

Simple Guide to Writing & Defending Your BSc Final Year Project (Computer Science – Nigeria)

1. First, Understand This Truth

Your project **does NOT** need to be entirely new.

What makes your project valuable is:

👉 **The gap you are solving**

Even if 10 people worked on similar topics, yours is different if:

- You solve a different problem
 - You use a different method
 - You apply it in a different environment
-

2. What is a Research Gap? (Simple Meaning)

A **research gap** is:

👉 *Something previous researchers did not cover well or did not solve completely.*

Think of it like:

“What is missing in what others have done?”

7 Types of Research Gaps (Simplified)

1. Population Gap

👉 Previous work focused on a certain group, but ignored another.

Prepared By Laytex

Example:

Past systems focused on universities, but yours focuses on **secondary schools in Nigeria**.

2. Context Gap

👉 Same problem, but different environment/location.

Example:

A system built for abroad, but you adapt it to **Nigeria (poor internet, local challenges, etc.)**

3. Methodological Gap

👉 Others used one method, you use a better or different one.

Example:

They used manual processing → you use **AI / automation / better algorithm**

4. Mechanism Gap

👉 People know *what happens*, but not *how it happens*.

Example:

They know fraud happens → you explain and build a system showing **how fraud is detected**

5. Moderator Gap

👉 A factor that affects results was ignored.

Example:

User experience affects system adoption, but previous work ignored it → you include **UI/UX testing**

6. Temporal Gap

👉 Research is outdated.

Example:

Studies from 2015 → you update with **modern tools like cloud, AI, mobile-first design**

7. Contradictory Findings Gap

👉 Previous studies disagree.

Example:

One says system is effective, another says it's not → you test and clarify the truth.

3. How to Show Your Gap in Your Project

When writing:

Step 1: Review Past Work

- Read journals, articles, past projects
- Focus on **last 5–6 years**

Step 2: Identify What They Missed

Ask:

- What didn't they cover?
- What can be improved?

Step 3: State Your Gap Clearly

Example:

“Existing systems do not consider low internet environments in Nigeria. This project addresses this gap by designing an offline-first solution.”

Step 4: Show Your Unique Solution

Explain:

- What you are doing differently
 - Why your method is better
-



4. Literature Review Made Easy

Your literature review should:

- Include **at least 15–20 references**
- Compare past works
- Highlight their weaknesses (gaps)

Pro Tip:

👉 Pick **2–3 key papers/projects**

- Study them well
- Understand their:
 - Method
 - Tools
 - Results

Because lecturers may ask:

“Explain one of your references.”



5. Core Sections of Your Project

1. Problem Statement

👉 What problem are you solving?

Keep it simple:

“Manual attendance systems are inefficient and prone to errors...”

2. Aim & Objectives

Aim (1 sentence):

To design and implement a smart attendance system.

Objectives (clear & action-based):

- To design the system architecture
 - To implement the system
 - To evaluate system performance
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3. Methodology

👉 HOW you solve the problem

Include:

- Tools (Python, Java, React, etc.)
 - Techniques (Machine Learning, CRUD system, API, etc.)
 - Design approach (Agile, Waterfall)
-

4. System Design

- Architecture diagram
 - Database design
 - UI screens
-

5. Implementation

- Code explanation
 - Features
-

6. Testing & Evaluation

- Did it work?
 - Accuracy? Speed? User feedback?
-

6. Know Your Algorithm (Very Important)

Lecturers love asking:

“What algorithm did you use?”

Even if simple:

- Search algorithm
- Sorting
- Machine learning model
- Authentication logic

👉 Be ready to explain:

- What it does
 - Why you chose it
-

7. How to Defend Your Project (Very Important)

These are the **most common questions** 👉

1. What is your problem statement?

👉 Be direct and confident

2. What gap are you solving?

👉 Mention one or more clearly:

- “This project solves a **context gap** and **methodological gap**...”
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3. What are your objectives?

👉 Short and clear (don't over-explain)

4. Explain your methodology

👉 Walk them through your approach step-by-step

5. Why is your project different?

👉 Talk about your **gap + solution**

6. Which references did you use?

👉 Mention at least 1–2 confidently

7. What algorithm did you use?

👉 Explain simply (no over-grammar)



8. Smart Tips to Pass Your Defense

- Speak **clearly and confidently**
- Don't cram → **understand**
- Use **real-life examples**
- If you don't know something:

“I did not explore that area deeply, but it can be considered for future work.”



9. Bonus Tips (From Experience)

- Choose a **practical project** (web app, mobile app, AI system, etc.)
 - Focus on **real Nigerian problems**
 - Add:
 - UI/UX (very important today)
 - Performance improvements
 - Scalability ideas
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Final Mindset

Your project is not about:

✗ Being the first in the world

It is about:

- ✓ Solving a **clear problem**
- ✓ Identifying a **research gap**
- ✓ Providing a **better solution**

Research Gap vs Research Question (Simple Explanation)

Research Gap	Research Question
The problem or missing knowledge	The question your study will answer
What researchers have not fully studied	What you want to investigate
The “hole” in existing research	The pathway to fill the hole
A statement	A question
Explains what is lacking	Explains what you want to discover

Simple Formula

Research Gap

“What is missing?”

Research Question

“What do I need to ask to solve or understand what is missing?”

Example 1 — Healthcare

GAP

Although mobile health apps have been tested in urban settings, their effectiveness in rural areas with limited internet access remains underexplored.

RESEARCH QUESTION

How effective are SMS-based reminders for diabetes management in rural Nigeria compared to app-based interventions?

Example 2 — E-Learning System

GAP

Existing e-learning platforms are designed mainly for stable internet environments and do not adequately support students in areas with poor connectivity.

RESEARCH QUESTION

How can an offline-first e-learning platform improve learning accessibility for students in rural Nigerian universities?

Example 3 — Cybersecurity

GAP

Many studies focus on cybersecurity in large organizations, but limited research exists on cybersecurity awareness among small businesses in Nigeria.

RESEARCH QUESTION

What is the level of cybersecurity awareness among small business owners in Lagos State?

Example 4 — Online Voting System

GAP

Previous online voting systems focused mainly on security, while usability and accessibility for elderly users received little attention.

RESEARCH QUESTION

How can a user-friendly online voting interface improve participation among elderly voters?

Example 5 — Fintech / Mobile Banking

GAP

Most mobile banking studies emphasize urban users, while the financial technology adoption behavior of rural traders remains understudied.

RESEARCH QUESTION

What factors influence mobile banking adoption among rural market traders in Nigeria?

Example 6 — AI in Education

GAP

Although AI chatbots are increasingly used in education, their impact on students' independent critical thinking is not fully understood.

RESEARCH QUESTION

How does the use of AI chatbots affect critical thinking skills among undergraduate students?

Example 7 — Attendance Management System

GAP

Traditional attendance systems are prone to impersonation and manual errors, yet low-cost biometric alternatives for Nigerian schools are insufficiently explored.

RESEARCH QUESTION

Can a fingerprint-based attendance system reduce impersonation and attendance fraud in Nigerian universities?

Example 8 — Social Media & Mental Health

GAP

Existing studies on social media and mental health focus mostly on Western countries, with limited evidence from African university students.

RESEARCH QUESTION

What is the relationship between social media usage and mental health among Nigerian undergraduates?

Example 9 — Transportation System

GAP

Current transport tracking systems depend heavily on internet connectivity, making them unreliable in low-network areas.

RESEARCH QUESTION

How can GPS and SMS technologies be combined to improve transport tracking in low-connectivity regions?



Example 10 — E-Commerce

GAP

Many e-commerce platforms focus on urban logistics, while delivery challenges in semi-urban Nigerian communities remain poorly addressed.

RESEARCH QUESTION

What strategies can improve last-mile delivery efficiency in semi-urban Nigerian communities?



Quick Trick to Identify Them Easily

If it sounds like:

“Researchers have not fully studied...”

👉 It is probably a **Research Gap**

If it sounds like:

“How does...”

“What is...”

“Can...”

“To what extent...”

👉 It is probably a **Research Question**



Relationship Between Both

The Gap creates the Question.

Example:

GAP

Online learning platforms consume too much data.



QUESTION

How can data consumption be reduced in online learning systems?



In Project Defense

Lecturers may ask:

“What gap is your project solving?”

You explain:

- What previous studies missed
-

“What are your research questions?”

You explain:

- The questions your project seeks to answer
-



Final Shortcut

Research Gap

= The missing piece

Research Question

= The investigation to find the missing piece