SKILL ORIENTED PRACTICALS (SOP)

Note :

Students should file minimum 12 skill sets from the SOPs as follows-

- Advanced Web Designing   - Any 05
- JavaScript   - Any 04
- Server side scripting   - Any 03

1. Advanced Web Designing

SOP 1 : **Creation of website using HTML5**

Create a website using HTML5 and CSS using any 4 CSS properties. Write a code for 2 separate pages having different file names such as first page as Index. html and second page as page2.html. Use any theme such as college profile or company profile etc. Every page must contain proper Meta information and design web page as follows-

1) The index page must contain a heading which is highest among other text on pages and must be at centre of the page. There must be a paragraph which introduces general information about the theme chosen must have at least 3 physical style tags and one image with alternate text. This page must be connected to other page with proper navigational links.

2) The 2nd page must contain the feedback or enrolment form related with theme chosen with features of HTML5. The form must contain text element and email address of the company or person. Include the submit button.

SOP 2 : **Create a webpage using HTML and CSS code to design a web page as the layout displayed below.**

The top section will display the heading , 'Tourist places' in header. The section on the left has list of cities. The right hand side displays tourist places of any one of the city .

Use Inline style sheet in the top section to display background color for the text 'Tourist places'. Use internal stylesheet for the left and right section with background color and font styles.

Tourist places	
City 1. Pune 2. Banglore 3. Hyderabad 4. Delhi	Tourist places in Pune • Shanivarwada • Kelkar Museum • Sinhgad fort

SOP 3 : **Create a website using HTML and CSS code to design webpages as follows -**

The first webpage will accept the name of the traveller, date of travel , telephone number . It also has submit button as an image .

The second webpage has information about the name of transporter, time , seat no and destination displayed one below the other in the form of unordered list as
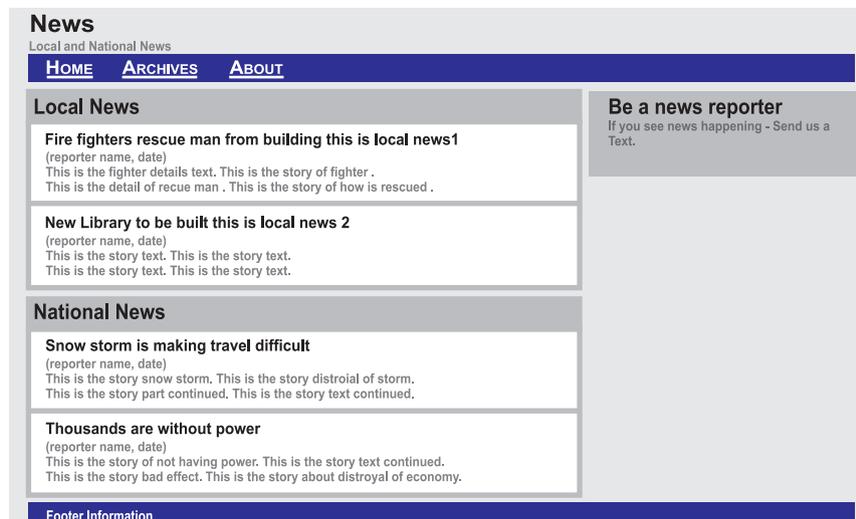Name of transporter – Air Asia
Time - 09:30 am
Seat no – B39
Destination - Delhi
Both pages should be interlinked. Create external stylesheet with relevant tags.

SOP 4 : **Creation of website using HTML5 and CSS.**

Create a webpage as given layout use <nav>,<header>,<footer>,<aside>, <article> with CSS.

SOP 5 : **Use of Audio on web pages using HTML5.**

Create a webpage named audio.html to set an audio file in web page with controls such that it uses HTML5 elements. The audio file must play as soon as the webpage loads in browser and it will start over again, every time when it is completed.

Create another webpage named audio1.html which provides multiple source file formats for the same audio file that plays a sound with controls. The browser should display the message with appropriate attribute, when audio tag is not supported by browser. The code must incorporate the list of sound files formats (like wav, MP3 or ogg etc).

SOP 6 : **Use of video on web pages using html5.**

Create a webpage named video.HTML to display a video file on web page and plays automatically. The dimension of video area should be 150 * 150 pixels.
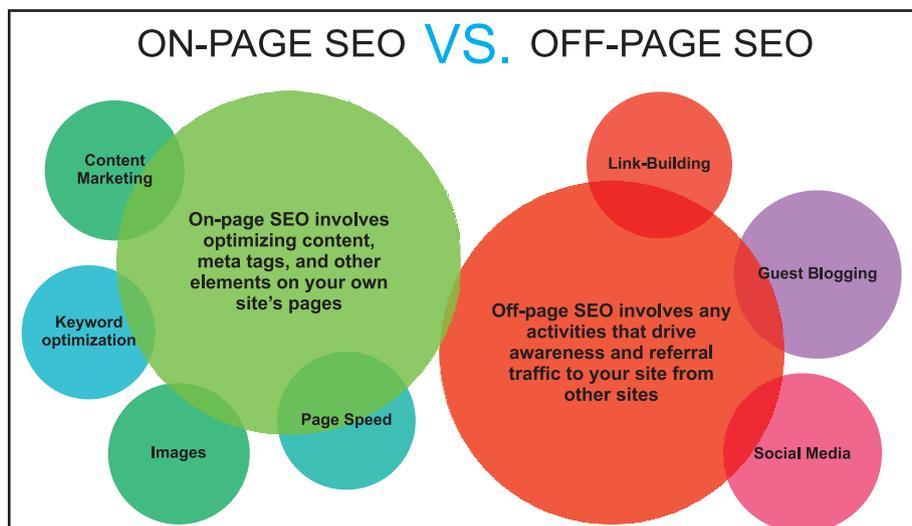
Create another webpage which video provide multiple source file formats for the same video file that plays a video with controls. The dimension of video area should be 300*300 pixels. The browser should display the message with appropriate attribute when video tag is not supported by browser. The code must incorporate the list of video files formats (like webM, MP4 or ogg etc).

SOP 7 : **Navigation on an image using Client side image Mapping in web page using html 5.**

➢ Create a webpage named imagemap. html with an inserted image having jpeg, png or gif extension. Create 3 different shapes (like rectangle, circle and polygon) which do not overlap. Note down the co-ordinates making use of Ms-Paint/GIMP/IrfanView/Pinta. Each shape should be mapped or navigate with a different URL that should navigate to a local webpage.

SOP 8 : **Use of SEO methodology to improvise the website.**

➢ Select a website.

➢ Use an appropriate SEO software and list out the page optimization requirements.

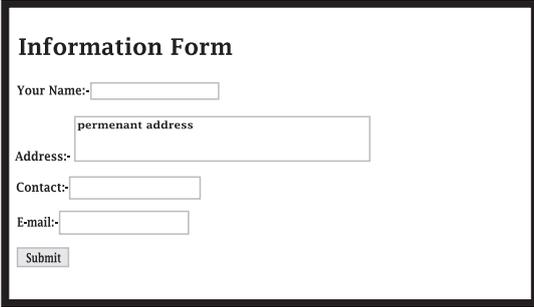➢ Write down at least 4 suggestions to optimise the web pages.

➢ Write importance of SEO.

ON-PAGE SEO VS. OFF-PAGE SEO

Content Marketing

On-page SEO involves optimizing content, meta tags, and other elements on your own site's pages

Keyword optimization

Images

Page Speed

Link-Building

Guest Blogging

Off-page SEO involves any activities that drive awareness and referral traffic to your site from other sites

Social Media

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2. Javascript

SOP 1 : Create a web page in HTML having a white background and one Button Object. Write code using JavaScript such that when the mouse is placed over the first button object without clicking, the color of the background of the page should change after every __ seconds. There should at least be 7 different and visibly distinct background colors excluding the default color.

Create another web page using JavaScript where the background color changes automatically after every ___ seconds. This event must be triggered automatically after the page gets loaded in the browser. There should at least be 7 different and visibly distinct background colors.

SOP 2 : **Create JavaScript program for the following form validations. Make use of HTML5 properties to do the following validations :**

1) Name, address, contact number and email are required fields of the form.

2) Address field should show the hint value which will disappear when field gets focus or key press event.

3) Telephone number should be maximum 10 digit number only.

4) Email field should contain valid email address, @ should appear only once and not at the beginning or at end. It must contain at least one dot(.).

5) Make use of pattern attribute for email to accept lowercase, uppercase alphabets, digits and specified symbols.

Information Form

Your Name:- [_____]

permenant address

Address:- [_____]

Contact:- [_____]

E-mail:- [_____]

[Submit]

SOP 3 : **Create event driven JavaScript program for the following. Make use of appropriate variables, JavaScript inbuilt string functions and control structures.**

➢ To accept string from user and count number of vowels in the given string.

SOP 4 : Create event driven JavaScript program for the following. Make use of appropriate variables, JavaScript inbuilt string functions and control structures.

➢ To accept string from user and reverse the given string and check whether it is palindrome or not.

SOP 5 : Create event driven JavaScript program to convert temperature to and from Celsius, Fahrenheit.

Formula: c/5= (f-32)/9

[where c=Temperature in Celsius and f=Temperature in Fahrenheit.]

Output format : 40 Celsius=104 Fahrenheit

45 Fahrenheit = 7.22222222 Celsius

SOP 6 : Create JavaScript program which compute the average marks of students. Accept six subject marks of student from user. Calculate average marks of student which is used to determine the corresponding grades.

Range	Grade
35 to 60	F
61 to 70	D
71 to 80	C
81 to 90	B
91 to 100	A

SOP 7 : Write a JavaScript function to get difference between two dates in days. Create a page in HTML that contains input box to accept date from user. The input boxes should be used by users to enter their date of birth in the format dd-mm-yyyy. Do not make use of any dropdown boxes.

Example :
date_diff_indays('04/02/2019', '11/04/2019');
date_diff_indays('01/01/2020', '31/01/2019');

Output :

66

-30

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3. Server-Side Scripting (PHP)

SOP 1 : Write a PHP program to check if a person is eligible to vote or not. The program should include the following-

- ➤ Minimum age required for vote is 18.
- ➤ Use PHP functions.
- ➤ Use Decision making statement.

SOP 2 : Write a PHP function to count the total number of vowels (a,e,i,o,u) from the string. Accept a string by using HTML form.

SOP 3 : Write a PHP program to perform the following operations on an associative array.

- ➤ Display elements of an array along with their keys.
- ➤ Display the size of an array.
- ➤ Delete an element from an array from the given index.

SOP 4 : Write a PHP program to save marks of English, Hindi, Marathi, Maths and Information Technology in an array. Display marks of individual subject along with total marks and percentage.

SOP 5 : Write a PHP program to save marks of English, Hindi, Marathi, Maths and information technology in an array for 5 students and display totals marks and percentage of each students using 'foreach'.

SOP 6 : Write a program using PHP to calculate Electricity bill by accepting the limits.

- ➤ For first 100 units - Rs. 4
- ➤ For next 100 units - Rs. 5
- ➤ For next all units - Rs. 6

SOP 7 : Write a PHP Program to insert a roll number and student name in a database (use postgresql data to create database). Accept roll number and name from the user.

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Cloud Computing Engineers

Basic Requirements :

Cloud engineers typically have at least a bachelor's degree in **computer** science or information technology. Those in the field often have years of software development experience, working with a variety of programming languages such as Java, Angular JS, C++, and Python.

Cloud computing engineers define, design, build, and maintain systems and solutions leveraging systems and infrastructure managed by cloud providers such as Amazon Web Services (AWS) and Microsoft Azure. Following are some of job roles in the cloud computing domain.

- Cloud Architect
- Cloud Consultant
- Cloud Product and Project Manager
- Cloud Services Developer
- Cloud Software and Network Engineer
- Cloud System Administrator
- Cloud System Engineer

Computer Network Specialists

Basic Requirements :

Computer network specialists and analysts define, design, build, and maintain a variety of data communication networks and systems. They typically have a bachelor's degree in computer science or a related field. Some also have a master's degree in business administration (MBA), with a focus on information systems. Network related jobs and projects. The job profiles are as-

- Computer and Information Research Scientist
- Computer and Information Systems Manager
- Computer Network Architect
- Computer Systems Analyst
- Computer Systems Manager
- IT Analyst
- IT Coordinator
- Network Administrator
- Network Architect
- Network and Computer Systems Administrator
- Network Engineer
- Network Systems Administrator
- Senior Network Architect
- Senior Network Engineer
- Senior Network System Administrator
- Telecommunications Specialist

Computer Support Specialist

Basic Requirements :

The computer user support specialist must be knowledgeable about the functioning of a computer system. Some of the employers appoint the technicians

on the basis of an associate's degree or postsecondary classes, while others prefer the applicants to have a bachelor degree.

Computer support specialists and network administrators help computer users and organizations. Some of these workers support computer networks by testing and evaluating network systems and ensuring that the day-to-day operations work. Others provide customer service by helping people with their computer problems. Some require a bachelor's degree, while others need an associate degree or post-secondary classes. They work as-

- Customer Support Administrator
- Customer Support Specialist
- Desktop Support Manager
- Desktop Support Specialist
- Help Desk Specialist
- Help Desk Technician
- IT Support Manager
- IT Support Specialist
- IT Systems Administrator
- Senior Support Specialist
- Senior System Administrator
- Support Specialist
- Systems Administrator
- Technical Specialist
- Technical Support Engineer
- Technical Support Specialist

Database Administrator

Basic Requirements :

Many employers prefer database administrators with at least a bachelor's degree in computer science or a related field. In some cases, a master's degree is required for higher-level positions. A bachelor's degree program is a 4-year program and is a prerequisite to a 2-year master's degree program.

Database administrators help store and organize data or companies and/or customers. They protect the data from unauthorized users. Some work for companies that provide computer design services. Others work for organizations with large database systems, such as educational institutions, financial firms and more. They can be employed as-

- Data Center Support Specialist
- Data Quality Manager
- Database Administrator
- Senior Database Administrator

Information Technology Leadership

Basic Requirements :

Obtain a bachelor's degree in computer science or information technology. Develop IT and leadership experience in a variety of IT roles, from entry-level support positions to IT manager. Most IT director positions require 10 years of experience. Earn your master's degree.

Leadership in IT draws from candidates with strong technology backgrounds and superior management skills. They have experience in creating and implementing policies and systems to meet IT objectives, and the ability to budget the time and funds necessary.

- Chief Information Officer (CIO)

- Chief Technology Officer (CTO)
- Director of Technology
- IT Director
- IT Manager
- Management Information Systems Director
- Technical Operations Officer

Information Security Specialist

Basic Requirements :

Hiring managers for IT security specialist positions generally require at least an undergraduate degree (associate or bachelor) in information security, computer information systems, network security, computer science or a related field of study.

The increased incidence of security breaches and the associated danger of identity theft has enhanced the importance of protecting data on commercial and governmental sites. Information securities analysts help defend an organization's computer network and computer systems. The job roles offered to them are-

- Information Security
- Security Specialist
- Senior Security Specialist

Software/Application Developer

Basic Requirements :

Most computer software development jobs require bachelor's degrees in computer science or software engineering. These programs have significant math requirements that include a sequence in calculus, differential equations, and linear algebra. A sequence in physics is also required.

Software developers design, run, and test various computer programs and applications. Application Developers create new applications and code solutions. They usually have a bachelor's degree in computer science or a related field. They also have strong programming skills, so can be employed as-

- Application Developer
- Applications Engineer
- Associate Developer
- Computer Programmer
- Developer
- Java Developer
- Junior Software Engineer
- .NET Developer
- Programmer
- Programmer Analyst
- Senior Applications Engineer
- Senior Programmer
- Senior Programmer Analyst
- Senior Software Engineer
- Senior System Architect
- Senior System Designer
- Senior Systems Software Engineer
- Software Architect
- Software Developer
- Software Engineer
- Software Quality Assurance Analyst
- System Architect

- Systems Software Engineer
- Mobile Application Developer

Web Developer

Basic Requirements :

Many employers prefer prospective Web developers to hold a bachelor's degree in computer science or a related field. Coursework often includes programming, database management, mathematics, Web design and networking.

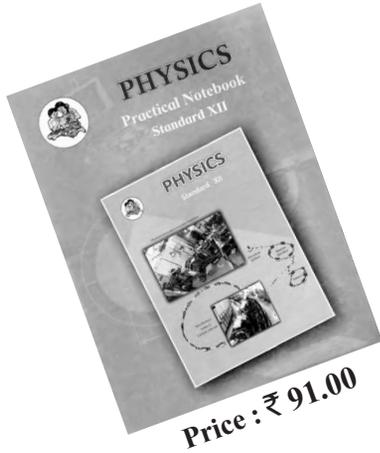Web developers design, create, and modify websites. They are responsible for maintaining a user-friendly, stable website that offers the necessary functionality for their client's needs. Some jobs require a bachelor's degree, while others need an associate degree, including classes in HTML, JavaScript, or SQL. This education can help to get employment as-

- Front End Developer
- Senior Web Administrator
- Senior Web Developer
- Web Administrator
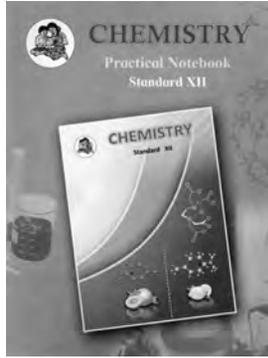- Web Developer
- Webmaster
- UX Designer

Professional certificate courses like RHCE, ORACLE, software testing etc. can be done to enhance the career opportunities.
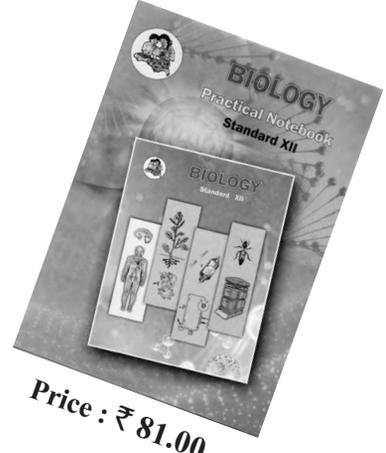
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