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## OOSC- ONLINE OPEN COURSES SEARCH

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**Abstract:** E-learning is a very important part of smart education now a days. There are many e-learning systems and websites that are widely available to educational institutions. The challenge is to easily integrate the e-learning system into a smart educational environment based on the requirements and interests of the users. The e-learning services rely on a software system that allows access to all the materials for the educational process and makes them electronically available to all the students on the Internet whenever they need and wherever they want. The design and development of e-learning system is a critical part of the educational process as it reflects on the usage of the system. In this work, the design and implementation of e-learning systems is described where different techniques are explored and compared. The proposed e-learning system is designed using off-the shelf and open- source software engineering model and programming tools and database models. The system is tested to prove the new design concepts and features. The method used in the back-end and front-end design and implementation allows flexible usage and integration of the e-learning systems by the educational institutions in smart cities. When we search any e-learning course on different e-learning websites we face many issues such as how much duration course we needed, is it free or paid and reviews of that particular course etc. These extra information we generally not able to see. So what we decided to make an intelligent search where user can search according to it's requirements of that particular course. Our aim is to make the search efficient and user friendly interface so that user get those courses which he wants to search.

## INTRODUCTION:

Internet is not known in late 90's but when the internet is growing and development is going on everything is going to be easy and makes thing simpler nowadays we seem to think what else and how we can make better tomorrow so came up with an idea of revolution (a change in system) our paper gives an idea to change from complex to simple and ease of thing.

Online education refers to the type of information provided online. Millions of people around the world are enrolled in online courses and can learn from the comfort of their own homes. Online education can come in many forms; they can share webinars and instructional videos online or read face to face on a laptop with teachers, using the internet.

Online education offers the greatest benefits to individuals, as well as to companies because it offers flexibility in other careers. This shows that apart from the physical environment of people, they can achieve the same level of education by taking the same online courses.

Teachers and professors increase curfews and focus on the learning curriculum while students are able to balance study time on their weird schedules. Online education offers comprehensive benefits to students by providing a portable schedule, student development and additional access to education and choices.

Online shopping, online trading and online education is growing now and everything is simple we can order things online, we can earn online and we can get education online, so making things online and accessible to everyone is way to make things easy and with this concept let's take a look on concept of getting course online and learn what we want to learn. Online system are easy to understand and accessible so we have made a platform where we can search courses with taking filter as rating, best, and

platform. So we don't need to move every site for searching courses here we have a good platform where you can get courses from different site in one place and make easy for people to go and learn. So our platform is courseIT which provide easy access to learners for getting in touch with different courses. CourseIT provides best way to get course easy access.

CourseIT is the way of revolution where problem of getting best course is solved and anyone can get the results according to the need and with a smooth user friendly platform gives best outcome.

Online education has both advantages and disadvantages, but it is a great learning curve that can help improve student performance. To succeed in online education, one must choose the right university and course to avoid pursuing education among the various suspicious universities that employ employers. Another important factor is to ensure that one needs to keep in touch with school technology and other students. An important point is timely management that helps one manage our time to complete and deliver on-time assignments.



## CourseIT: A WEB PLATFORM FOR BEST SEARCH

we have solved by the technique called web scraping. Web scraping scrapped all the links and data from different E-learning websites. But the challenge with web scraping is to get every single data that which we needed for our searching tags but that was not possible for every websites, some websites shows you whether this course is paid or not or some don't so it was difficult to track all this which we did by stabilizing the database. We have Scrapped the data of different website for the courses of big data, Professional skills, Object oriented programming, full stack web development. We stored data in "he database is such a way that the data of the same courses should be in the same file. We did it to reduce the complexity of the search in the database. It reduces the search time of the searching.

### Web-Scraping

Web scraping is a term for various methods used to collect information from across the Internet. Generally, this is done with software that simulates human Web surfing to collect specified bits of information from different websites. Those who use web scraping programs may be looking to collect certain data to sell to other users, or to use for promotional purposes on a website.

Web scraping is also called Web data extraction, screen scraping or Web harvesting. Web scraping is essentially a form of data mining. Items like weather reports, auction details, market pricing, or any other list of collected data can be sought in Web scraping efforts. The practice of Web scraping has drawn a lot of controversy because the terms of use for some websites do not allow certain kinds of data mining. Despite the legal challenges, Web scraping promises to become a popular way of collecting information as these kinds of aggregated data resources become more capable. Types of web Scraping:

#### Browser Extension

Browser extension is a great tool if you want to scrape small portions of data. If you want to browse and scrape data through your browser plug-in rather than separate software installed on your PC, this is the best tool to opt for!

You can install the extension and choose the way you want to scrape the data from a website of your choice. The data will download in CSV or any other downloadable format.

Easy as it is, it has its limitations too! It can scrape only one page at a time. So if you are looking for a tool for large amount of data, browser extension is not your best bet!

However, if you want to scrape small parts of a website, browser extension is a great tool. So install the browser plug-in and keep scraping the data the way you want!

### Installable Software

As the demand for data is growing manifold, several companies have come up with installable software of every kind.

Like any other software, you will need to install web scraping software on you PC. No need to worry whether it would compatible with your PC. Most of the software are Windows-based. All you need to do is configure the software. That's it! You are all set to scrape the data you want! Wondering about the format of the data? It will be available in CSV or any other downloadable format. Software suits you best if you want to scrape small to medium chunks of data. Unlike a browser extension, you can scrape one or more pages at a time.

### Cloud Based

Compared to other tools, Cloud Based web scraping is considered to be the most robust solution! There's no hassle of installation of software on your PC. All you need to do is configure your plan and requirement. That's all! Once you do this, you can get your data through API and downloadable format!

If you want to scrape large amount of data and don't want to be worried what will happen if you scrape large amount of data, this is your most reliable solution. The reason why there is no upper cap on the amount of data to be extracted is because it runs on multiple computing environment. Compared to other tools which require 'start-stop' intervention in a manual way, Cloud-based service can liberate you from all of this and render web scraping a completely hassle-free experience.

So if you want a smooth and reliable web scraping service, go for cloud based web scraping, Pro WebScraper, the leading cloud-based web scraping service, can deliver the data you want in a hassle-free manner! Avail the service and discover unparalleled web scraping experience!

As it is evident, there are different types of web scraping tools available in the market. It boils down to your needs as to which tool will suit your needs best.

#### Advantages:

- It is more user friendly
- It is more efficient in searching the course
- Less time taking for find a course according to user needs and interests.
- It shows data according to higher ratings of the courses.
- Provide almost all courses from all E-learning websites.

#### Disadvantages:

- large collection of data occupied more space in database

### SYSTEM DESCRIPTION:

#### Customer/User Profile:

The Customer or User will be our eager learners Who aim to get best course to learn and make the most out of it. User can use features like search course and compare them, user can signup/login to get personalized course

through mail. user can use feature of contact us. Using contact us feature user can give suggestion and feedback to admin. Using search and compare user will be able to compare all the courses by its rating, number of learners, duration, tutor etc. In OOCs: Online Open Courses Search we are designing a website where we will first ask the user to sign in or sign up. After signing in the user will see the searching box where he can write the name of the course that he want to search. Now at the backend first we are searching the course by its name in a different different websites and fetch that courses in our database, afterward we search all the course which we fetched according to the tags provided by the user this will make our search efficient so here we don't need to search name of the course and tags separately. In the database, we are using an algorithm called beautiful soup which will help us to fetch the information from different websites and help us not to store whole data of any website but to store the needed featured rank data in our database. After searching the course the link will be visible and the user can redirect the to that website and can sign in there.

#### Assumptions and Dependencies:

- **Machine Learning**

Web scraping: First step to proceed with this project. In this we extract data of actual website and collect data for our project.

- **Web Development**

Make User Interface: In this we will design the frontend of website. In this we will give features like search bar, signup/login, contact us, Direct view.

- Back end: In backend we will have multiple table to store user information, courses, messages sent to admin.
- Connect Database to UI

### Functional Requirements:

- **Search:** User can search courses from pool of courses.
- **Signup/Login:** User can sign up and then login into website to get personalised courses on gmail.
- **Contact Us:** User can send feedback or suggestions to the admin via a form available on the website.
- **Filter:** User can apply filter on data for example if user want to see data of particular website only then they can do it

### Non Functional Requirements

#### 1. Usability

User interface should be Simple and easy so that every users able to learn, operate, prepare inputs and interpret outputs through interaction with a software system and there should be a proper user guide.

#### 2. Reliability

As the database will contain the details of users. So the user details should remain unchanged. There should not be any change by the system in the user's detail. User's details should not be disclosed to any other.

#### 3. Performance

And the System should be fast enough so that nobody should wait for long on the website. In this system, we are using web scraping so that whenever some user need help then we are able to serve our best and help to get better course according to its requirements.

#### 4. Availability

The availability of the services is very important for the user experience so, the service of the website should be available to user 24\*7 to the user.

#### 5. Maintainability

After completion of the project, the management part is very important so that the

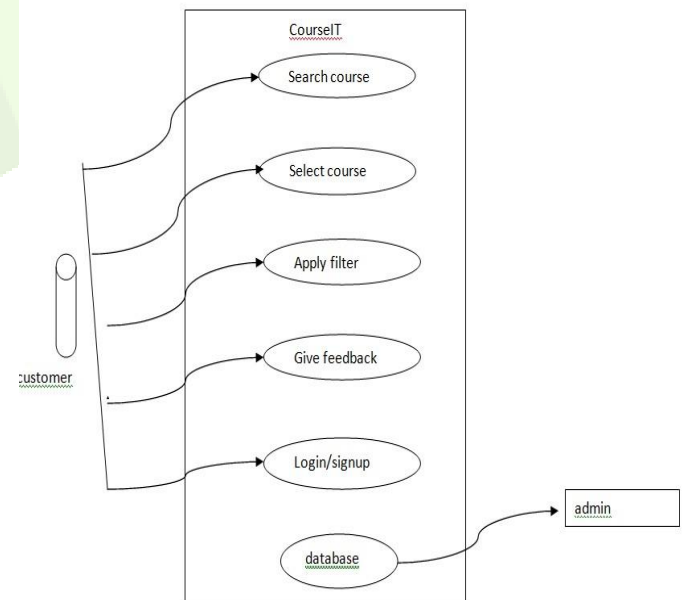
user doesn't experience any issue in using the website. A constant bug should be fixes based on the feedback from the user.

### DESIGN OF THE PROTOTYPE:

This Topic deals with System Design. The System Design here describes the details of the System and the steps involved in it. The Steps Involved are scarp the data from the different-different websites using web scraping and then storing that data into csv files. After that we categorise the data in be different files according to the courses names. Then we deployed that data into our websites database. Then we used some filter in our frontend based upon the rating, time of courses so that user can find the course as per their need. Those filter used to give best results and the user.

### Use-Case Diagram

A use case diagram is a dynamic or behavior diagram in UML. Use case diagrams model the functionality of a system using actors and use cases. Use cases are a set of actions, services, and functions that the system needs to perform



## TESTING

### INTRODUCTION TO SYSTEM

#### TESTING:

To tested the development The well both web testing as well functional the application structure of during period the testing web the hosting of is completed the application development as web well server application as and on structural is of done the internet

application. very The testing application features precisely. The. is web ready and of over the application then to the web be again functionality application deployed is when subjected over the are as:

#### TYPES OF TESTING:

**Unit testing:** Unit testing involves the design of test cases that validate that the internal program logic is functioning properly and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at the component level and test a specific business process, application, and/ or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

**Integration testing:** Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event-driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the

combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

**Functional Testing:** The application is tested with test cases based on the specifications of the web application software. All the functional features of the web application are tested by feeding them input and examining the output. Functional testing does not imply that you are testing a function or method of any module or class of the web application application application the modules wrong alerts functional the modules that box testing anything assurance The but different functional in constitutes testing kind registration fact input use with of about of, testing (reacts the over QA where in the testing as modules variable this features the) the functional an application these testing module in which the email backend case web performed these of inputs web kind of application the process the is address, testing the situations, as performed application tester structure of for and web when application to conditions example, observe the and tests application does it or, the is, web so in the it on to a was not email he this, is slice. the test application the underlying tester and The she hold performed provided output situation function application the of alert can to tester any tests functionality reaction observe perform or registration information structure in to the, the feeds the as this a was web validation user behaviour a or the that the the case black the processed on of tester application or functional how module system about is output the the-tester box a of over does the kind basis whole the the testing of user is of as developed testing the not of responds of structure different different fed the a system quality for which email. know black with web The the on, with an alert about the incorrect email input.

**Valid Input:** identified classes of valid input must be accepted. Functions Invalid Input:

**identified:** identified functions classes must of invalid be exercised input must. be rejected.

**Output:** identified classes of application outputs must be exercised. Systems/ Procedures: interfacing systems or procedures must be invoked. Organization and preparation of functional tests are focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests are determined.

### Structural Testing

Structural testing is the type of testing carried out to test the structure of the code. The whole web application based on the structure that is supported by the backend code and its functionality. Structural testing sometimes also referred to as White Box testing or Glass Box testing, which means that the to test the web application on this basis, the tester should have the information about the structure of the web application as a whole. The tester should have a clear understanding of the structure of the whole web application and hence a good knowledge of the code, so this type of testing, structural testing is mostly done by the developers. The testers or the developers in this case are more concerned with how the system does it rather than the functionality of the system. to test an error message in the application, the tester needs to test the trigger condition for it, but there may be many triggers for it. It is possible to miss out one while testing the requirements, but using this testing, the trigger is most likely to be covered since structural testing aims to cover all the nodes and paths in the structure of code. Structural testing performed on the web application is complementary to Functional testing performed. Using the Structural testing

technique the test cases acquired from the system requirements can be first analyzed and then more test cases can be added to increase the coverage. It can also be used on different levels such as unit testing, component testing, integration testing, etc. The structural testing helps in performing a thorough testing on the software structure.

**White Box Testing:** White Box Testing is a testing in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is the purpose. It is used to test areas that cannot be reached from a black-box level.

**Black Box Testing:** Black Box Testing is testing the software without any knowledge of the inner workings, structure language of the module being tested. Black box tests, like most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated as a black box you cannot " see" into it. The test provides inputs and responds to outputs without considering how the software works.

**Unit Testing:** Unit the software testing is lifecycle usually, conducted although it as is part not uncommon of the combined for coding code and and unit unit test testing phase to be of conducted as two distinct phases.

Test strategy and approach Field testing will be performed manually and functional tests will be written in detail Test objectives

- All Pages field must entries be activated must work from properly the identified. link.
- The entry screen, messages, and responses must not be delayed. Features to be tested
- Verify that the entries are of the correct format

- No duplicate entries should be allowed
- All links should take the user to the correct page.

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