SCERT Kerala · Class 11 · Computer Science

Computer Science

ORIGINAL STUDY COMPANION
PADIKAM
CLASS 11 | SCIENCE
Computer Science 2026
Kerala SCERT / prescribed NCERT core lessons
13 chapter lessons
Quick explanations, core points, exam practice and chapter-specific notation in one consistent format.
Padikam explanations are independently written. Official textbooks are used as the coverage map, chapter sequence and terminology reference.

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Study rhythm
Read the quick explanation, recall the core points aloud, then answer the prompts without looking back. Use the official textbook links for full prescribed readings, activities and diagrams.
Textbook and verification links
1. https://scert.kerala.gov.in/hss-2026/
2. https://drive.google.com/file/d/1D9jvaviFxlMgZWahPjZAJEeU3gXvm1ER/view

CHAPTER 01
Introduction to Computing
Quick understanding
Trace computing from counting devices to intelligent networked systems and distinguish major uses.
Core points Check your learning
Generations are classified by enabling technology. Build a generation-technology timeline.
Stored-program architecture keeps data and Explain why an algorithm is required instructions in memory. before programming.
Computers support data processing, problem solving, communication and intelligent decisions.
One-line recall Generations are classified by enabling technology.

CHAPTER 02
Data Representation and Boolean Algebra
Quick understanding
Represent numbers, text and logic in binary and simplify digital conditions.
Core points Check your learning
Place value supports conversion between number Convert between binary, octal, decimal

systems. and hexadecimal.
Signed values and character codes need agreed Simplify a Boolean expression and draw
encodings. its logic circuit.
Boolean laws and truth tables model digital circuits.
Equation and notation
1 byte = 8 bits
A + A = 1
A·A = 0
SYMBOLS AND UNITS
bit: binary digit byte: group of 8 bits
A: Boolean input, either 0 or 1 Overbar: NOT; +: OR; dot: AND
One-line recall Place value supports conversion between number systems.
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CHAPTER 03
Computer System Organisation
Quick understanding
Connect processor, memory, buses, storage and input-output devices in a functioning system.
Core points Check your learning
CPU contains ALU, control unit and registers. Label a functional block diagram.
Memory hierarchy trades speed, capacity and cost. Compare primary and secondary
memory.
System buses carry data, address and control
signals.
One-line recall CPU contains ALU, control unit and registers.
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CHAPTER 04
Getting Started with Python
Quick understanding
Set up Python, use the interpreter and understand the edit-run-debug cycle.
Core points Check your learning
Interactive mode tests small statements; script mode Run a first input-output script.
stores programs.
Classify and correct sample errors.
Indentation is part of Python syntax.
Errors may be syntax, runtime or logical.
Code pattern
print("Hello")
name = input("Name: ")
One-line recall Interactive mode tests small statements; script mode stores programs.
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CHAPTER 05
Python Fundamentals
Quick understanding
Use values, variables, data types, operators and expressions correctly.
Core points Check your learning
Assignment binds a name to a value. Predict expression values and types.
Type affects valid operations and results. Write a program using input, conversion
and formatted output.
Operator precedence can be made explicit with
parentheses.
Code pattern
age = int(input("Age: "))

total = price * quantity
One-line recall Assignment binds a name to a value.
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CHAPTER 06
Control Statements
Quick understanding
Direct execution through selection and repetition.
Core points Check your learning
if/elif/else handles alternatives. Trace a nested conditional.
for suits iteration over a sequence; while suits Write a loop for a numerical pattern or
condition-controlled repetition. validation task.
break and continue change loop flow and should be
used deliberately.
Code pattern
if mark >= 40:
print("Pass")
for i in range(1, 6):
print(i)
One-line recall if/elif/else handles alternatives.
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CHAPTER 07
Functions and Modules
Quick understanding
Divide a program into reusable named units with parameters, return values and imported tools.
Core points Check your learning
Afunction should have one clear responsibility. Write and test a function with default
arguments.
Parameters receive input; return communicates
output. Use a standard module in a short
program.
Modules organise reusable definitions.
Code pattern
def area(r):
return 3.14 * r * r
import math
One-line recall Afunction should have one clear responsibility.
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CHAPTER 08
Strings in Python
Quick understanding
Process text as immutable indexed sequences.
Core points Check your learning
Indexing selects one character; slicing selects a Count vowels without built-in count.
range.
Use slicing to test a palindrome.
String methods return new values because strings
are immutable.
Traversal and membership solve many text
problems.
Code pattern
word[0]
word[::-1]

"py" in word
One-line recall Indexing selects one character; slicing selects a range.
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CHAPTER 09
Lists
Quick understanding
Store and modify ordered collections and use methods, slicing and traversal.
Core points Check your learning
Lists are mutable and may contain mixed types. Remove duplicates while preserving order.
Aliasing and copying are different.
Trace mutations through two list
Nested lists model tables and matrices.
variables.
Code pattern
items.append(value)
copy_items = items.copy()
One-line recall Lists are mutable and may contain mixed types.
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CHAPTER 10
Tuples
Quick understanding
Use immutable ordered collections for fixed records and multiple return values.
Core points Check your learning
Tuple packing and unpacking simplify assignments. Swap values using tuple unpacking.
Aone-item tuple needs a comma. Compare tuple and list use cases.
Immutability makes accidental modification less likely.
Code pattern
point = (3, 4)
x, y = point
One-line recall Tuple packing and unpacking simplify assignments.
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CHAPTER 11
Dictionaries and Sets
Quick understanding
Model key-value associations and unique unordered collections.
Core points Check your learning
Dictionary keys must be unique and hashable. Build a frequency dictionary.
Sets remove duplicates and support mathematical Use set operations to compare two operations. groups.
Membership testing is efficient in dictionaries and sets.
Code pattern
freq[ch] = freq.get(ch, 0) + 1
common = A & B
One-line recall Dictionary keys must be unique and hashable.
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CHAPTER 12
Sorting and Searching
Quick understanding
Compare algorithms by method, correctness and efficiency.

Core points Check your learning
Linear search checks sequentially; binary search Trace binary search for a target.
requires sorted data.
Implement and compare two elementary
Sorting algorithms differ in comparisons and swaps. sorts.
Tracing reveals invariants and edge cases.
Equation and notation
Binary search time grows as O(log n)
Linear search time grows as O(n)
SYMBOLS AND UNITS
n: number of data items O(n): growth proportional to n
O(log n): logarithmic growth; not a time unit
One-line recall Linear search checks sequentially; binary search requires sorted data.
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CHAPTER 13
Computers and Society
Quick understanding
Evaluate computing through access, privacy, intellectual property, safety and environmental impact.
Core points Check your learning
Digital citizenship combines rights and Analyse an ethical computing case.
responsibilities.
Prepare guidelines for responsible digital
Personal data needs informed collection and behaviour.
protection.
FOSS, licensing and accessibility shape
participation.
One-line recall Digital citizenship combines rights and responsibilities.
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