

STRUCTURE OF UNSOLICITED PROBLEM STATEMENT

1. BACKGROUND TO THE STUDY

Purpose: Set the context. Explain the field, current trends, and why the area matters. Keep it broad, then narrow to your topic.

What to include:

- General overview of the field
- Current practices or trends
- Importance or relevance of the topic

Example:

Residential electricity consumption has increased rapidly due to urbanization and the growing use of electrical appliances. Managing energy efficiently has become a key concern for both homeowners and utility providers. Recent advances in IoT technology enable real-time monitoring and control of electrical devices, offering opportunities to optimize energy usage and reduce costs.

2. STATEMENT OF THE PROBLEM

Purpose: Clearly define the **specific problem** your project addresses. Be precise and avoid vague or emotional statements.

What to include:

- Specific issue
- Who it affects
- Why it's a problem

Example:

Existing residential energy systems often lack intelligent monitoring and control, leaving homeowners unable to efficiently manage electricity consumption. Current solutions require manual effort, leading to higher energy bills and inefficient use of power.

3. JUSTIFICATION / IMPACT OF THE PROBLEM

Purpose: Explain **why the problem matters**. Show the consequences of leaving it unresolved.

What to include:

- Effects on users, organizations, or society
- Practical or economic consequences
- Environmental or operational relevance

Example:

Inefficient energy consumption increases electricity costs for households and contributes to higher peak demand on the power grid. Reducing energy wastage can help save money, improve grid stability, and reduce environmental impact.

4. GAP IN EXISTING SOLUTIONS

Purpose: Show that **current solutions are insufficient**. This justifies your project.

What to include:

- What current systems do
- What they fail to do
- Limitations of existing technology

Example:

Most existing smart meters and home energy systems focus on basic monitoring but lack predictive analytics and automated recommendations. They are also often platform-dependent and not user-friendly, limiting their practical utility for homeowners.

5. PROPOSED SOLUTION / FOCUS OF THE STUDY

Purpose: Briefly outline **what your project will do**. Keep it high-level and **no deep technical details yet**.

What to include:

- General description of your project
- How it addresses the problem
- Main objectives

Example:

This project proposes an IoT-based smart energy management system that collects real-time data from appliances, analyzes usage patterns, and provides automated recommendations to optimize energy consumption and reduce electricity costs.

Note: *You can include images where possible if you have.*