

Ideation Phase

Brainstorm & Idea Prioritization Template

Date	18 September 2022
Team ID	Team-591663
Project Name	AI-Driven Optimization Of 5G Resource Allocation For Network Efficiency
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization:

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

1

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

PROBLEM

5G technology is rapidly advancing, bringing immense potential for innovation. However, to harness its benefits for smart cities, autonomous vehicles, and IoT, efficient allocation of 5G network resources is essential. The challenge lies in balancing coverage, speed, and latency across diverse applications. An AI-driven optimization system is crucial to achieve seamless connectivity, improve network performance, and successfully integrate 5G technology into various domains.



Key rules of brainstorming

To run an smooth and productive session



Defer judgment.



Encourage wild ideas.



Go for volume.



Listen to others.



Stay in topic.



If possible, be visual.

Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

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

🕒 10 minutes

Person 1

AI-Driven
Dynamic
Resource
Allocation

Collaborative
Resource
Sharing

Crowdsourced
Network
Optimization

Person 2

Resource
Priority
Framework

Network
Slicing for
Customization

Cross-
Technology
Resource
Management

Person 3

Learning
Alorithms for
Predictive
Modeling

User-Centric
Resource
Optimization

Feedback-
Driven
Optimization

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 can break it up into smaller sub-groups.

🕒 20 minutes

Analyze real-world 5G network traffic data and propose optimization strategies to improve resource allocation, considering factors such as peak usage times, types of applications, and geographic location.

Focus on optimizing resource allocation for IoT devices in a 5G network, considering the unique requirements and communication patterns of IoT applications to enhance efficiency and reduce latency.

Compare and evaluate different resource allocation algorithms (e.g., greedy algorithms, machine learning-based approaches) for 5G networks, analyzing their efficiency, performance, and adaptability to varying network conditions.

Investigate the impact of Quality of Service (QoS) requirements on resource allocation in a 5G network and design algorithms that prioritize resources to meet specific QoS levels for various applications.

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.

🕒 20 minutes

