

BACHELOR OF COMPUTER APPLICATIONS (BCA)

(Revised Syllabus)

BCA(Revised Syllabus)/ASSIGN/SEMESTER-V

ASSIGNMENTS

(July - 2026 & January - 2027)

(BCS-051, BCS-052, BCS-053, BCS-054, BCS-055

BCSL-056, BCSL-057, BCSL-058)



**SCHOOL OF COMPUTER AND INFORMATION SCIENCES
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068**

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Important Notes

1. Submit your assignments to the Coordinator of your Study Centre on or before the due date.
2. Assignment submission before due dates is compulsory to become eligible for appearing in corresponding Term End Examinations. For further details, please refer to BCA Programme Guide.
3. To become eligible for appearing the Term End Practical Examination for the lab courses, it is essential to fulfill the minimum attendance requirements as well as submission of assignments (on or before the due date). For further details, please refer to the BCA Programme Guide.

Course Code	:	BCSL-056
Course Title	:	Network Programming and Administration Lab
Assignment Number	:	BCA(V)/L-056/Assignment/2026-27
Maximum Marks	:	50
Weightage	:	25%
Last date of Submission	:	31st October, 2026 (For July 2026 Session)
	:	30th April, 2027 (For January 2027 Session)

Note: This assignment has two questions. Answer all the questions. These questions carry 40 marks. Rest 10 marks are for viva voce. You may use illustrations and diagrams to enhance the explanations. Please go through the guidelines regarding assignments given in the Programme Guide for the format of presentation. Make necessary assumptions.

Q1:

- (a) Write a TCP client and TCP server program in C language on Unix/Linux, where the client program interacts with the server as specified below: **(12 Marks)**
- The client connects to the server and sends a string.
 - The server program sends an acknowledgment message confirming receipt of the string.
 - The server program converts the received string to UPPERCASE and calculates the total number of vowels present in it, then sends both results back to the client.
 - The client receives the processed output and sends a final acknowledgment back to the server before terminating the connection.
- (b) Write the step-by-step procedure to install a packet analyzer (e.g., *Wireshark* or *tcpdump*) on Unix/Linux. Explain the distinction between capture filters and display filters with two practical examples for each. **(8 Marks)**

Q2:

- (a) Execute the following Linux commands on your terminal and present the command syntax along with sample outputs: **(8 Marks)**
- head
 - grep
 - ping
 - cat
- (b) Configure a DNS server (such as BIND9) or FTP server (such as *vsftpd*) on a Linux operating system. Provide a complete step-by-step installation and configuration guide, and show how to view and sort active service connections using commands like *netstat* or *ss*. **(12 Marks)**

Course Code : **BCSL-057**
Course Title : **Web Programming Lab**
Assignment Number : **BCA(V)/L-057/Assignment/2026-27**
Maximum Marks : **50**
Weightage : **25%**
Last Dates for Submission : **31st October, 2026 (For July 2026 Session)**
: **30th April, 2027 (For January 2027 Session)**

Note: This assignment has one question for a total of 40 marks. The rest 10 marks are for viva voce. You must create the web application as specified, take screenshots of all pages and code, and attach them with your assignment.

Q1:

- (a) Design and implement a website/web application consisting of **three pages** having the following layout:

Home	Course List	Registration
	Information Division	

Create three pages having the same layout as shown above.

The **Top Division** contains the following links:

Home: Link to Home Page

Course List: Link to a Course List Page created using JSP

Registration: Link to a Registration Page containing a form

The **Information Division** of the three pages should be as per the following description:

- (i) The **Home Page** should display the name of the training institute "**Skill Development Academy**". It should display the objectives of the institute and its address. **(3 Marks)**

- (ii) The **Course List Page** should be generated by a query to a database named **Training** having a single relation **Course_Details (Course_Name, Duration)** **(18 Marks)**

You must use JSP to connect to the database and display information as:

Course Name	Duration
Web Development	6 Months
Python Programming	4 Months
Data Analytics	5 Months
Cyber Security	3 Months
Cloud Computing	6 Months

You must display **at least five courses** in this list.

- (iii) The **Registration Page** should display a form as shown below. **(6 Marks)**

(Please do not write the code for processing or verification of the form.)

Registration

Student Name : _____

Course Name : _____

Email ID : _____

Mobile No. : _____

[Submit]

- (b) Create an **external CSS file** that ensures that the format of all the three pages is as per the layout shown above. The background colour of the **Top Division** should be **light orange**. **(13 Marks)**

You may make suitable assumptions, if needed.