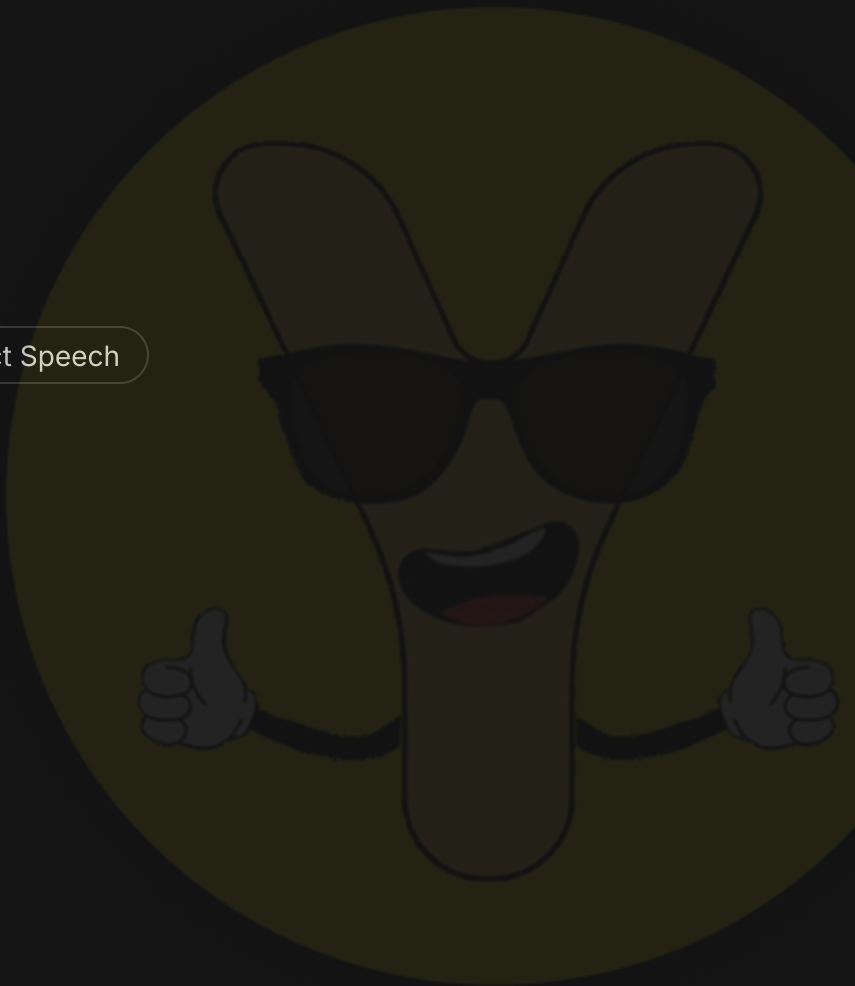
AKTU · 2ND YEAR · BAS301 / BAS401

Technical Communication

Unit 3 — Comprehensive Reading and Grammar

- Reading Comprehension of Technical Material
- Techniques for Effective Reading: Skimming and Scanning
- Interpreting Visual Data: Graphs, Tables, and Charts
- Grammar and Usage: Sentence Structure and Errors
- Vocabulary Building: Synonyms, Antonyms, and Technical Jargon
- Active and Passive Voice, Direct and Indirect Speech



DECODED BY

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Founder, Ycotes · Gold Medalist in Artificial Intelligence, IIT Madras · taught 10,000+ students

Unit 3: Comprehensive Reading and Grammar

Welcome to Unit 3 of Technical Communication, focusing on advanced reading strategies, visual data interpretation, and core grammatical precision.

- Reading Comprehension of Technical Material
- Techniques for Effective Reading: Skimming and Scanning
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Technical Material Reading Comprehension

TECHNICAL COMPREHENSION

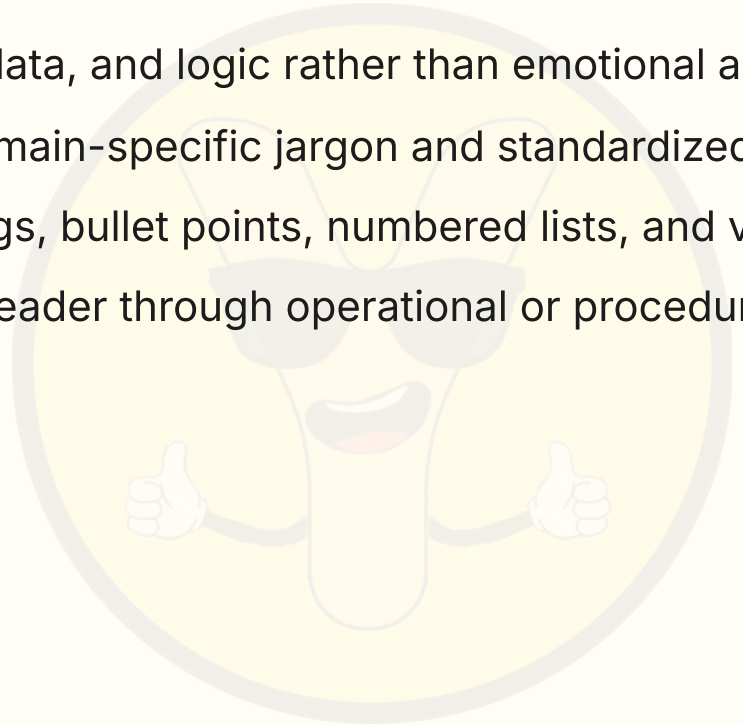
The ability to read, analyze, interpret, and evaluate specialized documents containing dense data, complex terminology, and logical structures.

- Requires extracting primary arguments from objective, fact-driven texts.
- Involves understanding procedural steps, technical descriptions, and analytical reports.
- Demands active cognitive engagement rather than passive reading.

Characteristics of Technical Texts

Technical documents differ significantly from narrative or literary texts in structure and purpose.

- Objective Tone: Focuses on facts, data, and logic rather than emotional appeal.
- Specialized Vocabulary: Utilizes domain-specific jargon and standardized acronyms.
- Structured Layout: Employs headings, bullet points, numbered lists, and visual aids.
- Action-Oriented: Often guides the reader through operational or procedural instructions.



Skimming: Rapid Overview

SKIMMING

A fast reading technique used to obtain a general overview or gist of a technical document without reading every word.

- Reading speed is typically three to four times faster than normal reading.
- Focuses on titles, headings, subheadings, abstract, introduction, and conclusion.
- Useful for deciding if a document is relevant to your research or task.

Scanning: Targeted Search

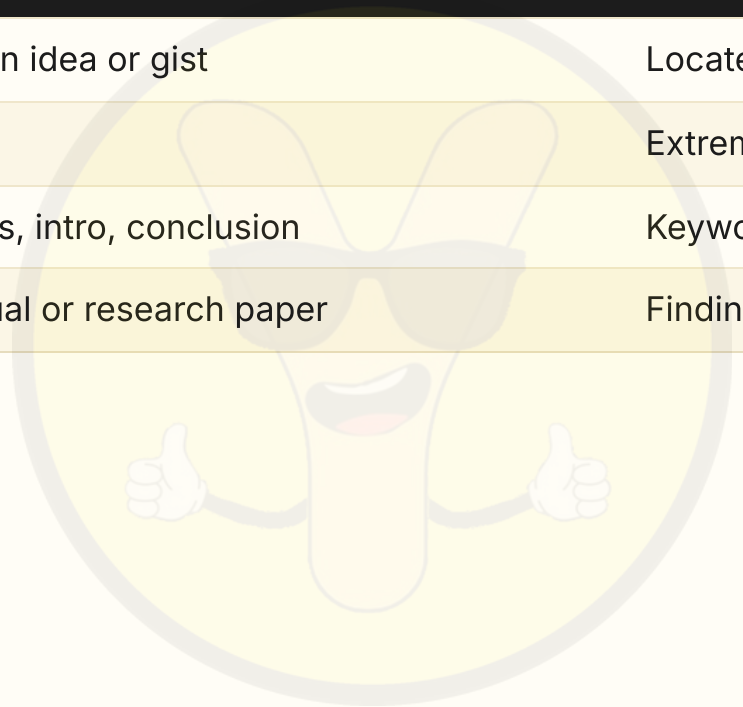
SCANNING

A rapid reading technique used to locate specific facts, figures, keywords, or data points within a text.

- The reader moves their eyes quickly down the page looking for predetermined cues.
- Ignores irrelevant sections, concentrating entirely on the target information.
- Highly effective for finding dates, error codes, specific parameters, or formulas.

Skimming vs Scanning Differences

Feature	Skimming	Scanning
Primary Goal	Get the overall main idea or gist	Locate specific data or keywords
Reading Speed	Extremely fast	Extremely fast, targeted
Attention Focus	Structure, headings, intro, conclusion	Keywords, numbers, specific terms
Use Case	Previewing a manual or research paper	Finding a specific error code in a log



Interpreting Visual Data

DATA VISUALIZATION

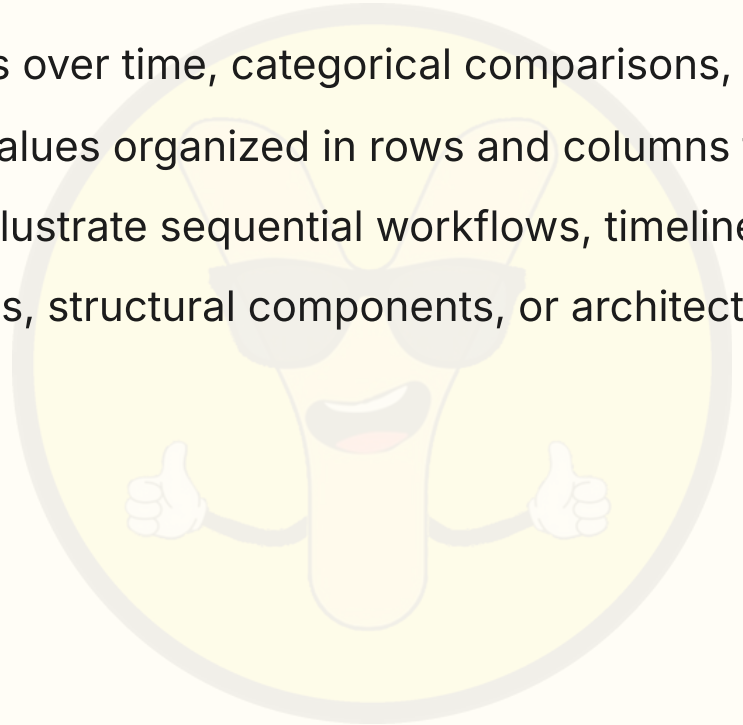
The graphical representation of quantitative and qualitative information to communicate complex relationships clearly.

- Reduces cognitive load by turning large datasets into easily digestible formats.
- Highlights trends, correlations, comparisons, and distributions instantly.
- Crucial component of professional reports, proposals, and technical presentations.

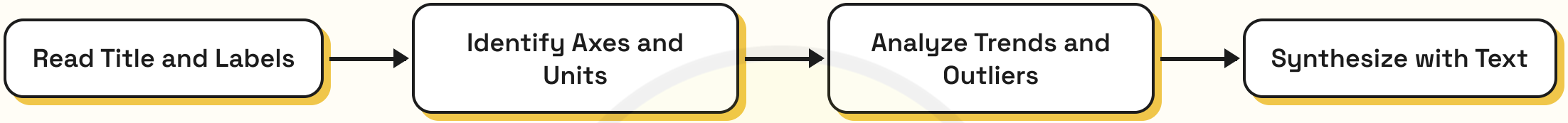
Types of Visual Data in Technical Reports

Different data types require specific visual representations to ensure accurate communication.

- Graphs (Line, Bar, Pie): Show trends over time, categorical comparisons, and proportions.
- Tables: Display precise numerical values organized in rows and columns for exact reference.
- Charts (Flowcharts, Gantt charts): Illustrate sequential workflows, timelines, and hierarchies.
- Diagrams: Map out physical systems, structural components, or architectural layouts.



Steps in Interpreting Visual Data



A systematic approach to analyzing any technical chart or graph before writing about it.

Sentence Structure and Errors

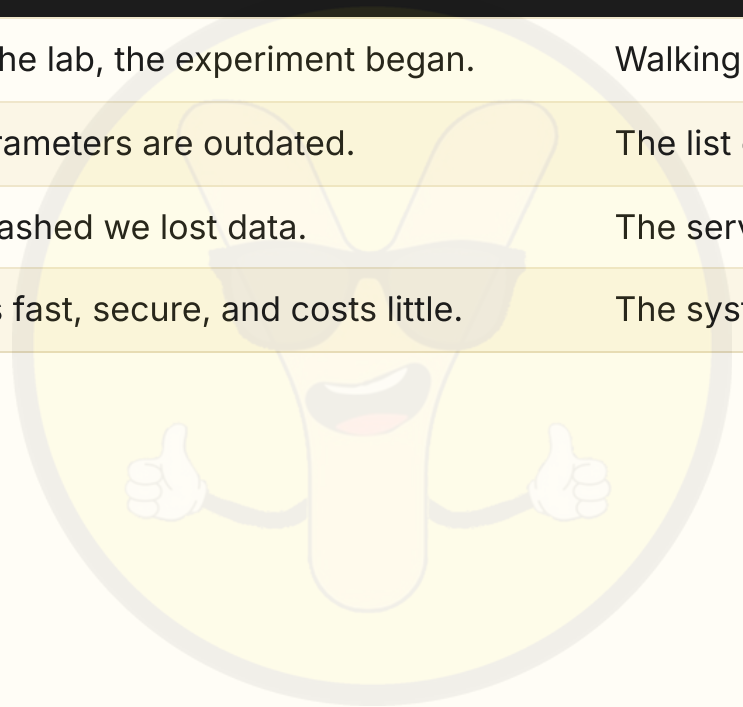
SYNTACTIC INTEGRITY

The adherence to grammatical rules regarding word order, phrase formation, and clause connection in professional writing.

- Sentences must contain a clear subject and a finite verb.
- Modifiers must be placed close to the words they modify to prevent ambiguity.
- Professional writing requires concise, varied sentence structures (simple, compound, complex).

Common Grammatical Errors in Technical Writing

Error Type	Incorrect Example	Corrected Version
Dangling Modifier	Walking into the lab, the experiment began.	Walking into the lab, I began the experiment.
Subject-Verb Agreement	The list of parameters are outdated.	The list of parameters is outdated.
Run-on Sentence	The server crashed we lost data.	The server crashed; consequently, we lost data.
Faulty Parallelism	The system is fast, secure, and costs little.	The system is fast, secure, and economical.



Vocabulary Building: Precision and Jargon

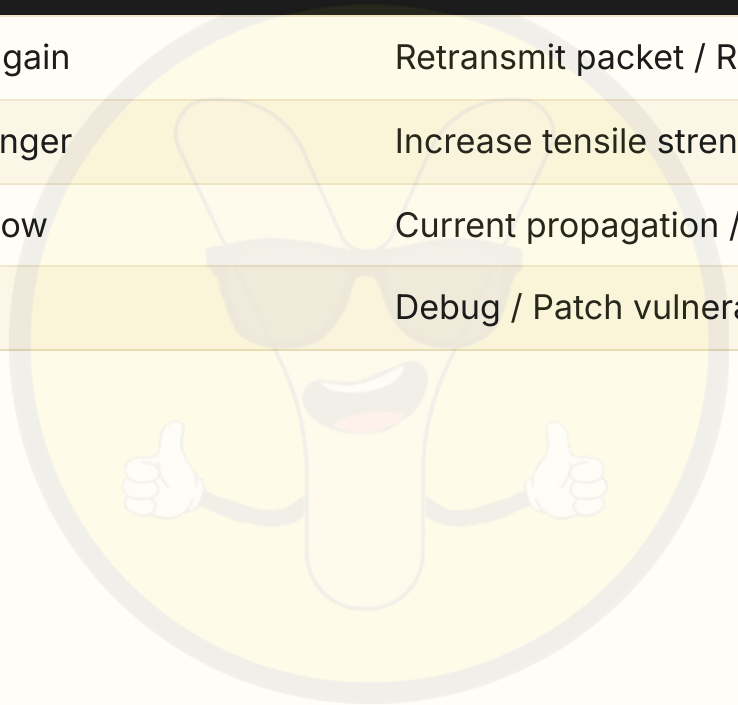
TECHNICAL VOCABULARY

The deliberate expansion of professional lexicons using exact synonyms, precise antonyms, and domain-specific terminology.

- Synonyms provide variety and precision; antonyms clarify limits and contrasts.
- Technical jargon standardizes communication within specialized fields.
- Jargon should be avoided when writing for non-technical stakeholders.

General vs Technical Jargon

Context	General Term	Technical Jargon
Computing	Send data again	Retransmit packet / Resend buffer
Manufacturing	Make it stronger	Increase tensile strength
Electronics	Electricity flow	Current propagation / Voltage drop
Software	Fix a bug	Debug / Patch vulnerability



Active and Passive Voice

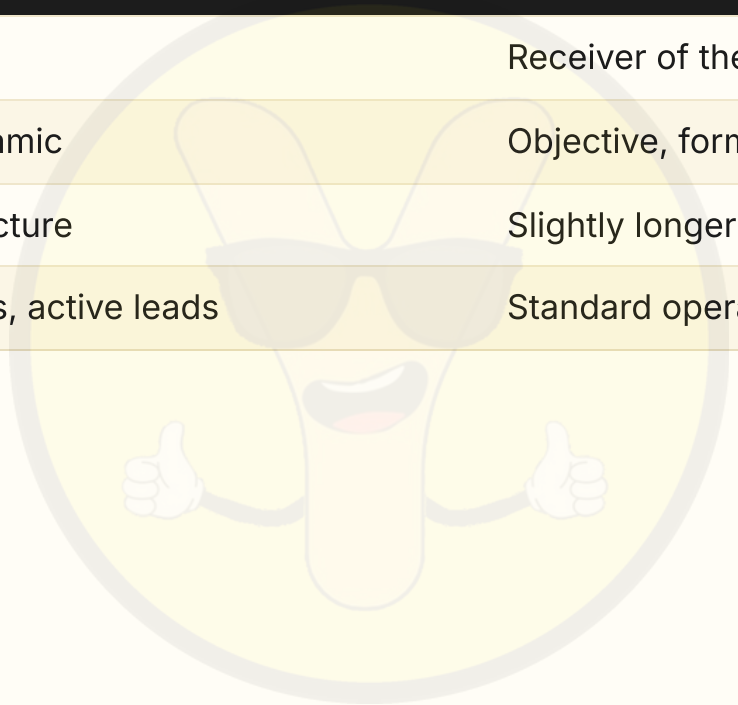
VOICE IN TECHNICAL WRITING

The grammatical form of a verb that indicates whether the subject performs the action (active) or receives it (passive).

- Active Voice: Subject performs action (e.g., $extThetechniciantestedthecircuit$).
- Passive Voice: Subject receives action (e.g., $extThecircuitwastestedbythetechnician$).
- Passive voice emphasizes the object and process, maintaining objectivity in scientific reports.

Active vs Passive Voice Usage

Feature	Active Voice	Passive Voice
Focus	Doer of the action	Receiver of the action / Process
Tone	Direct, engaging, dynamic	Objective, formal, impersonal
Length	Shorter sentence structure	Slightly longer sentence structure
Standard Use	Instructions, proposals, active leads	Standard operating procedures, lab reports



Direct and Indirect Speech

DISCOURSE TRANSFORMATION

The conversion of spoken or quoted statements (direct speech) into reported statements (indirect speech).

- Direct Speech quotes the exact words using quotation marks.
- Indirect Speech paraphrases the utterance, adjusting pronouns, tenses, and time markers.
- Essential for summarizing interviews, client requirements, and technical specifications.

Rules for Converting Direct to Indirect Speech

Direct Speech	Indirect Speech Conversion Rule
Present Simple: $extHesays,"Itestcode."$	Past Simple: $extHesaidthathetestedcode.$
Present Continuous: $extShesaid,"Itisworking."$	Past Continuous: $extShesaidthatitwasworking.$
Past Simple: $extHesaid,"Theserverfailed."$	Past Perfect: $extHesaidthattheserverhadfailed.$
Pronoun Shift	First/Second person pronouns change to match the reporter.

Exam Corner

Q1 Define technical reading comprehension and explain the key differences between skimming and scanning with suitable examples.

Q2 Discuss the significance of visual data in technical reports. How do you interpret complex graphs and tables?

Q3 Identify and correct the errors in the following: (a) Each of the files are corrupted. (b) Running toward the server, the alarm sounded.

Q4 Differentiate between active and passive voice. When is passive voice preferred in technical documentation? Give examples.

Q5 Convert the following into indirect speech: The project manager said, "We will deploy the new software update tomorrow morning."

Q6 Explain the role of technical jargon in professional communication. State two advantages and two disadvantages of using jargon.

Q7 Write short notes on: (i) Dangling modifiers, (ii) Synonyms and antonyms in vocabulary building.

Unit 3 done. You are exam-ready.

Revise the Exam corner once more, then open Unit 4 on theycotes.com. Every AKTU subject, unit by unit, free. Notes by Chirag Jain, Ycotes.

