

MODULE 4

MODULE PLAN AND CONTENT

ALGORITHM - SQL



Version 1.0

1. MODULE PLAN

Module Plan	
Module Title	Algorithm
Duration	1.5 hours (90 minutes)
Learning Objectives	By the end of this module, participants will be able to: - Understand what an algorithm is in computer science. - Recognize how algorithms are used in everyday life (e.g., cooking recipes, directions, online searches). - Identify basic steps in creating an algorithm (input → process → output). - Learn how data can be organized and changed step by step. - Develop simple problem-solving skills using algorithms.
Lesson Plan	SQL and Databases Training Module for Deaf Youth Duration: ~90 minutes (intro + 2 hands-on blocks + wrap-up)
	0. Welcome & Setup (Intro) — 10 minutes • Objective: Introduce the idea of algorithms and connect with everyday experiences. • Main Point to Cover: An algorithm is a set of step-by-step instructions to solve a problem. • Activity: Icebreaker – Ask participants to explain step-by-step “How to brush your teeth” or “How to tie your shoes.”

Module Plan	
	• Teaching Methodology: Interactive discussion, visual examples on slides, use of sign language and captions. 1. Getting Data with SELECT — 35 minutes • Objective: Understand what data is and how it is used in algorithms. • Main Point to Cover: Data can be numbers, text, images, sounds; algorithms take <i>input</i> data, process it, and give <i>output</i>. • Demo Examples: • Entering numbers into a calculator → getting a result. • Searching a word on Google → seeing a list of results. • Activity: Participants write down 3 examples of “data” they use every day (e.g., messages, photos, numbers). • Teaching Methodology: Visual aids, simple diagrams (input → process → output), real-life examples, group sharing. 2. Changing Data Safely — 35 minutes • Objective: Learn how algorithms can transform data and why accuracy/safety is important. • Main Point to Cover: Algorithms process data step by step; if instructions are wrong (bugs), results will be wrong. Safe data handling is key.

Module Plan	
	• Demo Examples: • ATM: Input (PIN + amount) → Process → Output (cash). • Logging in with a password (correct vs. wrong password). • Activity: In pairs, participants create simple “if-then” instructions (e.g., <i>If password = correct → open account; if not → show error</i>). • Teaching Methodology: Role-play demonstrations, guided examples, group feedback, use of step cards/visual flowchart symbols.
Materials Needed	• Whiteboard or flipchart • Markers and sticky notes • Printed handouts with key terms and visuals • Computer + projector (for video and slides)

2. MODULE CONTENT

Content	Description	Content
Lesson Content	Key Digital Terms:	Key Digital Terms: • Algorithm • Data (input / output) • Step-by-step instructions • Flowchart • Efficiency • Error (bug)
Video summary	Youtube Links	• What is an Algorithm? – Computer Science Basics (YouTube, Eng Subs) • Algorithms in Everyday Life – Easy Explanation (YouTube, Eng Subs)
Activity		• Goal: Participants explain step-by-step how to solve a problem. • Scenario examples: ○ “How to prepare a cup of tea.” ○ “How to find a friend’s house using Google Maps.” ○ “How to log in to a computer safely.” • Each scenario requires: ○ Define input → process → output. ○ Identify possible mistakes (bugs).

Content	Description	Content
Assessment	Quiz	1. What is an algorithm? A. A computer brand B. Step-by-step instructions to solve a problem ✓ C. A type of data D. A password 2. Which of these is an everyday example of an algorithm? A. A cooking recipe ✓ B. A football C. A music video D. A picture 3. What do we call the information we put into an algorithm? A. Output B. Input ✓ C. Error D. Flowchart 4. What happens if an algorithm has a mistake (bug)? A. It works faster

Content	Description	Content
		B. It stops or gives wrong results ✓ C. It becomes safer D. It disappears 5. What is the correct order of an algorithm? A. Output → Process → Input B. Process → Input → Output C. Input → Process → Output ✓ D. Input → Output → Process