SCERT Kerala · Class 12 · Computer Science

Computer Science

ORIGINAL STUDY COMPANION
PADIKAM
CLASS 12 | SCIENCE
Computer Science
Kerala SCERT / prescribed NCERT core lessons
12 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://www.hsslive.in/2015/05/plus-two-2-new-text-booksscert.html
2. https://samagra.kite.kerala.gov.in/
3. https://www.hsslive.in/2015/06/plus-two-xii-computer-science-notes.html

CHAPTER 01
Structures and Pointers
Quick understanding
C++ structures group related fields, while pointers store addresses and support dynamic access to data.
Core points Check your learning
A structure models a record with named members. Explain the central idea of Structures and Pointers in your own words.
Address and dereference operators connect a pointer with an object. Apply one idea from Structures and Pointers to a textbook-style example or source.
Pointer type controls how an address is interpreted.
Code pattern

```
struct Student {
int roll;
float mark;
};
Student s{12, 88.5};
```

Student *p = &s;
cout << p->mark;
One-line recall A structure models a record with named members.
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CHAPTER 02
Concepts of Object-Oriented Programming
Quick understanding
Object-oriented programming organises software around classes, objects, encapsulation, inheritance and polymorphism.
Core points Check your learning
A class combines data and operations. Explain the central idea of Concepts of Object-Oriented Programming in your own words.
Encapsulation controls direct access to representation.
Apply one idea from Concepts of Object-Oriented Programming to a textbook-style example or source.
Inheritance supports reuse; polymorphism supports one interface with varied behaviour.
Code pattern
class Rectangle {
int length, width;
public:
int area() { return length * width; }
};
One-line recall A class combines data and operations.
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CHAPTER 03
Data Structures and Operations
Quick understanding
A data structure chooses how information is arranged so insertion, deletion, search and traversal can be performed efficiently.
Core points Check your learning
Stacks follow last-in first-out order. Explain the central idea of Data Structures and Operations in your own words.
Queues follow first-in first-out order.
Linked structures use nodes and links rather than contiguous storage.
Apply one idea from Data Structures and Operations to a textbook-style example or source.
Code pattern
// stack using an array
stack[++top] = value;
value = stack[top--];
One-line recall Stacks follow last-in first-out order.
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CHAPTER 04
Web Technology
Quick understanding

The web combines clients, servers, URLs, protocols and transferred resources to deliver linked services.

Core points Check your learning

Abrowser sends an HTTP request and interprets the response.

AURL identifies scheme, host, path and optional query.

Static and dynamic pages differ in when content is produced.

Explain the central idea of Web Technology in your own words.

Apply one idea from Web Technology to a textbook-style example or source.

One-line recall Abrowser sends an HTTP request and interprets the response.

CHAPTER 05

Web Designing Using HTML

Quick understanding

HTML gives a web document semantic structure through elements, attributes, links, lists, tables, forms and media.

Core points Check your learning

Use headings and landmarks to reflect meaning.

Labels make form controls understandable and accessible.

Relative and absolute references resolve resources differently.

Explain the central idea of Web Designing Using HTML in your own words.

Apply one idea from Web Designing Using HTML to a textbook-style example or source.

Code pattern

```
<!doctype html>
<html lang="en">
<head><title>Padikam</title></head>
<body><h1>Lesson</h1></body>
</html>
```

One-line recall Use headings and landmarks to reflect meaning.

CHAPTER 06

Client-Side Scripting Using JavaScript

Quick understanding

JavaScript responds to events, validates input and changes a page through variables, control flow, functions and the document model.

Core points Check your learning

Use strict comparisons when type conversion is not intended.

Afunction should perform one clear task.

Client validation improves feedback but does not replace server validation.

Explain the central idea of Client-Side Scripting Using JavaScript in your own words.

Apply one idea from Client-Side Scripting Using JavaScript to a textbook-style example or source.

Code pattern

```
function square(n) {
return n * n;
```

}
const mark = Number(document.querySelector("#mark").value);
One-line recall Use strict comparisons when type conversion is not intended.
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CHAPTER 07
Web Hosting
Quick understanding
Hosting makes website files available through a configured server, domain and publishing workflow.
Core points Check your learning
A domain name is resolved to an IP address through DNS. Explain the central idea of Web Hosting in your own words.
Hosting choice affects control, capacity and maintenance. Apply one idea from Web Hosting to a textbook-style example or source.
Test links, permissions and security after upload.
One-line recall A domain name is resolved to an IP address through DNS.
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CHAPTER 08
Database Management System
Quick understanding
A DBMS stores related data under a schema and provides controlled querying, updating, security and recovery.
Core points Check your learning
Tables represent entities and relationships. Explain the central idea of Database Management System in your own words.
Primary and foreign keys support identity and referential integrity. Apply one idea from Database Management System to a textbook-style example or source.
Normalisation reduces update anomalies and avoidable duplication.
One-line recall Tables represent entities and relationships.
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CHAPTER 09
Structured Query Language
Quick understanding
SQL defines database structures and retrieves or changes rows through declarative statements.
Core points Check your learning
DDL changes schema; DML works with stored rows. Explain the central idea of Structured Query Language in your own words.
WHERE filters rows before grouping; HAVING filters groups. Apply one idea from Structured Query Language to a textbook-style example or source.
JOIN conditions must express the relationship between tables.
Code pattern
```
CREATE TABLE Student (
RollNo INT PRIMARY KEY,
Name VARCHAR(30),
Mark DECIMAL(5,2)
);
SELECT Name, AVG(Mark)
```

FROM Student
GROUP BY Name;
One-line recall DDL changes schema; DML works with stored rows.
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CHAPTER 10
Server-Side Scripting Using PHP
Quick understanding
PHP runs on the server to process requests, validate data, manage sessions and create an HTTP response.
Core points Check your learning
Server code can protect logic and credentials from Explain the central idea of Server-Side the browser. Scripting Using PHP in your own words.
Input must be validated and output escaped. Apply one idea from Server-Side Scripting Using PHP to a textbook-style
Sessions associate requests without exposing all example or source.
state in the page.
Code pattern
<?php
$name = htmlspecialchars($_POST["name"] ?? "");
echo "Hello " . $name;
?>
One-line recall Server code can protect logic and credentials from the browser.
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CHAPTER 11
Advances in Computing
Quick understanding
Cloud, mobile, distributed, intelligent and embedded systems extend computing beyond a single desktop machine.
Core points Check your learning
Virtualisation separates logical resources from Explain the central idea of Advances in hardware. Computing in your own words.
Cloud service models divide responsibility differently. Apply one idea from Advances in Computing to a textbook-style example
Emerging systems should be judged for usefulness, or source.
risk and inclusion.
One-line recall Virtualisation separates logical resources from hardware.
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CHAPTER 12
ICT and Society
Quick understanding
Responsible ICT use protects privacy, intellectual work, access, safety and environmental well-being.
Core points Check your learning
Digital footprints can outlast the original context. Explain the central idea of ICT and Society in your own words.
Copyright, licences and plagiarism concern ownership and attribution. Apply one idea from ICT and Society to a textbook-style example or source.
Cybercrime prevention combines secure systems with informed users.

One-line recall Digital footprints can outlast the original context.
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