

Mini Project Topics for BTech(CE with Specialization in Software Engineering) – 3rd Sem Students

Note1: Choose any one topic

Note2: Contact the Resource Person only if you need advice on things like dataset, suitable tools etc.

Resource persons will NOT advice you in any way in the coding/implementation part. Mini Project is purely a self-study and self-implementation topic.

Sl No 1-4, Resource Person: Neha Garg Tripathi

1. Student Information System

An information system has to be created which stores the detail information about various students in different semesters of the B.Tech course.

The system stores information like:

- Which student is in which semester
- The result of each student for each semester
- Fee details of the course
- Attendance of each student in each semester.

i) Write down the problem statement for a suggested system

ii) Develop Software Requirements Specification(SRS) for a given problem (The requirements specification should include both functional and non-functional requirements).

iii) Develop the function oriented diagram: Data Flow Diagram (DFD) (in levels) using a design tool.

iv) Develop the Use case diagram using a design tool.

v) Develop the Sequence Diagram using a design tool.

vi) Develop the Class Diagram using a design tool.

vii) Develop code for the given system using any programming language (front end and back end).

viii) Test the developed code (manual and automation

2. School Bus Operation

A New Branch School District operates a fleet of 40 buses that serve approximately 1,000 students in grades 1 to 12. The bus operation involves 30 regular routes, plus special routes for activities, athletic events, and summer sessions. The district employs 12 full time drivers and 25 to 30 part-time drivers. A dispatcher coordinates the staffing and routes and relays messages to drivers regarding students and parents who call about pickup and drop-off arrangements.

The System stores information like:

- Personal info of each student using the facility
- Information regarding each bus run by the school
- Personal info of Bus Employees
- Information like which bus is running on which route, which students are using the services of which bus. etc.

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3. Clinic Management System

There is a Clinic Management system. An assistant of the doctor and the doctor himself uses the system. The system keeps information about all the patients visiting the clinic. Each patient is charged a fee of Rs 100 on his visit to the clinic. If the patient revisits the clinic within 5 days he is not charged any fees but after that he is charged again. The clinic also provides the facility of medicines which is optional for the patients to take. Each patient is provided with a prescription and receipt on his each visit.

The system stores the following info:

- Personal data about each patient visiting the clinic.
- The different medicines available in the store with their manufacturing date and expiry date.
- Also information like the company which is manufacturing that medicine, etc.,
- Information like who are all the patients who have got treatment from that clinic and against what disease.

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4. Movie Ticket Machine

Implement a simple movie ticket vending machine. The movie theater that will use the machine has only one movie and one show time each day. Every morning, the theater manager will turn on the ticket machine, and it will ask him for the name of the movie and the ticket price that day. It will also ask how many seats are in the theater (so it won't sell too many tickets). When a customer walks up to the ticket machine, he will see the name of the movie, the time, and the ticket price displayed. There is a slot to insert money, a keypad of buttons to enter a number into the "Number of Tickets" field, and a "Buy" button. Printed tickets come out of a slot at the bottom of the machine. Above the ticket slot is a message display (for error messages like "Please enter more money or request fewer tickets" or "SOLD OUT!"). An additional display shows the customer's balance inside the machine. Finally, there is a "Return Change" button so the customer can get his unspent money back.

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Sl No 5-8, Resource Person: Akansha Gupta

5. Patient Monitoring System

The patient monitoring system can be defined as the system used for monitoring physiological signals that include parameters like the electro-cardio graph (ECG), respiratory signals, invasive and noninvasive blood pressure, body temperature, gases related parameters, etc. The main aim of this project is to monitor the body temperature, ECG, heart beat & pulse rate of the patient and display the same to the doctor. A record should be maintained relative to individual patient .Data of patient's record is a private information which should have good authentication security. So it should only be accessible to the authorized person.

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6. Blood Bank Management System

Talking about the features of the Simple Blood Bank Management System, a user can easily add donors information. In order to add donors information the user has to provide donors name, roll id, department, blood group, donated blood, last date of donation, phone number and email id. After adding donors information, the user can view all the donor's list which displays all the provided details. A search function is also available in this system in order to search data quickly. Searching is done either by name or blood group or the department. Just by entering any one of these options, the system displays the donor's record. The proposed project is an ultimate solution of the problem regarding collection, storage and usage of blood in a blood bank. It makes the blood donation and withdrawing system go through a scientific and systematic way. Using this system, one can inquire the availability of blood type and amount in a blood bank easily.

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7. Tourism Management system

Tourism Management System is based on a concept of maintaining tour packages for the tourists. Before stepping into the main system a user has to pass through login system to get access, then only he/she can use the features of the system which includes booking package, previewing ticket, canceling a ticket, viewing tourism brochure. It also contains a sign-up feature.

Talking about the features of Tourism management system, a user needs a certain id to get access. For this, the user can simply sign up by providing username and password. After logging in as a user, there are several options to perform. The user can check for holiday packages and book. In order to book a package, the user has to select within given package details and enter the number of people. After the booking is done, he/she can check for the ticket details which displays the total price and ticket of the package. In total there are 10- holiday packages. Whenever the user wants to cancel the tickets, he/she can easily cancel it and get the refund.

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8. Restaurant billing system

This system is named as Restaurant billing. This is designed especially for a restaurant which wants to attend their customers in a very well manner. This system has the capability to take the orders from the customers. It generates unique transaction id for that according to the selection of the mode of payment.

The icing on the cake is that it will be simply utilized by the staffs of various edifice departments and is hopped-up with extremely customizable strong options to fulfill each demand of your edifice, be it managing the stocks/inventory, increasing business potency, increasing table turnaround, managing totally different branches, aggregation client feedback, or managing any knowledge that's necessary for your edifice, no matter the placement and time, we have got it all coated.

Thereby, raising employees potency and reducing client complaints. It depends upon the customer that what he exactly want to purchase and what he needs at the time.

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SI No 9-12, Resource Person: Saurabh Mishra
9. Design and implementation of web portal E-learning (prepare srs first and then follow it to implement)
10. Sales order processing and invoicing (prepare srs first and then follow it to implement)
11. Online library Management system (prepare srs first and then follow it to implement)
12. Implementation of Railway reservation system after making the proper srs (software requirement specification)
SI No 13-16, Resource Person: Dr. Vikas Tripathi
13. movie recommendation system
14. Smart CCTV
15. Automated data generation from cricket video
16. Sentiment analysis using face recognition