

Design ND Development of Knowledge Portal: Higher Secondary Education Sector

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Abstract—Day by day utilities of portals are increasing. Portal is better to the website. I decide that I will develop the knowledge portal for HSE sector. Higher secondary education sector is backbone of Indian education. Streams, syllabus, question papers, e-Books, Notes, video lectures, study tips etc. are major parts of the developing educational portal. The aim of this portal will share the knowledge to the students, teachers as well as parents. It will help to the learners of both Hindi and English mediums. HTML, PHP, CSS, Java scripts, XAMPP and My SQL are useful tools for design and development of this portal. The name of database is hses. sql. All web pages and images of this portal are stored in the CVRU directory. All secondary education requirements are arranging in this portal. In this research paper, we will identify the best higher secondary education.

Keywords-Streams; syllabus; question papers; e-Books; Video lecture.

I. INTRODUCTION

Higher secondary education sector is backbone of Indian education. Recently, 53 boards of education have been recognized by the Indian Government. India has primarily 4 boards of school education, namely Central board of secondary education (CBSE), Indian certificate secondary education (ICSE), State boards and International Baccalaureate (IB). CBSE was started in 3 November 1962. ICSE was founded in year 1956 in India. IB was founded in 1968 and now works with over 3000 schools in 141 countries.

The universal resource locator (URL) of my knowledge is <http://www.hseshiksha.in>. XAMPP control panel, My SQL, PHP and HTML, CSS and Java script are tools to design and development this portal. This portal is developed for my research purpose. Students, teachers and parents will be benefited to this portal. It also helps board as well as educational sector of the government.

A web portal is a website that works as a single source for all info on a particular domain. It is a specially designed website. It brings information from diverse sources together in a uniform way. Diverse sources can be emails, online forums and search engines etc. Web portals can be either horizontal or vertical. A portal that is used as a platform to several companies in the same economic sector or to the

same type of manufacturers or distributors is called horizontal portal. <http://www.yahoo.com>, <http://www.lycos.com>, and <http://www.netscape.com> are mega portals. A specialized entry point to a specific market or industry niche, subject area, or interest called vertical portal (also known as a "vortal"). An example of vertical portal is <http://www.wine.com>. Web Portal is different from Website.

Table 1

Web Portal	Website
Personal Login is required.	Personal Login is not required.
It is public/private interface.	It is a public interface.
It offers content from diverse sources	Content is generally focused in websites.
It supports the user in multiple tasks.	It supports the user in specific task.

II. KNOWLEDGE PORTAL DEVELOPMENT TOOLS

Knowledge portal for higher secondary education sector is developed by using tools. They are discussed below:

A. Basic Web Portal Languages

Hypertext Markup Language and Cascading Style Sheet are the two most basic web development languages. The HTML was firstly introduced in 1991 by Tim Berners-Lee. It is the

past, present, and future of the web and mobile applications. It is understood by web browsers like Firefox, Opera, Chrome, Safari, and Internet Explorer. It connects web pages to one another in the portal or website. HTML5 was fascinating with CSS to CSS3. CSS was proposed by Hakon Wium Lie in 1994 and was recommended by W3C in 1996 for using it worldwide with HTML. The presentation of web pages and always works with HTML is managed in Cascading Style Sheet. The word “cascading means multiple style sheets with one style sheet inheriting properties from others.

B. Client-Side Scripting

Client-side scripting includes HTML and CSS. JavaScript most commonly used client-side scripts. The original name of JavaScript was LiveScript when JavaScript was invented at Netscape. JavaScript was written by Brendan Eich in May 1995 who was working at Netscape. JavaScript makes a web page more interactive simply. Client-side scripting does all validation operation to the browser side and saves data from mismatching to the server side. With the help of JavaScript, HTML canvas is used for drawing graphics on the web page. JQuery was originally released in January 2006 by John Resig. jQuery is a well-written compact JavaScript code which is a small, mostly used JavaScript library. It increases the productivity of developer. It enables them to handle critical UI functionality in websites by writing a very small amount of code. jQuery is the most used library of JavaScript.

C. Server-Side Scripting

All websites need to be hosted in a database on a web server. Server-side scripting refers to any code that facilitates the transfer of data from that web server to a browser. It also refers to any code used to manage data or build a database on the web server itself. Server-side scripts run on the web server. It has the power and resources to run programs which are run by a web browser. The source code remains on the web server rather than temporarily stored on an individual's computer, so Server-side scripts are more secure.

D. PHP

PHP stands for PHP Hypertext Preprocessor. It is the fastest web scripting language and used as a general-purpose programming language. It is a server side scripting language. It is designed for web development. PHP was invented by Rasmus Lerdorf in 1994. It goes in rapid changes and launched its new versions as PHP3 in 1998, PHP4 in 2000 and PHP5 in 2004. PHP5 is the version which is currently in use for web development and included several new features like support for object-oriented programming, an interface for database access and other enhanced features. PHP6 and PHP7 are also launched with other new and enhanced features.

E. MySQL

The organized collection of data which helps a user to populate different data in a well-structured format is called database. A database system interacts with the user, middleware application, and database to capture and analyze data. Database system helps to deliver solutions with the kind of different approaches. Well, known Database systems include Oracle, PostgreSQL, MySQL, MongoDB, Microsoft SQL Server, Sybase, SAP HANA etc. The database system is generally portable for different DBMS systems as well as incorporates with others system using SQL standard. Every system or application needs to work with large amount of data sets which may be in, rough or unstructured formats. MySQL is the open source database software system which helps the developer to develop the user-friendly environment. Every working application and provides developers work in flexible systems are available for the scope of MySQL system. MySQL system is open for every soft-technology with a flexible and strong database.

III. STREAMS OF HIGHER SECONDARY EDUCATION

What stream to choose after class 10th? Choose the stream that best matches skills of student. When student follows the right path then they will surely success. Make sure to choose a stream that matches your own interest, potential, and ability. There are primarily three major streams after class 10th. Students can choose between Science, Commerce and Humanities/Arts. The science stream is related to engineering, medical, pharmacy and other such fields of study. The Commerce stream relates to business, trade, commerce, and financial sector. Arts stream is the widest of all, covering a whole lot of study fields, including Languages, Political Science, Psychology, Sociology etc. It is a common practice to base this important decision on the marks that the student obtains in class X examinations. So, a student who secures an 90% plus aggregate in his class X Board Exams, is sure 'candidate' for the Science subjects and another student who secures a 60% in his class X exams, assumes that Humanities or the Arts subjects is what he must be cut out for. A student who secures a less 90% and more 60% plus aggregate in his class X Board Exams, is sure 'candidate' for the Commerce streams.

A. Science Stream

The science stream is preferred by those students who are doing professional courses after 12th. The primary subjects in science stream are Physics, Chemistry, Biology, Mathematics and Computer Science. The compulsory subjects are English, Physics and Chemistry. The optional subjects are Mathematics / Physical Education and Biology / Computer Science / Engineering Graphics. There are practical labs along with theory. Few of the popular graduate courses after 12th for the science stream are BE, B. tech, BCA, B. Sc., MBBS, B. Pharmacy and more.

B. Commerce Stream

The core subjects in the commerce stream are Economics, Business Studies, Mathematics, and Computers. One language subject is optional and English is compulsory of this stream. Accounting, Informatics Practices, Business Communication, Finance, Statistics, etc are elective subjects for the commerce stream. After 12th of commerce stream, the popular graduate courses are BBA, B.Com, BMS, CA, BBM, and more.

C. Arts Stream

The arts stream holds the widest scope of opportunities. The core subjects are History, Geography, Political Science, Economics, Psychology, Fine Arts, Sociology, Physical Education, literature subjects. English is a compulsory language subject of this stream. Students can choose among Hindi, Sanskrit, and French, as an elective subject. The popular course is BA. After class 12th, students can also choose technical courses like BCA/B.Arch. or go for law and management courses as well.

Table 2

Streams	Compulsory Subjects	Optional subjects
Science (Medical)	Physics, Chemistry, Biology	Maths Engineering Drawing, Economics, Computer Science, Informatics Practices, Biotechnology
Science (Non Medical)	Maths, Physics, Chemistry	Biology, Engineering Drawing, Computer Science, Economics, Informatics Practices
Commerce	Business Studies, Accounts, Economics	Maths, Informatics Practices
Arts	History, Geography, Political Science	Economics, Psychology

Tips for choosing the right stream after CBSE Class 10 board exam are define your goals, Talk to practicing professionals and Seek guidance from teachers.

IV. SYLLABUS OF HIGHER SECONDARY EDUCATION

A syllabus is an academic document of secondary education that communicates course information and defines expectations and responsibilities. It may be set out by an exam board or prepared by the subject experts who supervises or controls course quality. Syllabus is set for a particular subject. Syllabus includes the subjects as well as the topics covered in the course of study. General course information, Course objectives, Course policies, Grading and

evaluation, Learning resources, Instructor information and the Course Calendar are an essential components of an academic syllabus. Syllabus contains all the portion of the concepts covered in a subject. A syllabus functions as a contract between you and your students.

Table 3

Basic for Comparison	Syllabus	Curriculum
Meaning	Overall content of a subject	Overall content of a course
Nature	Descriptive	Prescriptive
Scope	Narrow	Wide
Set out by	Exam Board	Government

Schools in India offer both Indian and International syllabi some of which are: CBSE, ICSE, State Board and IB. The course syllabus has multiple functions:

- It is a course-planning tool.
- It helps the instructor to organize and prepare the course.
- It is a prospectus that answers a question on the minds of many students.
- It is a reference guide.
- It is akin to a contract, in that it sets out course requirements.

Why Should We Care About A Syllabus?

- It makes an impression on your students.
- It sets a tone.
- It conveys information about expectations.

Different subjects are studying in the class 11th or 12th. Each subject has syllabus. Syllabus of each subject is divided into units and unit it divided in to chapters. The chapter is a collection of topics. Topic is the smallest part of the syllabus. Course structure is made up of the combination of units, topics and marks.

For example, Course Structure of central board of secondary education:

Table 4

CBSE 11th Class Mathematics Syllabus		
Units	Topics	Marks
I	Sets and Functions	29
II	Algebra	37
III	Co-ordinate Geometry	13
IV	Calculus	6
V	Mathematical Reasoning	3
VI	Statistics and Probability	12
Total		100

Each unit has suitable title and chapter also. Each unit is divided in to chapters. For example, chapters of first unit are: Sets, Relations & Functions and Trigonometric Functions. Each chapter is divided in small topics.

Chapter 1: Sets

- sets and their representations
- empty set
- finite and Infinite sets
- equal sets. Subsets
- subsets of a set of real numbers especially intervals (with notations)
- power set
- universal set
- Venn diagrams
- Union and Intersection of sets
- Difference of sets
- Complement of a set
- Properties of Complement Sets
- Practical Problems based on sets

V. E-BOOKS FOR HIGHER SECONDARY EDUCATION

An electronic book (or e-book) is a book publication made available in digital form on the web. Any person can be used to read e-books, including desktop computers, laptops, tablets and Smartphone's. The main reasons for people buying e-books online are possibly lower prices. eBook can be downloaded in few minutes. An eBook reader can be a software application for use on a computer. Users can purchase an eBook on diskette or CD. My portal www.hseshiksha.in provides facility to access the NCERT books which are available on the web. Both Hindi and English medium books are available here. This portal links www.ncert.nic.in. Student, parent, teacher etc can choose class, subject and text book from this portal. Now book will be opened for the study. Every class has different subjects and every subject has different books. Chapter wise details are displayed. After the selection of any chapter, pdf form of related matters is displayed. Now it is ready for use.

VI. QUESTION PAPERS OF HIGHER SECONDARY EDUCATION

The means of evaluation of students in our country is based on their performances in exams. A question paper is the basic tool used in an examination. The work of question

paper setting and evaluation become more important. Tests are conducted to assess students knowledge in a subject. Previous year papers are very important for the preparation of examination. Both class XI and XII question papers are available in the web. Class and subject wise choosing of question papers links are provided on the web. Generally CBSE question papers are divided into 5 sections. Total number of questions is 26. Time duration is 3 hours. In Section-A, 5 questions are given each one marks. In section-B, 5 questions are given 2 marks each. In section-C, 12 questions are given 3 marks each. In section D, one question of 4 marks is given. In section-E, 3 questions of 5 marks are given. Internal choice is given for each question except the questions of section-A.

- Class: XI or XII
- Streams: Science, Commerce or Arts
- Subjects: Compulsory & optional subjects

Question paper of CGBSE is divided into 5 sections. In Section-A 10 questions of 2 marks (each) are given. In Section-B, 8 questions of 3 marks (each) are given. In Section-C, 6 questions of 4 marks (each) are given. In Section-D, 4 questions of 5 marks (each) are given. In Section-E, 02 questions of 6 marks (each) are given. Time limit is 3 hours.

VII. RESULT OF THE DEVELOPED PORTAL

After the starting the Google search engine, open new tab and type the URL (<http://www.hseshiksha.in>) of developed portal.

A. Login

In this portal, three types of login facilities are given. Admin login is given for administration purpose. Staff login is given for teacher only. Student login is open of both student as well as parents.

B. Scholar and Guide

The portal is designed so that scholar is admin of the portal. The research guide gives guidelines for its development. Admin user and password is available for the security purpose.



Figure 1. Home page of the portal

C. Teachers, Students and parents

Admin can watch all activities of the other users of this portal. Admin provides accessing area of these types of users. More rights to the teacher are given by the administrator. Teaching tips are provided to the staffs member of the school.

D. Syllabus, E-Books and Question papers

These facilities are available of this portal. Syllabus of each subject can be seen by the user. All user of the portal can visit link books menu for the reading of e-Books of specific subject. The question paper menu holds sample and old year papers.

E. Searching and Suggestions

Any type of searching inside the portal is available. Suggestions facilities of the users about the portal are given. User can write the message in the box and send them to the administrator of the portal. Learner can search video lectures of any topic.

F. Security and Services

Data or information of the users are more secure. It is secure when user can't disclose it. The point is notable that user should not be share the user name as well password. Lecture security of the teacher can be provided.

G. Video Lectures

Today video lectures are more popular. Without teacher or tutor, student can learn any topic of the subject. They can learn more than one time. It help the student to remove the weakness. Teacher can increase their teaching quality as well as explanation power. Different video lectures of the same topic helps to the learner for develop the strong knowledge. We can upload our own video & audio lectures.

VIII. CONCLUSION

Advantages of this web Portals are easy for users to customize personal places, supports users in multiple tasks, easy to use design interface, help to connect community, powerful back end, Flexible content and layout.

Disadvantages of Web Portals are high complexity and additional testing efforts, somewhere complex to setup, Re-

authentication when using multiple systems, customizing portals and integrating applications, developers need additional skills besides using a web framework. and additional costs.

Portal development is costly than website development. In this portal, I have trying to collect higher secondary educational document one place which are available of the different places of the World Wide Web. I hope that this portal will help students, parents as well as teachers.

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