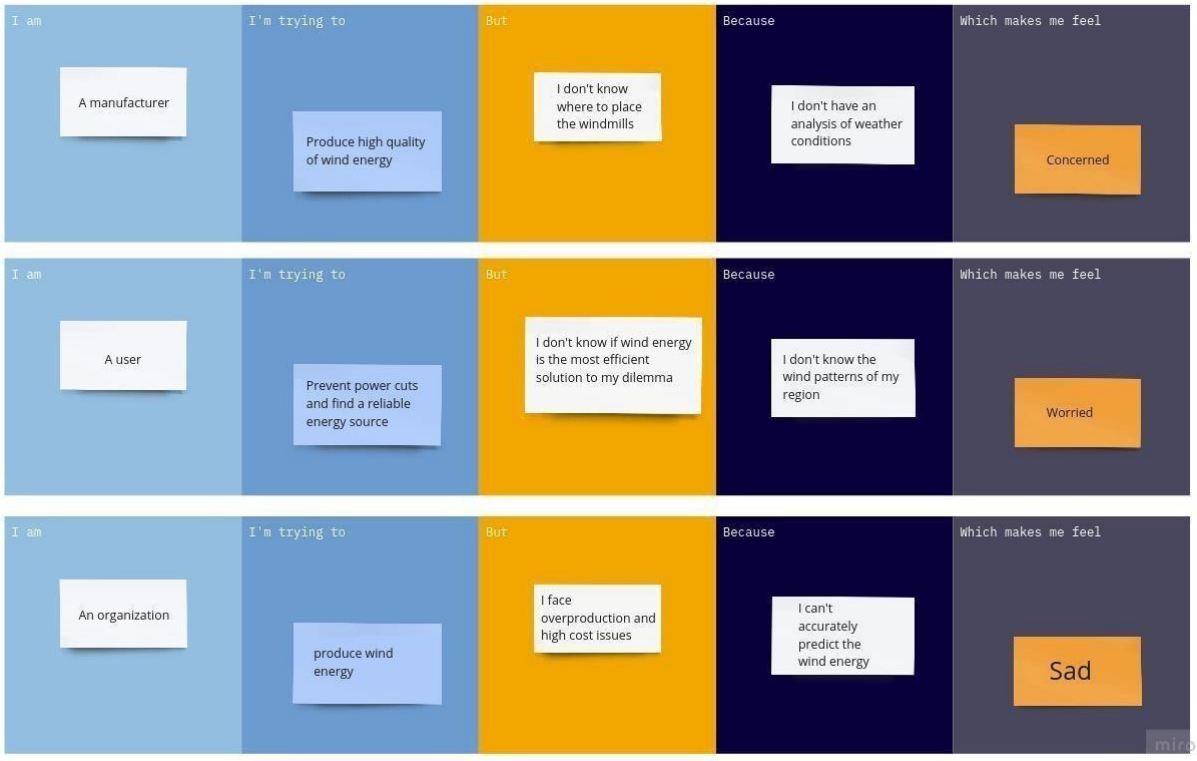
Ideation Phase
Define the Problem Statements

Date	10 November 2022
Team ID	PNT2022TMID38044
Project Name	Predicting the energy output of wind turbine based on weather condition
Maximum Marks	2 Marks

Problem Statement:

The prediction of wind power plays an indispensable role in maintaining the stability of the entire power grid. Due to its renewable resources and environmental friendliness, wind speed/power has gained increasing interest worldwide. The wind industry is rapidly expanding into a large-scale industry as a result of the fast-rising amount of installed wind generating capacity worldwide. When it comes to scheduling power systems and other practical aspects of wind energy conversion, such as the dynamic management of wind turbines, reliable short-term wind speed forecasts are essential. A precise forecast is required to solve issues with variable energy production brought on by changing weather patterns. The wind speed has a big impact on how much power is produced by the wind. Despite being quite nonlinear, wind speed exhibits a consistent pattern over a specific amount of time. Thus, wind power forecasting plays a key role in dealing with the challenges of balancing supply and demand in any electricity system, given the uncertainty associated with the wind farm power output.



Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	manufacturer	Produce high quality of wind energy	I don't know where to place the windmills	I don't have an analysis of weather conditions	Concerned
PS-2	user	Prevent power cuts and find a reliable energy resource	I don't know if wind energy is the most efficient solution to my dilemma	I don't know the wind patterns of my region	Worried
PS-3	organization	Produce wind energy	I face overproduction and high-cost issues	I can't accurately predict the wind energy	sad