

ਕੰਪਿਊਟਰ ਸਾਇੰਸ - ਬਾਈ-ਮੰਥਲੀ ਅਤੇ ਯੂਨਿਟ ਵਾਈਜ਼ ਸਿਲੇਬਸ ਵੰਡ (ਸੈਸ਼ਨ 2026-27)

Unit No./Month	6th	7th	8th	9th	10th	11th	12th
I April- May	Chapter 1: Fundamentals of Computers	Chapter 1: Typing Tutor Chapter 2: Windows Explorer	Chapter 1: Typing Tutor (Punjabi)	Chapter 1: Networking & Digital Communication Chapter 2: Internet Applications	Chapter 1: Office Tools	Chapter 1: Number System Chapter 5: Basic Concepts of Database management System	Chapter 1: Office Automation & Typing Chapter 4: Computer Network
II July- Aug	Chapter 3: Intro to Tux Paint Chapter 4: Working with Tools of Tux Paint	Chapter 3: MS Word (Part-1) Chapter 4: MS Word (Part-2)	Chapter 2: Internet Fundamentals Chapter 3: Introduction to Information Technology	Chapter 3: E-Governance & Cyber Safety Chapter 8: Database Management System	Chapter 2: HTML-I Chapter 3: HTML-II Chapter 4: HTML-III	Chapter 6: Computer Maintenance Chapter 7: Cyber Security & Ethics	Chapter 2: Functions in Python Chapter 3: Built in Collections of Python
III Oct- Nov	Chapter 2: Working with Computer Systems Chapter 5: Computer Hardware & Software	Chapter 5: MS Word (Part-3) Chapter 6: MS Word (Part-4)	Chapter 4: MS PowerPoint (Part I) Chapter 5: MS PowerPoint (Part II) Chapter 6: MS PowerPoint (Part III)	Chapter 4: MS Excel (Part-1) Chapter 5: MS Excel (Part-2)	Chapter 5: Operating System	Chapter 2: Basics Concepts of Python Programming Chapter 3: Data Types, Operators & Expressions in Python	Chapter 5: Current trends in Information Technology Chapter 6: Artificial Intelligence & Experts System
IV Dec- Jan	Chapter 6: Input Devices Chapter 7: Output Devices	Chapter 7: Introduction to Multimedia Chapter 8: Storage Devices	Chapter 7: Generations of Computer Chapter 8: Computer Memories	Chapter 6: MS Excel (Part-3) Chapter 7: MS Excel (Part-4)	Chapter 6: Desktop Publishing Chapter 7: MS Publisher	Chapter 4: Control Statements in Python	Chapter 7: Digitalization Chapter 8: E-Governance (Part II)

COMPUTER SCIENCE
CLASS VI
(Session 2026-27)

Learning Outcomes:

- a) Ability to familiarise with basics of computers
- b) Ability to familiarise with different types of computers
- c) Ability to Operate Computers such as Starting and Shutting Down Operating System, Handling Desktop Components etc.
- d) Ability to familiarise with Window Applications, such as Notepad, Paint, Calc. etc.
- e) Ability to familiarise with the Internal Components of a System Unit, such as Motherboard, Processor, Hard Drive, RAM, Power Supply etc.
- f) Ability to familiarise with the Concept of Software and its Categories
- g) Ability to familiarise with the different types of Input Devices
- h) Ability to familiarise with the different types of Output Devices
- i) Ability to create drawing using different tools available in the Tux Paint
- j) Ability to familiarise with various basic operations related to handle files, such as creating a new file, saving a file, opening a file, Undo and Redo Operations etc.

Unit I

Chapter-1: Fundamentals of Computers:

- Introduction to Computers, Uses of Computers
- Applications of Computer: Education, Entertainment, Sports, Communication, Shops, Hospital, Banks, Government Offices, Travel
- Characteristics of Computer: Speed, Accuracy, Reliability, Diligence, Automation, Storage
- Portable Computing Devices: Mobile (Smart Phones), Tablet Computer, Palmtop Computer, Laptop Computer
- Limitations of Computer
- Introduction to Basic/Standard Components of a Computer System: How computer works (Input, Processing, Output)
- Block Diagram of Computer: Parts of Central Processing Unit (Memory Unit, Control Unit, Arithmetic Logical Unit (ALU))
- Types of Computer Memories: Primary Memory, Secondary Memory
- Categories of Computer: Micro Computer (Personal Computer), Mini Computer, Main Frame Computer, Super Computer

Unit-II

Chapter 3: Intro to Tux Paint:

- Introduction to Tux Paint, Features of Tux Paint
- Opening and Saving a file in Tux Paint
- Main Screen Interface: Left Side: Toolbar, Middle Area: Drawing Canvas, Right Side: Selector, Lower Side: Colors (Color options: Color Picker, Rainbow Palette, Color Mixer), Bottom Side: Help Area.

Chapter 4: Working with tools of Tux Paint:

- Different Tools in Tux Paint (Drawing Tools: "Stamp" Tool (Rubber Stamps), "Lines" Tool, "Shapes" Tool, "Text" and "Label" Tools, "Fill" Tool, "Magic" Tool (Special Effects), "Eraser" Tool,
- Other Commands & Controls: "Undo" and "Redo" Commands, "New" Command, "Open" Command, "Save" Command, "Print" Command, "Slides" Command (under "Open"), "Quit" Command, Sound Muting

Unit III

Chapter 2: Working with Computer Systems:

- Operating System: Windows, DOS, Android
- Starting Computer System: Powering On, Logging In
- Desktop and Its Components: Icons (My Computer, Network, Recycle Bin, User's Files), Shortcuts, Wallpaper, Changing Wallpaper, Taskbar (Start Button, Quick launch Bar, System Tray, Notification Area, Clock, Active Programs)
- Working with Windows Applications and text editor: Notepad, WordPad, Paint, Calculator, Using Run Box, Search Box of Start Menu
- Shutting Down Computer System: Sleep, Shut Down, Log Off, Restart

Chapter 5: Computer Hardware and Software:

- Hardware: Features of Hardware, System Unit (CPU), Motherboard (Hard Drive, Video Card, Processor, FAN, RAM slot, Power Supply, CD/DVD), Important points for taking care of Hardware
- What is Software? Definition
- Types of Software - System software, Application Software
- Difference between System Software and Application Software.
- Relationship between Hardware & Software

Unit IV

Chapter 6: Input Devices:

- Input devices, Uses of Input Devices
- Keyboard, Different types of keys on Keyboard, Mouse and its buttons, Mouse pad, Microphone, Scanner, Web Camera, Touch Pad, Bar Code Reader, Light Pen, Joy Stick, Touch Screen, Biometric, Electronic Signature Pad

Chapter 7: Output Devices:

- Output Devices, Types of output devices
- Monitor (Cathode-Ray Tube (CRT), Flat- Panel Display), Printer (Dot matrix Printer, Inkjet Printer, Laser Printer), Speaker, Headphone, Plotter, Projector
- Difference between Input & Output Devices

Practical Activities

Suggested Practical List for Lab Exercises or Record File:

- i. Powering On, Logging In Computer System
- ii. Opening (Using Icons or Shortcuts) & Closing Programs
- iii. Change Wallpapers
- iv. Change Screen Savers
- v. Working with Taskbar
- vi. Opening Common Windows Applications using Run Box
- vii. Working with Calculator
- viii. Log Off, Restarting and Shutting Down Computer System
- ix. How to Start Tux Paint?
- x. Opening and Saving Files in Tux Paint
- xi. Use of Different Tools in Tux Paint: Rubber Stamps, Lines, Shapes, Text, Labels, Fill, Magic, Eraser
- xii. Working with Color Options in Tux Paint
- xiii. Use of Undo & Redo Commands
- xiv. Print Command in Tux Paint
- xv. How to Close Tux Paint

Syllabus - Computer Science

Session 2026-27

Class 7th

Unit-I

Chapter 1: Typing Tutor

- Introduction to Touch typing and Typing Tutor, Position of the fingers on key-board (Home Row, second row, third row, fourth row),
- Numeric key pad, Important Keys on Key-board (Spacebar, Enter key, Backspace key, Shift key, Caps Lock key, Num Lock Key)
- Tips to improve typing speed
- Proper Posture
- Suggestions for Repetitive Stress Injuries during continuous typing

Chapter 2: Windows Explorer

- **Windows Explorer**, Opening Windows Explorer, Parts of Windows Explorer (Left Pane, Right Pane), Hierarchy of locations (Favourites, Libraries, Personal Folder, Computer, Control Panel, Recycle Bin) Windows Explorer Views (Small, medium, large and extra-large icons views, Tiles Icons view, List Icons view, Details Icons view, Content Icons view)
- **Working with Files and Folders** (Selecting Items, creating a new Folder, Renaming an Item, Deleting an Item, Copying Item using copy and paste, Moving Item using cut and paste, Copy Item using send to)
- **Personalization/Customizing of Desktop** (Themes, Desktop Background, Screensaver)

Unit-II

Chapter 3: Microsoft Word (Part-1)

- Introduction, What is Word Processing?, Features of Word Processing software
- Different Word processing software

- **MS Word**, Special Features of MS Word, How to Start MS Word, Parts of MS Word Window (File Menu, Quick Access Toolbar, Title Bar, Tabs, Ribbon, Dialog Box Launcher, Ruler, Text Area, Vertical and Horizontal Scroll Bars, Status Bar, Document Views, Zoom Slider)
- Creating New Document using MS Word, Opening an existing document, Saving a New/Existing Document

Chapter 4: Microsoft Word (Part-2)

- Selection of text (Using mouse, Using keyboard)
- **Home Tab:** Clipboard Group (Copy/Cut Text, Pasting Text, Format Painter), Font Group (Font face and Font size, Font styles, Font color, Text Highlight color, Text Effects, Change Text Case), Paragraph Group (Bullets and Numbering, Text Alignment, Adjusting Line Spacing, Shading), Editing Group (Find and Replace)
- Undo and Redo Commands
- **Insert Tab:** Pages Group (Page Breaks), Illustrations Group (Picture/Clip Art, Shapes, Smart Art Graphic), Header & Footer Group (Adding and removing Headers and Footers, Page Number), Text Group (Text Boxes, WordArt), Symbols Group (Using Symbols)

Unit-III

Chapter 5: Microsoft Word (Part-3)

- **Picture Tools (Format Tab):** Adjust Group (Corrections, Color, Artistic Effect, Compress picture, Change picture, Reset Picture, Remove Background), Picture Style Group (Picture Style Gallery, Picture Border, Picture Effects), Arrange Group (Position, Wrap Text, Align, Group, Rotate), Size Group (Crop, Height and Width)
- **Page layout Tab:** Page Setup Group (Margins, Orientation, Size, Columns), Page Background Group (Water Mark, Page Color, Page Borders)
- **Review Tab:** Proofing Group (Spelling and Grammar, Word Count)
- Printing Documents

Chapter 6: Microsoft Word (Part-4)

- What is Table?
- **Creating A Table:** Using Table Button, Using Insert Table Option, Using Draw Table Option,
- Entering Data in the Table
- **Modifying A Table:** Inserting Column In a Table, Inserting Rows In a Table, Insert a Cell in a Table, Deleting Columns in a Table, Deleting Rows in a Table, Deleting Cells in a Table, Deleting a Table)
- **Properties of a Table:** Alignment of a Table, Changing the size of Row, Column or Cell
- Splitting Cells, Merging Cells, Splitting Table

Unit-IV

Chapter 7: Introduction to Multimedia

- Introduction, Component of Multimedia (Text, Sound (Audio), Images, Animation, Video)
- **Requirement for Multimedia:** Hardware requirements (Input Devices, Output Devices, Storage Devices) and software requirements
- **File Formats for Multimedia:** Text Formats, Image Formats, Digital Audio File Formats, Digital Video File Formats
- **Multimedia Presentation:** Types of Multimedia Presentation (Virtual, Slide Presentation, Web Pages)
- **Applications of Multimedia:** Education, Business Systems, Medical Services, Entertainment, Public Places, Multimedia Conferencing

Chapter 8: Storage Devices

- What is memory?, Usage of Memory
- **Type of Memory:** Primary Memory (RAM, ROM), Secondary Memory (Hard Disk Drive, External Hard Disk Drive, Floppy Disk, Magnetic Tape, CD, DVD, Pen Drive, Memory Cards)

Syllabus - Computer Science

Session 2026-27

Class 8th

Unit-I

Chapter 1: Typing Tutor (Punjabi)

- Touch Typing
- **Different Techniques for Typing in Punjabi:** Phonetic fonts, Unicode font, Gurmukhi Keyboard Mapper:
- **Keymaps Of Commonly Used Punjabi Fonts:** Unicode Font – Raavi, Phonetic Fonts – AnmolLipi
- Numeric key pad, Important Keys on Key-board (Spacebar, Enter key, Backspace key, Shift key, Caps Lock key, Num Lock Key)
- Tips to improve typing speed, Proper Posture, Suggestions for Repetitive Stress Injuries during continuous typing

Unit-II

Chapter 2: Internet Fundamentals

- What is Internet?, History of Internet
- **Requirement for Internet:** Hardware Requirements, Software Requirements:
- **Facilities provided by internet:** News and Information, Art and Entertainment, On-Line Shopping, Mailing Letters, Health and Fitness, Tourism and Travel, Chatting, Banking Operations, Video Conferencing
- **Internet Connections:** Types of Internet Connections
- **Modem and Its Types:** External Modem and Internal Modem
- Internet Service Providers (ISP)
- **Services provided by Internet:** World Wide Web, Electronic Mail, E-Commerce, Social Networking Sites, Video Conferencing, Chatting, Web Searching
- Tools and Skills required for using Internet
- Web Browsing

Chapter 3: Introduction to Information Technology

- **Information Technology:** Need of Information Technology (For Business and Industry, At home, For Training)
- Web Sites, Searching, Web Surfing, Difference Between On-Line and Off-Line, Downloading, Net Banking, On-Line Shopping, How to View On-Line Result, Mobile Technology

Unit-III

Chapter 4: Microsoft PowerPoint (Part I)

- Introduction to PowerPoint, What is Presentation? What is Slide? How to Start/Open PowerPoint?
- **Components of PowerPoint Window:** Title Bar, Quick Access Toolbar, Ribbon and Tabs, Outline/Slides Tabs, Slide Pane, Notes Pane, Status Bar, View Options
- How to Create Photo-Album Presentation?
- **How to Play Presentation for audience:** How to Play Presentation from the Very First Slide, How to Play Presentation from the Current Slide
- Saving and Exiting Presentation

Chapter 5: Microsoft PowerPoint (Part II)

- **How to Create a New Blank Presentation:** Adding Text to Slides, Formatting Text of a Slide,
- Inserting New Slide, How to Change the Slide Layout?
- **How to Change the Appearance of Slides:** Working with Themes, Changing Background Styles, Format Background (Solid Fill, Gradient Fill, Picture or Texture Fill, Pattern Fill)
- Adding Contents to a Slide (WordArt, ClipArt, Tables, SmartArt, Pictures, Movie/Video etc.)
- **Slide View Options in PowerPoint:** Normal view, Slide Sorter view, Reading view, Slide Show view, Zoom Slider

Chapter 6: Microsoft PowerPoint (Part III)

- Working with Transition (Effect Options, Sounds, Duration)
- **Working with Animation:** Animation and its types (Entrance, Emphasis, Exit, Motion Paths), How to Apply Animation, Working with Animation Options (Effect Options, Add Animation, Animation Pane, Animation Painter, Timing Effects, Previewing Animations)
- **Record Slide Show/Narration and Timings:** How to Remove Narration or Timings from a Recorded Slide Show
- **Save Presentation:** as PDF format, as a Video, as a PowerPoint Show, in the form of Picture Files

Unit-IV

Chapter 7: Generations of Computer

- Introduction to Generations
- **First Generation Computers:** Main features and characteristics of First Generation, Examples of First-Generation Computer Systems
- **Second Generation Computers:** Main features and characteristics of Second Generation with examples
- **Third Generation Computers:** Main features and characteristics of third Generation with examples
- **Fourth Generation Computers:** Main features and characteristics of fourth Generation with examples
- **Fifth Generation Computers:** Main features and characteristics of fifth Generation with examples

Chapter 8: Computer Memories

- What is Memory, Memory units, Types of Memory
- **Internal Memory** - CPU Registers, Cache Memory - Advantages and Disadvantages of cache memory, Primary/Main memory, RAM and its types– SRAM, DRAM, ROM and its types-ROM, PROM, EPROM, EEPROM) Characteristics of the Static and Dynamic RAM, Advantages of ROM
- **External Memory:** Characteristic of Secondary Memory, Sequential Access Devices, Direct Access Devices
- **Physical Structure of Magnetic disks:** Tracks and Sectors

Practical Activities

1. Practical for Searching any topic using Google Search Engine in any Web Browser (For Example: Open www.google.com in any web browser and then search information about different types of Computers)
2. Practical to view the result of Punjab School Education Board classes using internet.
3. Practical for downloading Images from internet, copying text content from web pages and get them in the word document.
4. Practical to open PowerPoint using different ways.
5. Practical for displaying/showing information about the different components of PowerPoint Window.
6. Prepare a Photo Album Presentation (using at least 10 photographs)
7. Practical to Save and Close the Presentation in PowerPoint
8. Create a New Blank Presentation showing different Types of Computers using at least 5 slides (Use Text Formatting and Clip-Art/Images etc. in the Presentation)
9. Play Presentation from first slide and current slide using slide show option in PowerPoint.
10. Create Presentation by changing the appearance of slides with the help of Themes/Background Styles/Format Background options in the New/Existing Presentation.
11. Apply Transition Effects in your Presentation (Use Effect Options and Sound Duration in your Presentation)
12. Use Different Types of Animations on Text/Images etc. added in the New/Existing Presentation.
13. Practical for using various Animation options through Animation Pane.
14. Save Presentation in different formats (PDF, Video, Images, PowerPoint Show)
15. Prepare a Presentation in PowerPoint showing the Different Generations of Computers. Prepare a presentation with at least 10 slides and use Text Formatting, Images, Transition Effects, Animation Effects in it.

16. Prepare a Presentation in PowerPoint that shows Different Types Of Computer Memories.
17. Type any essay/topic in MS Word using any Punjabi font.

Charts/Models

- Prepare a chart/model showing the various services provided by the Internet.
- Prepare a chart/model related to different Generations of Computers.
- Prepare a chart/model showing different Types of Computer Memories.
- Prepare a chart/model showing the Physical Structure of a Magnetic Disk.

SYLLABUS – COMPUTER SCIENCE

(SESSION: 2026-27)

9TH CLASS

Unit-I

CHAPTER 1: NETWORKING AND DIGITAL COMMUNICATION

- Human vs. Digital Communication: Why do humans and computers communicate? Introduction to Digital Communication.
- Data Communication: Components of Data Communication (Sender, Medium, Receiver, Protocol), Transmission Media (Wired: Ethernet, Coaxial, USB, HDMI and Optical fibre' Wireless: WiFi, Bluetooth, Infrared, Mobile networks, Satellite signals), Modes of Data Transmission: Simplex, Half Duplex, Full Duplex
- Introduction to Computer Networks, How information travels in a network?, Speed parameters in Digital Networks: Ping, Download, Upload,
- Components of a Computer Network: Client and Server Computers, Ethernet Port, Hub, Switch, Router, Bridge, Gateway, Transmission Media.
- Network Topologies: Bus, Ring, Star, Mesh, Tree, Hybrid, Advantages and Disadvantages of each topology
- Types of Networks: PAN, LAN, MAN, WAN (with real-life examples)

CHAPTER 2: INTERNET APPLICATIONS

- Introduction to the Internet and World Wide Web, Web Browsers and Websites, URL, Web Applications (apps), Introduction to Google Chrome Web Browser, Page Translation features, CAPTCHA, Trusted stores for Applications
- Online Search and Information Access: Using Search Engine, Search Query, Image Search, Google Lens, Trusted Websites, Using AI Chatbots, Google Maps
- Learning from Videos: Playback Speed, Subtitles, Auto-Translation
- Cloud-based Applications for Creating Digital Contents: Documents, Presentations, Spreadsheets, Websites and Forms; Applicable Situations for these Apps; Creating a Google Form
- Online Communication and Collaboration: Voice Call, SMS, Chat, Email, Cloud Documents (Storage and Sharing), Online Meetings, Downloading and Uploading, Handling Notifications.
- Emails: Historic significance of Email, Email Communication using Gmail (Creating and using email accounts; Sending, receiving, and replying emails)
- How to create, upload, download, and share files in cloud storage (Google Drive)?
- Digital Photo Albums and Social Media,
- Managing Time and Tasks: Google Calendar, Google Keep

Unit-II

CHAPTER 3: E-GOVERNANCE AND CYBER SAFETY

- Introduction to E-Governance, its meaning and need
- Difference between Governance and E-Governance
- Purposes and Advantages of Various Models of E-Governance: G2C, G2B, G2E, G2G
- Foundations of E-Governance: Connectivity, Skilled People, Data & Content, Investment
- E-Governance Services: National Level, State Level, Local Level (Urban and Rural)
- Online Official Document Storage and DigiLocker
- Internet Threats: Virus, Spyware, Trojan Horse, Phishing
- Safe Online Habits, Protection Against Online Fraud
- Cyber Crime and Cyber Ethics: Computer as a target and as a weapon, Ethical use of digital technologies

CHAPTER 8: DATABASE MANAGEMENT SYSTEM

- Data and Information: Raw Data vs Processed Information
- Introduction to Database and its Terminology: Entity, Attribute, Record, Table, Keys (Primary Key and Foreign Key), Relationships between Entities (One-to-One, One-to-Many, Many-to-Many)
- Limitations of Spreadsheet-based Data Management
- Introduction to Database Management System (DBMS) and its need
- Components of DBMS Environment: Hardware, Software (Operating System, DBMS, Business Applications, Tools), Data, Procedures, Users (End Users, Specialists such as Data Analysts, Business Users, Technical Users such as Database Administrators, Database Designers, Developers or Application Programmers)
- Database Operations and SQL: Data Definition (DDL), Data Manipulation (DML), Data Control (DCL)

Unit-III

CHAPTER 4: MICROSOFT EXCEL (PART-1) – SPREADSHEET BASICS

- Introduction to Spreadsheets; Uses of Spreadsheets
- Essential Spreadsheet Concepts: Grid (rows, columns, cells), Table structure with attributes as column headers and rows as records.
- Spreadsheet Interface and Components: File, Workbook and Worksheet controls, Options and Commands, Active Cell, Name box and Formula bar, Display Area, Spreadsheet View controls.
- Working with Spreadsheets: Entering and Editing Data, Selecting and Managing Cells, Using Fill Handle and Copy–Paste, Working with Data Series, Data Formats

- Basic Formatting: Font Style, Alignment, Cell formatting—Borders and Colours, Printing: Print Area, Print Preview, Page Layout, Headers, Footers, Gridlines
- Introduction to Visualizing Data Summaries

CHAPTER 5: MICROSOFT EXCEL (PART-2) – CALCULATIONS AND DECISION MAKING

- Basic Calculations using Formulas: Operators and Operands
- Copying Formulas and Cell Referencing: Relative, Absolute, Mixed References
- Arithmetic Operators in formulas and their Precedence
- Using functions for calculations in Excel Sheets, Mathematical and Counting Functions: SUM, AVERAGE, MIN, MAX, ROUND, LARGE, RANK
- Using Formulas for Making Decisions: Conditional Operators (=, <, <=, >, >=, <>), Conditional Functions (IF, COUNTIF, SUMIF) and Logical Functions (AND, OR)
- Conditional Formatting

Unit-IV

CHAPTER 6: MICROSOFT EXCEL (PART-3) – CLEANING AND CONNECTING DATA

- Data Consistency and Data Quality: Identifying and Removing Duplicate Records, Sorting Data, Manual Data Cleaning using Find and Replace
- General functions used on text data: LEN, ISNUMBER, Count Values: COUNT , COUNTA , COUNTBLANK,
- Standardising and Cleaning textual data: TRIM, UPPER, LOWER, PROPER
- Extracting Parts of Text: LEFT, RIGHT, MID
- Combining and Splitting Text: Concatenation operator, CONCAT, TEXTJOIN, TEXTSPLIT
- Finding Text within a Larger String: SEARCH and FIND
- Working with Dates and Times: TODAY, NOW, DAY, MONTH, YEAR, DATEDIF, TEXT
- Defining Named Ranges and Using them in Data Validation
- Connecting Related Data Across Spreadsheets Using Unique Identifiers: XLOOKUP

CHAPTER 7: MICROSOFT EXCEL (PART-4) – DATA ANALYSIS AND VISUAL REPORTING

- Preparing Data for Analysis: Organising and categorising data
- Using Filters: Category Filters, Text Filters, Number Filters, Colour Filters, Combining Multiple Filters for Decision Making
- Introduction to Pivot Tables: Creating Pivot Tables using Rows, Columns, Values, Filters
- Summarising Data Using Pivot Tables: Count, Sum, Average, Analysing Group-wise Performance
- Using Charts for Visual Reporting: Purpose of Visual Reporting, interactive charts with Pivot Tables, Common Chart Types, Customisation of Charts, Using charts to Identify Trends and Comparisons

Syllabus - Computer Science

Session 2026-27

Class 10th

Unit-I

Chapter 1: Office Tools

- **Introduction**, Software and its Types – System and Application Software
- **Different Types of Office Tools:** Word processor Software's, Spread sheet Softwares, Presentation Software, Database Systems. Multimedia Tools
- **Online Office Tools:** Common Online Office Tools
- **Google Docs** -Opening Google Docs, creating a Blank Document using Google Docs, Opening a Microsoft Word Document using Google Docs, downloading document files from Google Docs Collaborating on Documents with Others- Share with people and groups, get link for Viewer, Commenter, Editor; Viewing All the Recent Changes to a Document;
- **Google Sheets-** Opening Google Sheets, creating a Blank spreadsheet using Google Sheets;
- **Google Slides-** Opening Google Slides, creating a Blank presentation using Google Slides;
- Advantages and Disadvantages of Online Office Tools
- Offline Vs Online Office Tools

Unit-II

Chapter 2: HTML-I

- **Introduction**, HTML, Software Requirements for HTML – Text Editors and Web Browsers
- **Tags and Attributes** - Paired Tags, Unpaired Tags
- **Basic Structure of HTML document:** HEAD Part, BODY Part; Creating a Web Page with Basic Structure of HTML document, Viewing the Web Page with Basic Structure of HTML document
- **Formatting in HTML:** Bold, Italic, Underline and Strikethrough, Adding Line Break and Horizontal Line, Heading Level (H1 to H6), Making Paragraphs, Superscript and Subscript Text, Working with Fonts (face, size and color attributes), Making Text Size Larger (<BIG>) or Smaller (<SMALL>), Monospaced Font (<TT>), Pre-formatted Text (<PRE>), Center

Alignment (<CENTER>), Marked Formatting (<MARK>), Scrolling Text (<MARQUEE> with Behaviour, Bgcolor, Direction, Height, Loop, Scrollamount, Width attributes, Formatting Body of HTML document (using Background, Bgcolor, Link, Text attributes)

Chapter 3: HTML-II

- **Working with Lists:** Unordered List, type attribute of Unordered List; Ordered List, type and start attributes of Ordered List; Definition List; Nesting of Lists
- **Working with Tables:** Using <TABLE>, <TH>, <TD>, <TR>, <CAPTION> tags; Working with attributes of table: Setting Table Height and Width, Setting Table Border and Border Color, Setting Table Backgrounds (Bgcolor, Background attributes), Setting Cell Padding and Cell Spacing, Merging Cells using rowspan and colspan attributes; Changing the Alignment of a Table or Cell Value-Setting Horizontal Alignment (using align attribute), Setting Vertical Alignment (using valign attributes)

Chapter 4: HTML-III

- **URLs and Their Types:** Absolute URL, Relative URL-Relative File Path Delimiters
- **Working with Images:** Working with Attributes of tag-Setting Alternate Text for the Image, Setting Width and Height of the Image, Setting Image Alignment
- **Working with Hyperlinks:** Different states of links (unvisited, visited, active) Attributes of Anchor Tag: Setting Titles for Links, Setting Target Window; Linking with Images; Link to an Email Address; Named Anchors or Creating Bookmarks
- **Working with Forms:** <FORM> Tag; Action and Method attributes of form; Elements or Controls for the HTML Form-Textbox Control, Text Area Control, Password Field Control, Checkbox Control, Radio button Control, Selection List Control, File Selection Control, Button Control, Submit Button, Reset Button
- **Phases of Web Development:** Information Gathering, Planning, Design & Layout, Development, Testing & Launch, Maintenance

Unit-III

Chapter 5: Operating System

- **Introduction**, Operating System, Services provided by operating System- User Interface, Program execution, I/O operations, File System manipulation, Communication, Error Detection, Resource Allocation, Protection;
- **Types of Operating Systems:** Batch Operating System, Multi-Programming Operating System, Time-Sharing Operating Systems, Multi-Processing Operating System, Network Operating System, Real Time Operating System, Single-User and Multi-User Operating Systems
- **Computer Security:** CIA Triads-Confidentiality, Integrity, Availability; Computer Security Threats: Malware, Phishing, Rootkit, Key logger; How Do We Secure Our Computer: Latest Anti-Malware software, Password protection, Apply Latest Updates & Patches, Firewall etc.

Unit-IV

Chapter 6: Desktop Publishing

- **Desktop Publishing:** Definition, Features of Desktop Publishing
- **Desktop –Publishing Software:** Introduction of Microsoft Publisher, Adobe Photoshop, Corel Draw, QuarkXPress, Adobe Dreamweaver, GIMP
- **Word Processing vs. Desktop Publishing:** Similarities between Word Processing and Desktop Publishing, Differences between Word Processing and Desktop Publishing
- **WYSIWYG Feature;** Graphics: 2D Graphics (Raster or Bitmap Graphics, Vector Graphics) 3D Graphics
- **Margins, Gutter Margin, Fonts, Frames and Layers**
- **Printers:** Impact printers-Dot-Matrix Printers, Daisy-wheel Printers, Line Printers; Non-Impact Printers-Ink-jet printers, Laser printers; Difference between Impact Printer and Non-Impact Printer; Difference between Inkjet Printer and Laser Printer

Chapter 7: Microsoft Publisher

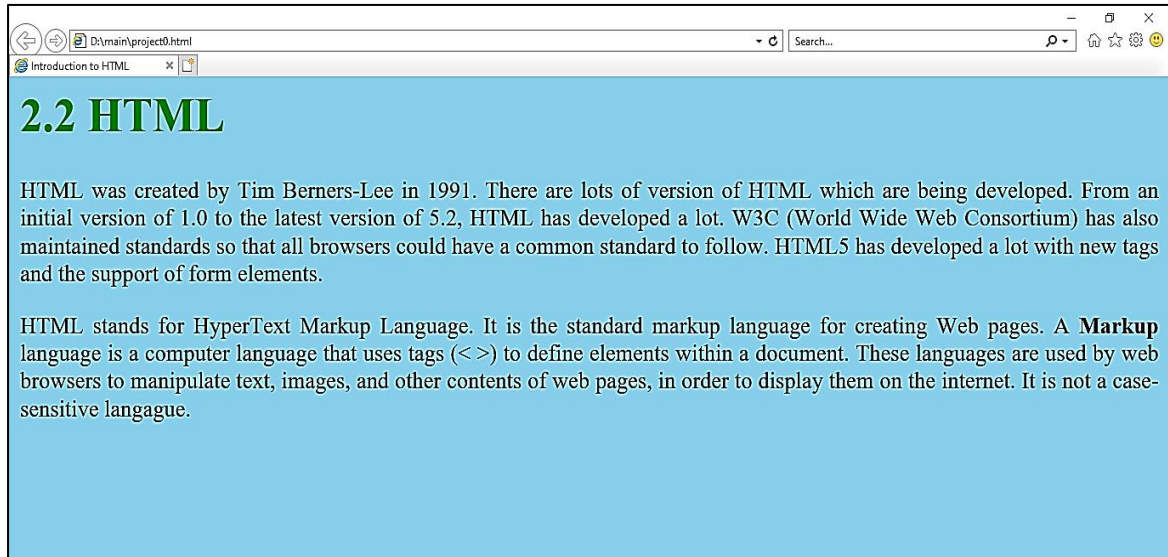
- **What is Publisher?**, How to start publisher
- **Components of the Publisher Window:** The Quick Access Toolbar, Ribbon and Tabs, File Window,
- **Creating a Publication:** Creating a publication using Blank Layout, Creating a Publication using Templates (Installed Templates, Online Templates, My Templates) Customizing Templates
- **Advertisements:** Brochures-Creating Brochures using MS-Publisher; Newsletters-Creating Newsletters using MS-Publisher, Banners-Creating Banners using MS-Publisher; Business Cards-Creating Business Card in Publisher;
- Award Certificates, Greeting Cards / Invitation Cards / Compliment Cards, Envelops, Letterhead-Creating Letterhead in Publisher, Resumes-Creating Resumes in MS Publisher, Curriculum Vitae (CV); Signs
- Saving Publication, Printing Publication

Practical Activities

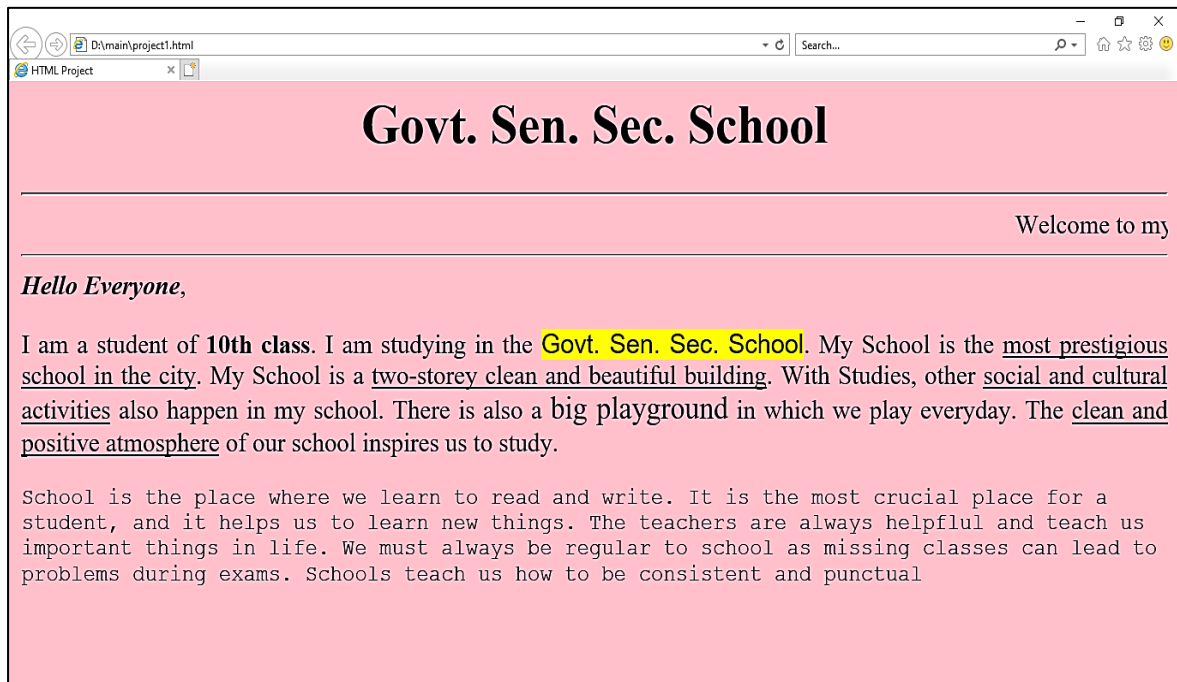
10th Class (Computer Science)

1. **Open Google Docs using Google Chrome web browser and prepare a leave application for urgent Work in it. After preparing the application download it in DOCS and PDF format.**
2. **Open Google Sheets using Google Chrome web browser and prepare the result of 5 students of your class in it. After preparing the result, share the sheet with other students of your class so that they can enter the results of 5 other students in that sheet. Now again open the same sheet on your computer and check the results of students entered by other students.**
3. **Open NOTEPAD++ and create a simple web page using simple HTML structure. Then save it as a webpage with the name MYWEBPAGE and open it in any web browser.**

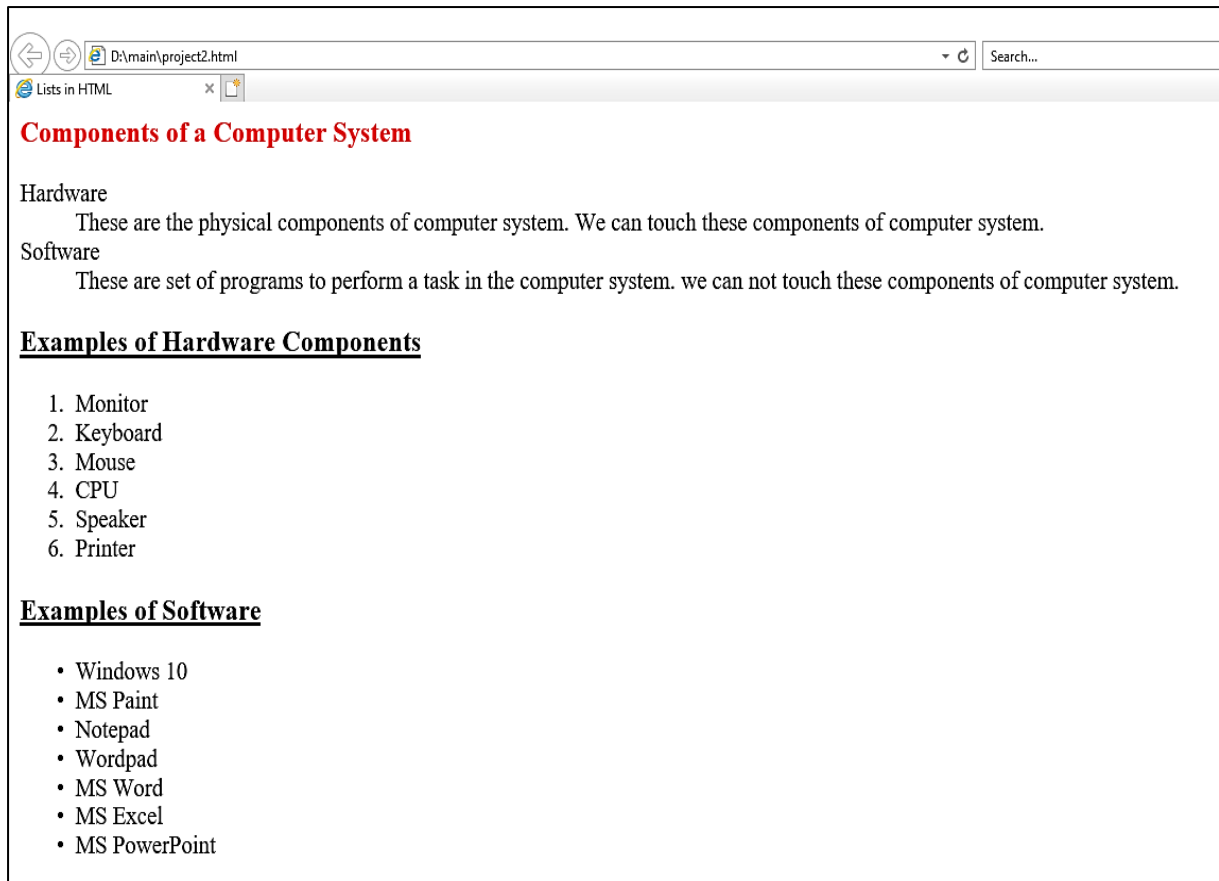
4. Create a web page showing an introduction to HTML, as shown in the example below. Set the background color of the body of this web page to skyblue. Save the file as “project0.html” and view the output in a web-browser.



5. Create the following webpage using the basic HTML tags that you learned in your syllabus:



6. Create a web-page using HTML that displays the output as shown in the web-browser below.



The screenshot shows a web browser window with the address bar displaying 'D:\main\project2.html'. The page title is 'Lists in HTML'. The main content of the page is as follows:

Components of a Computer System

Hardware
These are the physical components of computer system. We can touch these components of computer system.

Software
These are set of programs to perform a task in the computer system. we can not touch these components of computer system.

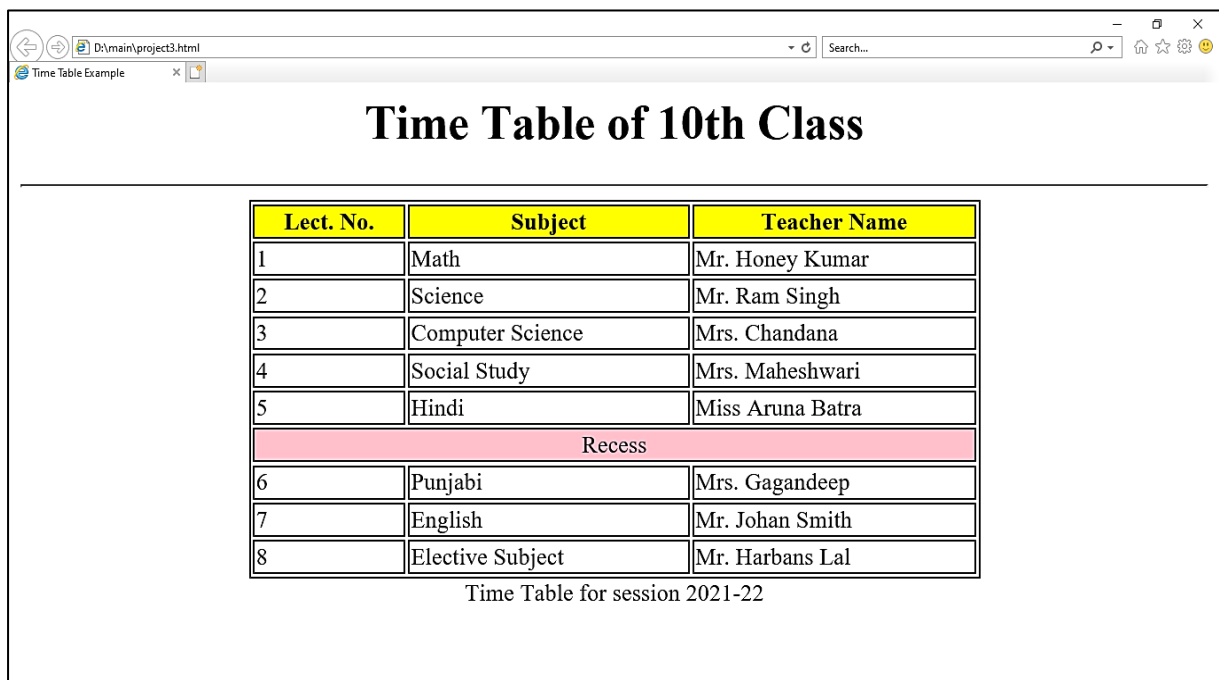
Examples of Hardware Components

1. Monitor
2. Keyboard
3. Mouse
4. CPU
5. Speaker
6. Printer

Examples of Software

- Windows 10
- MS Paint
- Notepad
- Wordpad
- MS Word
- MS Excel
- MS PowerPoint

7. Create time table of your class with the help of table in web page using HTML as shown below:



The screenshot shows a web browser window with the address bar displaying 'D:\main\project3.html'. The page title is 'Time Table Example'. The main content of the page is as follows:

Time Table of 10th Class

Lect. No.	Subject	Teacher Name
1	Math	Mr. Honey Kumar
2	Science	Mr. Ram Singh
3	Computer Science	Mrs. Chandana
4	Social Study	Mrs. Maheshwari
5	Hindi	Miss Aruna Batra
Recess		
6	Punjabi	Mrs. Gagandeep
7	English	Mr. Johan Smith
8	Elective Subject	Mr. Harbans Lal

Time Table for session 2021-22

8. Create a table in a web page using HTML as per the web page shown below. Use ROWSPAN and COLSPAN attributes to merge table cells and ALIGN and VALIGN attributes to align data in cells.

Roll No	Name of Student	Class
101	Paramveer	12th
102	Karanveer	
103	Kavyanjali	10th
104	Divyanshi	
105	Sunny	
Total Students		5

Table: Student Information

9. Create your school web page as shown in the figure below and save it as "myschool.html". Show the scrolling text using the MARQUEE tag and download any image from the internet depicting the school building that you can use in your webpage.



10. Create a web page that displays some useful links of local and global resources, as shown below:

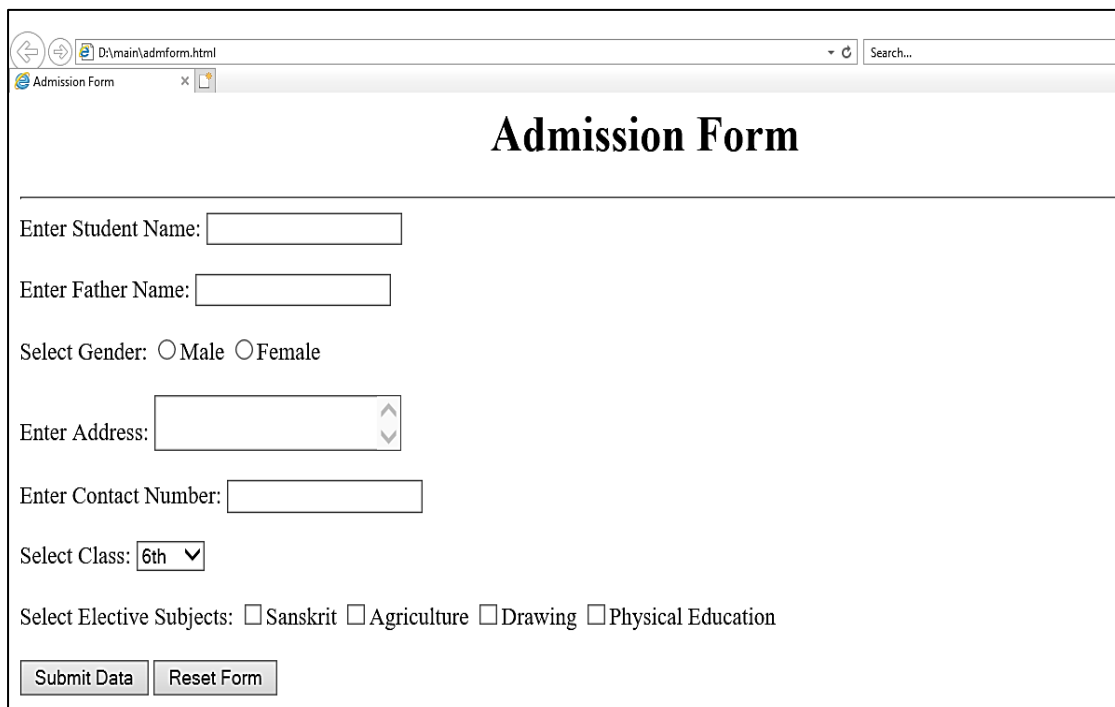


The screenshot shows a web browser window with the address bar displaying 'D:\main\usefulsites.html'. The page title is 'Some Useful Links for Students'. Below the title, there are four hyperlinks listed vertically: 'My School', 'Punjab School Education Board', 'ePunjabSchool', and 'Ashirwad Portal for Scholarships'.

Generate links as below:

- Link "My School" to the local web page that we created in Activity 9 ("./myschool.html").
- Link "Punjab School Education Board" to its official website "http://www.pseb.ac.in/".
- Link "ePunjabSchool" to its official website "https://www.epunjabschool.gov.in/".
- Link "Ashirwad Portal for Scholarships" to its official website "http://scholarships.punjab.gov.in/".

11. Create an "Entry Form" using HTML-Form as shown below. This form uses the controls used in HTML forms like Textboxes, Textareas, Selection Lists, Checkboxes and Buttons etc.



The screenshot shows a web browser window with the address bar displaying 'D:\main\admform.html'. The page title is 'Admission Form'. The form contains the following elements:

- Enter Student Name:
- Enter Father Name:
- Select Gender: ☐ Male ☐ Female
- Enter Address:
- Enter Contact Number:
- Select Class:
- Select Elective Subjects: ☐ Sanskrit ☐ Agriculture ☐ Drawing ☐ Physical Education
- Submit Data Reset Form

12. Generate the web page using HTML as shown below. You can download images from the internet and use them in the table accordingly and create hyperlinks to the respective websites in the "Favourite Websites" column.

Student Records

S. No.	Image	First Name	Last Name	Class	Favourite Website
1		Mohan Lal	Sharma	10th	Google
2		Kavya	Kumari	10th	YouTube
3		Karanveer	Singh	10th	PSEB

13. Create a web-form using tables in HTML as shown below

Fill the form below	
Name	
Password	
Feedback	
Gender	☐ Male ☐ Female
Subject	☐ Web ☐ Math ☐ Graphics ☐ English
	Reset All Submit Above Details

14. Create an advertising publication for your school with the help of templates in MS Publisher.
15. Prepare Business Cards and Award Certificates for yourself in the MS Publisher.

Charts/Models

- **Prepare charts/models illustrating different Types of Software.**
- **Create charts/models showing the functions of various Tags and Attributes related to Tables in HTML.**
- **Prepare charts/models related to different Types of Operating Systems.**
- **Create a chart/model showing the difference between Raster (Bitmap) Graphics and Vector Graphics.**
- **Create a chart/model showing the Different Components of the MS Publisher Window.**

COMPUTER SCIENCE
CLASS XI
(Session 2026-27)

Learning Outcomes:

Students should be able to:

- a) Develop basic computational thinking using Python
- b) Explain and use of data types, operators and control statements and other fundamental topics of Python
- c) Ability to understand the issues related to Cyber-Crimes and Safety, E-Waste Management
- d) Introduction to IT Act
- e) Ability to follow basic cyber ethics
- f) Understanding of Various types of Number Systems used by Computer Systems
- g) Ability to have understanding of various concepts of Databases
- h) Ability to use and work with SQL statements

Unit I

Chapter 1: Number System:

- **Number Systems:** Introduction, Decimal Number System, Binary Number System, Octal Number System, Hexadecimal Number System

Chapter 5 : Basic Concepts of Database Management System

- **Database concepts:** Introduction to Data, Information, Database and its needs, Traditional File System v/s Database System
- **Data Models:** Introduction, Hierarchical Data Model, Network Data Model, Relational Data Model
- **Introduction to DBMS:** DBMS, Components of DBMS
- **Relational Data Model:** Relation, Attribute, Tuple, Domain, Degree, Cardinality, Keys (Candidate Key, Primary Key, Alternate Key, Foreign Key)
- SQL

Unit II

Chapter 6: Computer System Maintenance:

- **Introduction:** Computer Maintenance and Security
- **Preventive Maintenance:** Basic Guidelines for Preventive Maintenance

- **Bootling and Safe Mode Problems:** How to Start Windows in Safe Mode, How to Fix Your PC in Safe Mode-Scan for Malware, Run System Restore, Uninstall Recently Installed Software, Update Hardware Drivers, To check system crashes
- **Installation of Device Drivers:** Download the drivers manually, How to install the driver; Plug and Play Hardware Installation
- **Type of Ports:** Serial Port, Parallel Port, PS/2 Port, Universal Serial Bus (or USB) Port, VGA Port, Power Connector, Modem Port. Ethernet Port. Digital Video Interface, DVI port
- **PC Security Tools:** Importance of PC Security tools
- Software Update and Upgrade
- **Introduction to Windows Operating Systems:** Windows 10, Windows 8.1, Windows 7
- Installation of Python (GUI), IDEs
- **Control Panel:** Display Properties, Mouse and Keyboard, Date and Time, Devices and Printers, Regional Settings, Fonts
- **Utility Programs:** File Compression tools, Disk Defragmentation, Disk Clean-up, Backup and Restore
- **Shutting Down Options:** Switch User, Log Off, Lock Screen, Restart, Sleep, Hibernate, Shut Down or Turn Off

Chapter 7: Cyber Security and Ethics

- **Cyber-Crime:** Definition, Hacking, Spying (Eavesdropping), Phishing and Fraud Emails, Ransomware, Preventing Cyber Crime
- **Cyber Safety:** Safely Browsing the Web, Identity Protection, Confidentiality, Cyber Trolls and Bullying
- **Safely Accessing Web Sites:** Adware, Malware, Viruses, Trojans, Phishing and Identity Verification
- **E-Waste Management:** Proper disposal of used Electronic Gadgets
- **IT Act:** Indian Information Technology Act (IT Act) 2000

Unit-III

Chapter 2: Basic Concepts of Python Programming:

- **Basic concepts for Python Programming:** Python Character Set, Python Tokens (Keyword, Identifier, Literal, Operator, Punctuator), Variables, Concept of L-Value and R-Value, Use of Comments

Chapter 3: Data Types, Operators and Expressions in Python:

- **Data Types:** Number (Integer, Floating Point, Complex), Boolean, Sequence (String, List, Tuple), None, Mapping (Dictionary), Mutable and Immutable Data Types
- **Operators:** Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operator, Augmented Assignment Operators, Identity Operators (is, is not), Membership Operators (in, not in)
- **Expressions, Statement, Type Conversion & Input/Output:** Precedence of Operators, Expression, Evaluation of Expression, Python Statement, Type Conversion (Explicit & Implicit Conversion), Accepting Data as Input from the Console and Displaying Output

Unit IV

Chapter4: Control Statements in Python:

- **Introduction:** Use of Indentation, Sequential Flow, Conditional and Iterative Flow control
- **Conditional Statements:** if, if-else, if-elif-else, Flowcharts, Simple Programs: e.g.: absolute value, largest of 2 and 3 numbers, finding divisibility of numbers etc
- **Iterative Statements:** for loop, Range Function, while loop, Flowcharts, break and continue statements, nested loops, Suggested Programs: Generating Pattern, Summation of series, Finding the Factorial of a positive number etc

Practical Activities

Python Programming

- Input a welcome message and display it.
- Input two numbers and display the larger / smaller number
- Input three numbers and display the largest / smallest number.
- Generate the following patterns using nested loops:

Pattern-1	Pattern-2	Pattern-3
* ** *** **** *****	12345 1234 123 12 1	A AB ABC ABCD ABCDE

- Write a program to input the value of x and n and print the sum of the following series:
 - $1 + x + x^2 + x^3 + x^4 + \dots x^n$
 - $1 - x + x^2 - x^3 + x^4 - \dots x^n$
 - $x + \frac{x^2}{2} + \frac{x^3}{3} + \frac{x^4}{4} + \dots \frac{x^n}{n}$
 - $x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \dots \frac{x^n}{n!}$
- Determine whether a number is a perfect number, an Armstrong number or a palindrome.
- Input a number and check if the number is a prime or composite number.
- Display the terms of a Fibonacci series.
- Compute the greatest common divisor and least common multiple of two integers.

Project

- The aim of the class project is to create something that is tangible and useful using Python. This should be done in groups of five to six students and should be started by students at least 3 months before the submission deadline. The aim here is to find a real-world problem that is worthwhile to solve.
- Students are encouraged to solve general and the school level problems, such as-create a calculator for general calculations, create a project to solve mathematical problems like area / perimeter of circle / square / rectangle etc., create a project to calculate the result of a student, create a project to calculate the net bill for sale with discount, create a database to store the student information etc. Students are also encouraged to use comments properly in the programs.
- To do some of these above-mentioned project suggestions, some additional learning is required. This should be encouraged. Students should know how to teach themselves.
- The students should be sensitized to avoid plagiarism and violations of copyright issues while working on projects. Teachers should take necessary measures for this.

Syllabus - Computer Science

Session 2026-27

Class 12th

Unit-I

Chapter 1: Office Automation and Typing

- Word Processor: Introduction to MS Word
- Document Writing and Editing in MS Word: Adding new text, Deleting a part of the text, Copying a text, Moving text, Formatting text, Alignment, Line Spacing, Bullets and Numbering
- **Working with Fonts:** Change the Font, Change the Default Font Settings
- **Proofing:** Auto Correct, Spelling & Grammar; Find and Replace
- **Page Setup:** Margins, Orientation, Paper Size; Page Borders; Print Preview & Print
- **MS Excel** – Spread sheet Software; Formula Bar; Working with Formulas- Mathematical Operators for Formulas, Basic steps for creating a formula, Manual Formula
- **Working with Functions:** Steps for using a function, AutoSum, Commonly Used Functions – SUM, COUNT, MAX, MIN, AVERAGE, NOW, TODAY, CONCATENATE, UPPER, PROPER; Relational Operators for Conditional/Logical Functions, Conditional Functions-IF, SUMIF, COUNTIF
- Border and Shading, Custom Filter, Custom Sort, Freeze Panes
- Page Setup and Printing Options: Margins, Orientation, Size, Print Area, Breaks, Background, Print Titles
- **File Conversion:** How to convert an Excel file to a PDF
- **Typing Technique:** Touch Typing, Voice Typing
- Font Conversion Tool

Chapter 4: Computer Network

- Introduction to Network, Need of Networking
- **The OSI Layers:** Physical Layer, Data-Link Layer, Network Layer, Transport Layer, Session Layer, Presentation Layer, Application Layer

- **Network Devices:** Hub (Active Hub, Passive Hub, Intelligence hub), Switch, Routers- Functions of a Router, Repeater, Bridge- Types of Bridges, Gateway, Brouter
- **Communication Media:** Guided Media- Twisted Pair Cable (Unshielded Twisted Pair (UTP), Shielded Twisted Pair (STP), Advantages and Disadvantages of twisted pair cable), Coaxial Cable (Advantages and Disadvantages of Coaxial cable), Optical Fibre (Advantages and Disadvantages of optical fibre); Unguided Media- Infrared (Applications of Infrared Waves in Communications), NFC, Bluetooth, Wi-Fi, Radio Waves (Applications, Advantages and Disadvantages of Radio-waves), Micro waves (Applications, Advantages and Disadvantages of Microwave), Satellites (Advantages and Disadvantages of Satellite Microwave)
- **Communication Modes:** Categories of transmission Modes- Simplex Mode (Advantage and Disadvantages of Simplex mode), Half-Duplex Mode (Advantage and Disadvantages of Half-Duplex mode), Full Duplex Mode (Advantage and Disadvantages of Full-Duplex mode)
- **Network Sharing:** Printer Sharing
- **Protocol:** TCP/IP, FTP, PPP, SMTP, POP/IMAP, HTTP
- Network Component Addresses: MAC Address, IP Address

Unit-II

Chapter 2: Functions in Python

- Introduction to functions and their benefits, Types of Functions
- **Built-In Library Functions:** How to Use Built-in Functions in Python?, Commonly used Built-in Functions of Python – bin(), oct(), hex(), chr(), ord(), abs(), divmod(), max(), min(), pow(), sum(), round(), sorted(), reversed() functions.
- **User Defined Functions in Python:** How to define and use a User Defined Function (UDF) in Python, Parameters Vs Arguments
- **Python Modules:** How to Create and use a User Defined Module?, Using Built-in Modules of Python

Chapter 3: Built-In Collections of Python

- **Introduction to Python's Built-In Collections:** Sequences, Mappings & Sets
- **Working with Sequences:** Common Sequence Types – Strings, Indexing of Strings, Lists, Indexing of Lists, Tuples, Tuples Packing and Unpacking, and Indexing of Tuples. Traversing Sequences Using Loops – using for loops (using range() function & without range() function), using while loop. Operators for Sequences – Concatenation, Repetition, Membership, and Slicing Operators.
- **Working with Mappings:** Dictionary, Traversing a Dictionary, Mutability of Dictionary – Add, Update and Delete values of dictionary
- Working with Sets

Unit-III

Chapter 5: Current Trends in Information Technology

- Introduction to Information Technology, Definition of Information Technology
- **Applications of Information Technology:** Business, Classroom Education, Online Education, Finance, Health, Media, Transport, Telecommunication, Entertainment, Defence
- **Current Trends in Information Technology:** Mobile Internet, Wi-Fi Technology, Bluetooth technology, E-Commerce, M-Commerce Technology, GPS Technology, Android Technology, Virtual Reality, Nanotechnology, 5G Technologies, Internet of Things (IoT) Technology, Multimedia Technology, Cloud Computing: Cloud Printing, Cloud Storage (Advantages and Disadvantages)

Chapter 6: Artificial Intelligence and Expert System

- Introduction to AI, What is Artificial Intelligence?
- **Types of AI:** Type-1 (Narrow Artificial Intelligence (NAI), General Artificial Intelligence (GAI), Strong Artificial Intelligence (SAI)), Type-1I (Reactive Machines, Limited Memory Machine, Theory of Mind, Self-Awareness)

- **Importance of AI:** Game Playing, Voice Recognition, Understanding the Natural Language, Computer Vision& analysis
- **Applications of AI:** Intrusion Detection System, Gaming, Natural Language Processing, Machine Learning, Expert Systems, Vision Systems, Speech Recognition, Handwriting Recognition, Intelligent Robots
- Purpose or Goal of AI, Pros and Cons of Artificial Intelligence
- **Expert Systems:** Components of Expert System (User Interface, Inference Engine, Knowledge Base), Characteristics of Expert Systems, Limitations of Expert systems, Comparison between Human and Expert Systems
- **Robotics:** Generations of Robots, Applications of Robotics, Introduction of Languages used to develop AI (Python, R, Lisp, Prolog, Java)

Unit-IV

Chapter 7: Digitalization

- Introduction to Digitalization
- **E-Commerce:** Types of E-Commerce-Business to Business (B2B), Business to Customer (B2C), Customer to Customer (C2C), Customer to Business (C2B); Advantages of E-Commerce, Disadvantages of E-Commerce
- **Digital or Online Payment:** Online Payment Methods-Credit Card, Debit Card, E-Wallets, NetBanking / Banking Apps, Mobile Banking, BHIM App (Bharat Interface for Money); Benefits of Online Payment
- **E-Learning:** MOOCs (Massive Open Online Courses), SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds), SWAYAM PRABHA
- National Academy Depository (NAD)
- **Digital Locker:** How to use DigiLocker

Chapter 8: E-Governance (Part-2)

- Introduction, Concept of E-Governance
- **Working System of E-Governance:** G2G (Government to Government), G2C (Government to Citizen), G2B (Government to Business), G2E (Government to Employee), G2N (Government to NGOs)
- **Levels of E-Governance:** National Level, Domestic Level/State Level, International Level; Benefits & Drawbacks of E-Governance;

- What is Smart Governance?; Sarba Sewa/Sewa Kendra/Sanjh Kendra
- **Awareness of Aadhar:** What is an Aadhar, Features of Aadhar, Uses of Aadhar
- **Information System:** Components of Information System, Types of Information System-Transaction Processing System (TPS), Decision Support System (DSS), Executive Information System (EIS), Management Information System (MIS), Expert System

Practical Activities

12th Class (Computer Science)

1. After preparing the resume in MS Word as shown below, save the Word document with your name, print it and save your resume in PDF format:

Your Name Mobile-: 91- Your Contact Number youremailid@gmail.com	
Objective: To work with a group of people where I can utilize my acquired knowledge & skills for the betterment of organization and subsequently gain expertise in my area of work.	
Education qualification	
➤ 12th from PSEB Punjab in 2020 with <u>90.33%</u>. ➤ 10th from PSEB Punjab in 2018 with <u>86.50%</u>.	
Personal Qualities	
➤ Always willing to learn new things ➤ Flexible to work with any team environment ➤ Never give up ➤ Team work ability ➤ Punctual and Disciplined ➤ Do things with Patience and perseverance	
Personal Information	
Father's Name	Your Father Name
Date of Birth:	DD-MM-YYYY
Gender:	Male/Female
Nationality:	Indian
Address	House No, Street No, Address Line1 Address Line 2 Pin Code: XXXXXX, District: AAAAAAA, Punjab
Hobbies	
• Social restructuring through awareness and education • Imparting knowledge to others • Meditating.	
Declaration	
I hereby declare that all the above stated information is correct and true to the best of my knowledge and belief.	
Date: DD-MM-YYYY	
Place: Your City Name	Signature

2. Prepare the Word document as shown below:

Sales Invoice

Invoice Number: INV0076

Submitted Date: 2020-05-04

To

Account Name:

E-mail: murli@abc.com

Phone Number: 7865389176

Point of Contact: David

Invoice Details

Invoice Date: 2020-05-04

PO Date: 2020-05-04

PO Number: 123

PO Amount: \$450.00

Payment Terms: Net30

Invoice Items:

Product	Price	Quantity	Total Price
Camera	\$200.00	1	\$200.00
TV	\$150.00	1	\$150.00
Video Game	\$100.00	1	\$100.00

Invoice Summary

Subtotal: \$450.00	Tax: \$10.00	Freight Charges: 4.00
		Total Invoice Amount: \$464.00

3. Prepare the result sheet in Excel as shown below. It generates the result using formulas and functions and displays the result data by formatting it with the help of Conditional Formatting:

S.No.	Name of the Student	Class	Pol Science	History	Comp Sci	Total	Percentage	Result
1	Mohinder Singh	12th	56	86	98	240	80.00	Pass
2	Rajpal Kaur	12th	23	56	95	151	50.33	Pass
3	Monika Devi	12th	63	56	63	182	60.67	Pass
4	Palwinder Kaur	12th	Absent	Absent	Absent	Absent	Absent	Absent
5	Ramesh Lal	12th	63	65	56	184	61.33	Pass
6	Yunus Khan	12th	98	85	90	273	91.00	Pass
7	Meera Devi	12th	13	33	30	0	0.00	Fail
8	Ram Kumar	12th	69	56	80	205	68.33	Pass
9	John	12th	Absent	Absent	Absent	Absent	Absent	Absent
10	Rakesh Kumar	12th	62	75	75	212	70.67	Pass
Total Number of Students			10					
Total Absent Students			2					
No of Students Passed			7					
No of Students Failed			1					
Max Marks			273					
Min Marks			0					

4. Prepare Time Table of your class in Excel.
5. Convert the integer value 45 into its binary, octal and hexadecimal equivalents.
6. Find the Unicode value for the characters: A, m, 8, %
7. Find the quotient and remainder values for the following divisions: 56/6, 45/52
8. Find the minimum and maximum values from the list [45,56,17,4,85,78]
9. Write a program to calculate sum of the list [45,56,17,4,85,78] and then sort the list using python functions.
10. Define a user defined function in python to calculate the area of circle.
11. Write a program in Python to traverse a list using for loop.
12. Write a program in Python to traverse a string using while loop.
13. Write a program to perform concatenation of two or more lists in Python.
14. Write a program to perform slicing operation on a String.
15. Write a program to check if an item is available in the list or not.
16. Write a program in Python to add, update and delete items of a dictionary.
17. Download the syllabus and ebooks of your subjects from the official website of Punjab School Education Board (<https://www.pseb.ac.in/>).
18. Create your account on Digi locker and download your Aadhaar Card or 10th Class DMC.
19. Edit an image using any Image Editing Software and make necessary changes in it as per your requirement.
20. Compress the size of any image and save it in PDF format.
21. Create a movie by joining different photos with the help of any Video Editing Software. Also insert Titles, Transition Effects etc. in the movie.
22. Merge and Splits some audio/video files with the help of any Audio/Video Cutter/Joiner.

Charts/Models

- **Prepare a chart/model showing the various types of functions in Python**
- **Prepare a chart/model showing the various types of Commonly used Built-In Collections in Python**
- **Prepare a chart/model showing the Indexing representation of Sequences in Python**
- **Prepare charts/models illustrating different Types of Communication Media**
- **Prepare charts/models showing Types of Communication Modes with suitable Examples**
- **Prepare charts/models showing Current Trends in Information Technology (IT)**
- **Prepare a chart/model showing the various Components of the Expert System**
- **Prepare a chart/model illustrating the Types of E-Governance**