CBSE NCERT · Class 12 · Computer Science

Computer Science

ORIGINAL STUDY COMPANION
PADIKAM
CLASS 12 | SCIENCE / ELECTIVE
Computer Science
CBSE / NCERT core lessons | Academic year 2026-27
11 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://cbseacademic.nic.in/web_material/CurriculumMain27/SecPart2/Computer_Science_SecP2_2026-27.pdf
2. https://ncert.nic.in/textbook.php?lecs1=0-13
3. https://cbseacademic.nic.in/new-resources-srsec.html

CHAPTER 01
Python Revision and Functions
Quick understanding
Functions organise Python logic through parameters, return values, scope and predictable flow of execution.
Core points Check your learning
Positional and default parameters follow declaration Explain the central idea of Python rules. Revision and Functions in your own words.
Return sends a result; print only displays.
Apply one idea from Python Revision
Local and global names must be traced separately.
and Functions to a textbook-style example or source.

Code pattern
def total(price, qty=1):
return price * qty
amount = total(125.0, 3)
One-line recall Positional and default parameters follow declaration rules.
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CHAPTER 02
Exception Handling
Quick understanding
Exception handling separates normal logic from controlled responses to runtime problems.
Core points Check your learning
Catch specific exceptions where possible. Explain the central idea of Exception
Handling in your own words.
else runs after a successful try; finally runs for
cleanup. Apply one idea from Exception Handling
to a textbook-style example or source.
Do not hide errors with an empty broad handler.
Code pattern
try:
value = int(input("Number: "))
except ValueError:
print("Enter an integer")
else:
print(value * value)
One-line recall Catch specific exceptions where possible.
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CHAPTER 03
Text Files
Quick understanding
Text-file programs open a path in a chosen mode, read or write strings and close the resource reliably.
Core points Check your learning
The with statement closes the file automatically. Explain the central idea of Text Files in
your own words.
read, readline and readlines return different shapes.
Apply one idea from Text Files to a
seek and tell work with the file position.
textbook-style example or source.
Code pattern
with open("notes.txt", "r", encoding="utf-8") as file:
for line in file:
print(line.rstrip())
One-line recall The with statement closes the file automatically.
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CHAPTER 04
Binary Files
Quick understanding
Binary files preserve Python records through serialisation and require matching write and read logic.
Core points Check your learning
pickle.dump writes one object at the current position. Explain the central idea of Binary Files in
your own words.
Repeated load calls recover repeated stored objects
until EOF. Apply one idea from Binary Files to a

textbook-style example or source.
Updates commonly rewrite records through a
temporary file.
Code pattern
```
import pickle
with open("students.dat", "wb") as file:
pickle.dump({"roll": 7, "mark": 91}, file)
```
One-line recall pickle.dump writes one object at the current position.
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CHAPTER 05
CSV Files
Quick understanding
CSV files exchange rows of text fields between programs and tabular tools.
Core points Check your learning
Use the csv module so quoting and delimiters are Explain the central idea of CSV Files in
handled correctly. your own words.
writerow writes one row; writerows writes many. Apply one idea from CSV Files to a
textbook-style example or source.
Convert numeric fields after reading because CSV
values are text.
Code pattern
```
import csv
with open("marks.csv", "w", newline="") as file:
writer = csv.writer(file)
writer.writerow(["Roll", "Mark"])
```
One-line recall Use the csv module so quoting and delimiters are handled correctly.
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CHAPTER 06
Stack
Quick understanding
Astack is a last-in first-out structure implemented in the syllabus with list operations.
Core points Check your learning
Push appends at the top. Explain the central idea of Stack in your
own words.
Pop must check underflow before removal.
Apply one idea from Stack to a textbook-
The top item is at the end when append and pop are
style example or source.
used.
Code pattern
```
stack = []
stack.append("A")
if stack:
item = stack.pop()
```
One-line recall Push appends at the top.
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CHAPTER 07
Computer Networks
Quick understanding
Networks share data and services through media, devices, addressing and agreed protocols.
Core points Check your learning
LAN, MAN and WAN describe different scopes. Explain the central idea of Computer

Networks in your own words.
Switches, routers, modems and access points
perform different roles. Apply one idea from Computer Networks
to a textbook-style example or source.
Bandwidth and data transfer rate use bit-based
units.
Equation and notation
Data transfer rate = Data transferred / Time
SYMBOLS AND UNITS
Data transferred: bit (b) or byte (B), as stated Time: second (s)
Transfer rate: bit s^{-1}, commonly kbps, Mbps or Gbps
One-line recall LAN, MAN and WAN describe different scopes.
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CHAPTER 08
Network Protocols and Web Services
Quick understanding
Protocols define communication rules, while internet services build application behaviour on those
rules.
Core points Check your learning
TCP and IP handle reliable transport and Explain the central idea of Network
internetwork routing roles. Protocols and Web Services in your own
words.
HTTP/HTTPS support web transfer; SMTP and
POP/IMAP support email. Apply one idea from Network Protocols
and Web Services to a textbook-style
URLs, domains and DNS help locate services.
example or source.
One-line recall TCP and IP handle reliable transport and internetwork routing roles.
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CHAPTER 09
Relational Databases
Quick understanding
Arelational database stores rows in linked tables whose keys and constraints preserve meaning.
Core points Check your learning
Aprimary key is unique and not null. Explain the central idea of Relational
Databases in your own words.
Aforeign key references a candidate key in another
relation. Apply one idea from Relational
Databases to a textbook-style example
Degree counts columns; cardinality counts rows.
or source.
One-line recall Aprimary key is unique and not null.
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CHAPTER 10
SQL
Quick understanding
SQL creates, queries and updates relational data with filters, functions, grouping and joins.
Core points Check your learning
WHERE filters rows before GROUP BY. Explain the central idea of SQL in your
own words.
Aggregate functions normally ignore NULL values
except COUNT(*). Apply one idea from SQL to a textbook-

style example or source.
JOIN conditions prevent meaningless Cartesian
combinations.
Code pattern
SELECT Department, AVG(Salary) AS AvgSalary
FROM Employee
GROUP BY Department
HAVING AVG(Salary) > 50000;
One-line recall WHERE filters rows before GROUP BY.
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CHAPTER 11
Python-SQL Connectivity and Project
Quick understanding
Adatabase application connects Python to MySQL, executes parameterised statements, processes
results and commits intentional changes.
Core points Check your learning
Use placeholders instead of building SQL from input Explain the central idea of Python-SQL
strings. Connectivity and Project in your own
words.
fetchone and fetchall consume result rows.
Apply one idea from Python-SQL
Close cursors and connections and handle rollback
Connectivity and Project to a textbook-
when needed.
style example or source.
Code pattern
cursor.execute("SELECT Name FROM Student WHERE RollNo=%s", (roll,))
row = cursor.fetchone()
connection.commit()
One-line recall Use placeholders instead of building SQL from input strings.
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