PROJECT SYNOPSIS

“Nalanda Open University

E – Gyan Portal”

REPORT SUBMITTED FOR THE PARTIAL FULFILMENT OF THE

REQUIREMENT FOR THE B.TECH. IN

“Computer Science/Information Technology”

SUBMITTED TO

“COLLEGE NAME”

CITY

SUBMITTED BY:

STUDENT NAME

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Under the Guidance of

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SOFTPRO INDIA COMPUTER TECHNOLOGIES (P) LTD

ABOUT THE ORGANISATION

Softpro India Computer Technologies (P) Ltd. is a leading IT firm and the software development division of Softpro Group of Companies with its headquarter located in the capital city of Uttar Pradesh, Lucknow. Softpro India was established in 2004 by technocrats from IIT-Kanpur and IET Lucknow. Softpro Group of Companies is a cluster of companies working in multiple domains like Software Development, IT Trainings, Research and Designing. The Founder and Managing Director of Softpro Group of Companies is Er. Ajay Chaudhary with over 25 years of experience. Softpro India is the fastest growing IT company with the largest learning center of the region having experienced consultants of 15+ years and industry experts.

Softpro Group of Companies compromises of Softpro Learning Center (Training & Internship division – 2008), Softpro Innovations (R&D division – 2014) and Softpro Foods (Agro Production division – 2018). Softpro India has global presence with its Head Office and Training Center located in Lucknow, International Unit Office located in Malawi, Africa and Virtual Office located in Kuala Lumpur, Malaysia. Softpro India has successfully delivered Government Projects like the visionary project of Government of Uttar Pradesh – *URISE*. Softpro India also has signed MoU with Department of Technical Education, Government of Uttar Pradesh making it the authorised Training & Development partners to impart and technically upskill all the engineering students of polytechnics (government, private & aided) across Uttar Pradesh.

Softpro India's recent achievements include the MoU signing with Dr. A. P. J. Abdul Kalam Technical University, Uttar Pradesh. Technologies are transcending boundaries and their volatility is putting stringent demands on the time and mind-space of techno-professionals. At SPG, we update ourselves with technologies even before they become norms and master them long before they become redundant. That's why we are on the roster of clients from across the continents.

Softpro India offers training for all the ranches of engineering (Computer Science, Information Technology, Electronics, Electrical, Civil, Mechanical) for updated and trending technologies. Softpro India also has several online and offline trainings like Summer Training, Industrial Training, Vocational Training, Apprenticeship Program, Employment Training Program and Online Courses. The learning material and other resources are available on Softpro India's Learning Management System (LMS) – "Polyprep – Knowledge @ Your Doorstep" and mobile application – "e-Study Zone".

Come to think of it, we have engineered ourselves to be at the very forefront in Web based technology. Our core competencies span a spectrum of web-intensive services that range from website designing to robust backend management.

TECHNOLOGIES TRAINED ON DURING SUMMER TRAINING

1. **HTML: -** HTML is stand for hypertext markup language, this markup language is used to design static web pages. HTML contain pre-defined tags, which are useful to design web pages. HTML describes the structure of a Web page. HTML consists of a series of elements. HTML elements tell the browser how to display the content. HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.
2. **CSS: -** CSS stands for Cascading Style Sheets. CSS describes how HTML elements are to be displayed on screen, paper, or in other media.CSS is the language we use to style an HTML document. CSS describes how HTML elements should be displayed. CSS saves a lot of work. It can control the layout of multiple web pages all at once. External stylesheets are stored in CSS files.
3. **Javascript: -** JavaScript is a scripting or programming language that allows you to implement complex features on web pages — every time a web page does more than just sit there and display static information for you to look at — displaying timely content updates, interactive maps, animated 2D/3D graphics, scrolling video jukeboxes, etc. — you can bet that JavaScript is probably involved. It is the third layer of the layer cake of standard web technologies, two of which (HTML and CSS).
4. **Bootstrap: -** Bootstrap is the most popular HTML, CSS and JavaScript framework for developing a responsive and mobile friendly website. It is absolutely free to download and use.It is a front-end framework used for easier and faster web development. It includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many others.It can also use JavaScript plug-ins. It facilitates you to create responsive designs.
5. **Database: -** A database is an organized collection of data, so that it can be easily accessed and managed. You can organize data into tables, rows, columns, and index it to make it easier to find relevant information. Database handlers create a database in such a way that only one set of software program provides access of data to all the users. The main purpose of the database is to operate a large amount of information by storing, retrieving, and managing data.There are many dynamic websites on the World Wide Web nowadays which are handled

through databases. For example, a model that checks the availability of rooms in a hotel. It is an example of a dynamic website that uses a database. There are many databases available like MySQL, Sybase, Oracle, MongoDB, Informix, PostgreSQL, SQL Server, etc.

6. **Java: -** Java is an open source, object oriented, high level programming language. Java is a general-purpose programming language. By using java language, you can develop different kinds of applications like desktop applications, web applications, mobile applications, ERP, etc. In project development we use java as main programming language. In this internship program we develop a web-based application named "**Nalanda Open University E-Gyan Portal**", In this web application we used Java with spring boot framework.
7. **Spring Boot Framework: -** Spring is widely used for creating scalable applications. For web applications Spring provides Spring MVC which is a widely used module of spring which is used to create scalable web applications. But main disadvantage of spring projects is that configuration is really time-consuming and can be a bit overwhelming for the new developers. Making the application production-ready takes some time if you are new to the spring. Solution to this is Spring Boot. Spring Boot is built on the top of the spring and contains all the features of spring. And is becoming favourite of developer's these days because of it's a rapid production-ready environment which enables the developers to directly focus on the logic instead of struggling with the configuration and set up. Spring Boot is a microservice-based framework and making a production-ready application in it takes very less time.

About Nalanda Open University (NOU)

Named after the famous Nalanda University of Magadh, Ancient India, the Nalanda Open University (NOU) is the only University in the State of Bihar meant for imparting learning exclusively through the system of Distance Education. The University was established in March, 1987 by the Government of Bihar. Apart from Degree and Diploma courses at undergraduate as well as at post graduate level, the university offers certificate courses for six and nine months. Nalanda Open University is the only university offering courses on Bihari languages like Magadhi, Bhojpuri, Maithili. The University is recognised by the Distance Education Council (DEC), University Grants Commission, and Ministry of HRD, Government of India for imparting education through distance mode. The University's camp office is located in Biscomaun Bhawan, Patna. The camp office houses an examination centre for about 1000 students, a state-of-the-art Library with about 50,000 titles and a computer laboratory of about 300 IBM Pentium-4 computers. Almost 260 study Centres are associated with NOU offering all the courses of the university and these Centres are only increasing. As per the UGC mandate, Nalanda Open University is opening up its own campus being constructed at Rajgir, Nalanda, adjacent to the

ancient ruins of Nalanda. NOU is the second largest open university in India after Indira Gandhi National Open University (IGNOU). In 2020, it became the first university in the state of Bihar to adopt the University Management Information System (UMIS), digitalizing all processes related to admissions, examinations and publication of results.

Conventional Methods of Distance Education

Distance education is the method of education where students and teaching faculties are not physically present in the educational setting. Traditionally, this method of education focused on students that are not available for a full-time course duration. The process involves students filling up and submitting the admission forms and receiving the learning materials like notes and books at their doorstep. This conventional method of distance education involved long waiting days for their study material or other hindrances such as lack of instant communication with the institute resulting in less to no feedback regarding learning performances. There is an abiding need for a platform to bring about a revolutionary change in this conventional method of distance education. An advanced method to enable effective teaching-learning and evaluation that standardizes and improvises distance education.

About NOU E – Gyan Portal

To overcome the difficulties in the exiting conventional methods of distance education as mentioned in the paragraph above, Nalanda Open University has pioneered NOU e-Gyan Portal. The NOU e-Gyan Portal will not only digitalise every process of learning but focuses on easy access to the self-learning materials and self-assessment tools. The students of the university will experience instant communication and feedback with the concerned faculties or staff eliminating any barriers to an effective flow of information. The portal will also enable the university for a better digital experience in providing the students with their selflearning material and self-assessment tools and study centre associations. All the study centres associated with the university offers all the courses available in the university. This means that the self-learning material of all the 113+ courses will be available to all the students associated to any of the 250+ study centres of the university. This portal will advance and transform the course of education of the university.

Objective

The NOU e-Gyan Portal is a Learning Management System (LMS) with the objective to facilitate “E-Learning System to the students for the learning purpose from a remote location". The System is Secure, Robust Web Application for E-Learning. It has been designed to provide online study material to the students of Nalanda Open University (NOU). The portal is user friendly & easy to access. The whole LMS deployment is on cloud-based architecture so that its resources can be elastic as and when required. The NOU e-Gyan Portal will be accessible from any hook and corner of the world if the system allowed the permission to its users. We can say that it is fully secure and accessible 24x7 to its authorized users. It will resolve the academic issues such as Self-Learning Material distribution, delivery, tracking, assessment, progress monitoring & controlling of all stakeholders of the system i.e., students, teachers, study Centre administrators as well as university administrators when they are at distant.

ABOUT THE PROJECT

This Project is a learning management system. The analysis steps of project are given below:-

Feasibility Study

Feasibility study is the measure of how beneficial or practical the development of an information system will be to an organization. The Feasibility analysis is a cross life cycle activity and should be continuously performed throughout the system life cycle.

Operational Feasibility:-

By providing the web based application, all the users will get a very good facility of accessing the service to fulfil their requirements. All the user information, information sharing and selection process is done properly.

Users will feel comfortable by reduction of their work. The system will make handling of large databases easy. Losing of records will be avoided. Considering all these factors, we can conclude that all the users and end users will be satisfied by the system.

Technical Feasibility:-

For the design and development of the system, several software products have been accommodated.

- Database design – MySql
- Interface design – HTML, CSS, Java Script and Bootstrap, Thymeleaf
- Coding – Java with Spring Boot framework

The technology (Java with Spring Boot framework) has enough efficiency for the development of the system. Therefore the project is technically feasible.

Schedule Feasibility:-

The duration of time required for the project has been planned appropriately and it is the same as the duration of time expected by the client. Therefore the application can be delivered to the client within the expected time duration, satisfying the client. Hence the project is feasible in scheduling.

Economical Feasibility:-

According to the resources available and the project scheduling process it is estimated that the expenses allocated for the web application to be developed, by the client is sufficient enough. Hence the economical factor has been considered feasible.

Project Planning & Scheduling:-

Planning is very important part of any software development. In the planning phase we decide which features are to be included in the system to make a good system, how much time do we need to complete the project, what will the cost of the system etc…

A Software Life Cycle or software process is a series of identifiable stages that a software product undergoes during its development. A software product development effort usually starts with a project identification and selection stage and then requirements analysis; design, coding, testing, implementation and maintenance are undertaken.

A life cycle model identifies all the activities required to develop and maintain a software product and establishes a precedence ordering among the different activities.

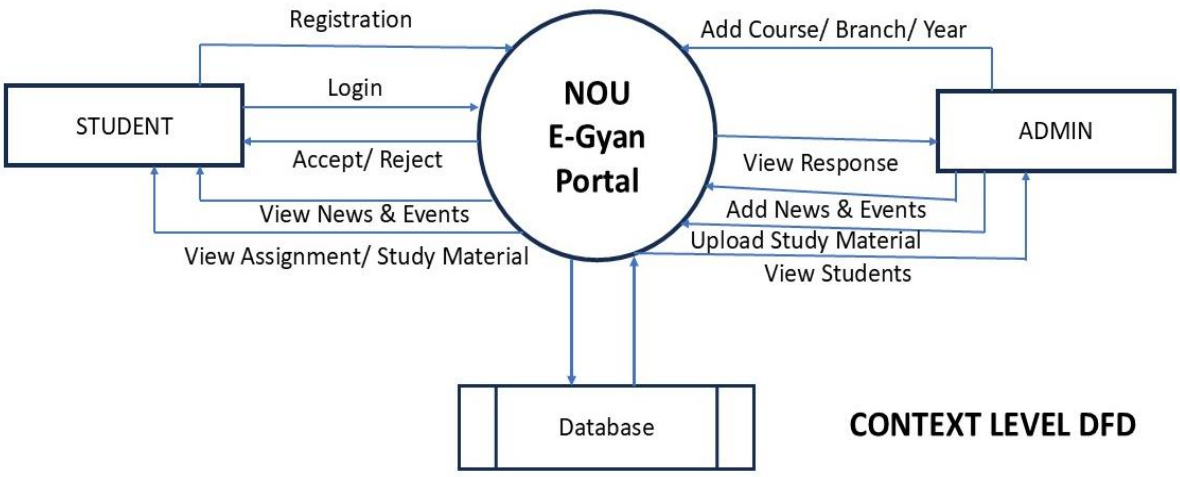
The various phases of Software Development Life Cycle-

- Requirement Analysis
- System Design
- Coding
- Testing
- Implementation

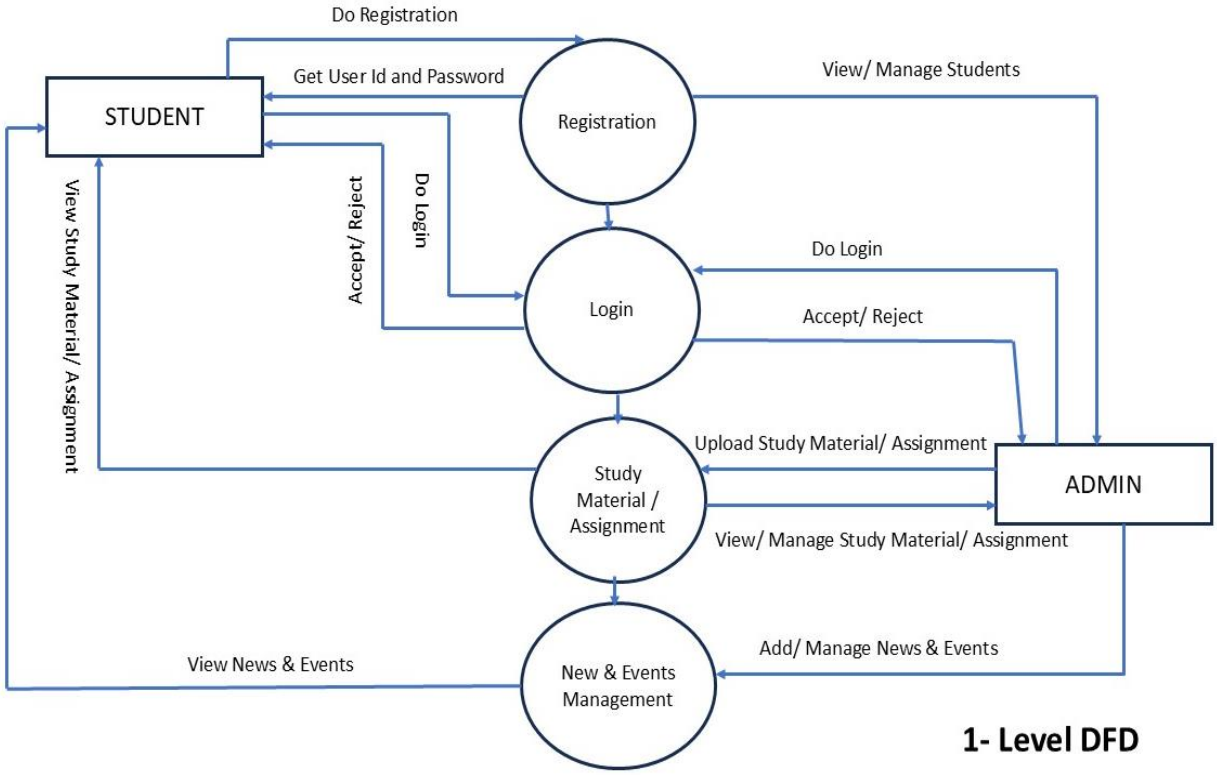
SOFTWARE REQUIREMENTS FOR DEVELOPMENT

User Interface Designing	HTML5, CSS3, Java Script, Bootstrap, Thymeleaf
Programming Language	Java with Spring Boot Framework
Database	MySql
IDE	STS (Spring Tool Suit)

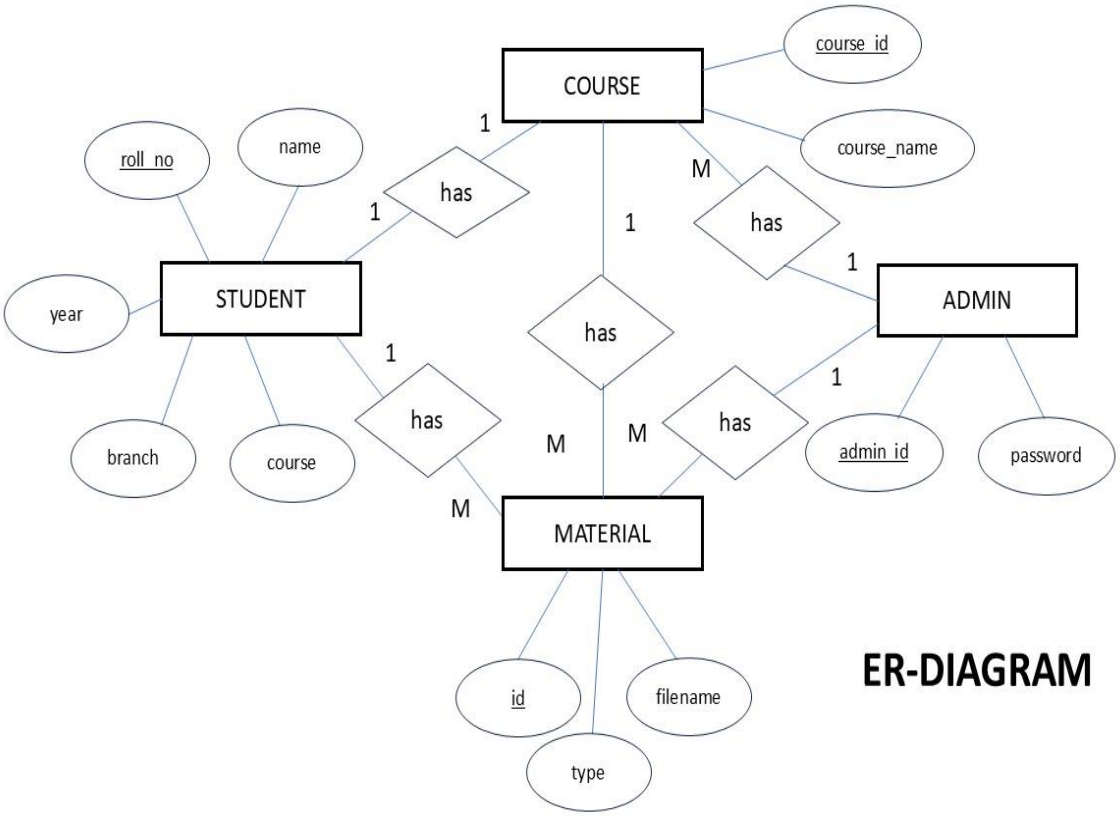
High Level Designing



CONTEXT LEVEL DFD



1- Level DFD



ER-DIAGRAM

Low Level Designing

Database Designing

Table Name : student

Column Name	Data Type
Rollno	int primary key
Name	varchar(50)
Fname	varchar(50)
Mname	varchar(50)
Gender	varchar(6)
Address	varchar(255)
Program	varchar(50)
Branch	varchar(50)
Year	varchar(50)
Contactno	varchar(10)
Emailaddress	varchar(50)
Regdate	varchar(30)

Table Name : login

Column Name	Data Type
Userid	varchar(50) primary key
Password	varchar(30)
Usertype	varchar(50)
Status	Varchar(10)

Table Name : enquiry

Column Name	Data Type
Id	int primary key auto_increment
Name	varchar(50)
Gender	varchar(20)
Address	varchar(255)
Contactno	varchar(10)
Emailaddress	varchar(50)
Enquirytext	Varchar(255)
Enquirydate	Varchar(30)

Table Name : response

Column Name	Data Type
id	int primary key auto_increment
Rollno	Int
name	varchar(50)
Program	varchar(50)
Branch	varchar(50)
Year	varchar(50)
Contactno	varchar(10)
Emailaddress	varchar(50)
Responsetype	varchar(50)
subject	varchar(500)
Responsetext	Varchar(1000)
responsedate	varchar(30)

Table Name : news

Column Name	Data Type
nid	int primary key auto_increment
Newstext	varchar(255)
newsdate	varchar(30)

Table Name : program

Column Name	Data Type
Id	int primary key auto_increment
program	varchar(50)

Table Name : branch

Column Name	Data Type
Id	int primary key, auto_increment
branch	varchar(50)

Table Name : year

Column Name	Data Type
Id	int primary key, auto_increment
Year	varchar(50)

Table Name : material

Column Name	Data Type
Ids	int primary key, auto_increment
Program	varchar(50)
branch	Varchar(50)
Year	Varchar(50)
Subject	Varchar(100)
File_name	Varchar(255)
My_file	Varchar(255)

Modules in Project

There are following modules in this project:-

- Student Information System
- Login Management System
- Complain Management System
- Feedback Management System
- News Management
- Enquiry Management
- Study Material Management
- Email Integration
- SMS API Integration

Modules Description

Student Information System:- This module contains information of students with given fields like rollno, name, program, branch, year etc.

Login Management System:- This module validates user login. It also tracks user after identification of user whether he/she is admin or student.

Complain Management System:- Through this module student can raise complain and student's complain will show on admin panel, admin will resolve complain.

Feedback Management System:- Through this module, students can send feedback and student feedback will be shown on admin panel.

News Management:- Through this module, admin can post important news, which are displayed on notice board.

Enquiry Management:- In this module, any end user can raise enquiry, which display on admin zone.

Study Material Management:- Through this module admin can upload study material for students according to their course and subject. The study material is displayed on student panel.

Email Integration:- Through this module when student do registration a system generated email is send to student email id.

SMS API Integration:- Through this module when end user do enquiry a system generated SMS is send to end user registered mobile no.

Future Scope Of Project

The system is flexible enough to ensure well coordinated efforts to face the strategic challenges emerging from rapidly changing economic environment and global trends. Facilities have been incorporated in the software so that online processing can be done easily and thus the effort and time can be saved.

- In future it is planned to develop our own web server to host the web application.
- Building Android Application for the system is also one of the future scope's of this project.