



Computer Science Project Ideas

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Overview

Computer Science skills are highly sought after skills in IT/ITeS and STEM-related job roles. Some of the most coveted Computer Science skills in the modern industry include coding, computation, data processing, network information security, web architecture, algorithm design, storage systems & management, and mobile development. Learning these skills opens up new and exciting employment opportunities in the present and future workforce. So, if you are a computer science beginner, the best thing you can do is work on some real-time **computer science project ideas**.

We, here at MartDevelopers, believe in a practical approach as theoretical knowledge alone won't be of help in a real-time work environment. In this paper, we will be exploring some interesting **computer science project ideas** which beginners can work on to put their Programming knowledge to test. In this paper, you will find **top computer science project ideas** for beginners to get hands-on experience.

Project Ideas


I. Online Auction System

In an online auction, buyers and sellers engage in transactional business, wherein buyers purchase items through price bidding. Here, the bids have a starting price and an ending time. Potential buyers who place the highest bidding price for an item are declared the winners and owners of particular items.

In this project, you will create a secure online auction system using the fraud detection method with binary classification. If a user wants to buy a product through an online auction, they must provide their identification details like PAN number, email address, license number, etc. The system will then screen the users, authenticate, and authorize them. Only authorized users can bid in the auction. The system will be designed to predict fraudulent users in the early stages, thereby eliminating the risk of online fraud and scams. These beginner-level computer science projects will help build a strong foundation for fundamental programming concepts.

II. Evaluation Of Academic Performance

This project involves the creation of an evaluation system that can analyze the academic performance of students by utilizing the fuzzy logic method. In the fuzzy logic method, you



will consider three parameters, namely, attendance, internal marks, and external marks, to evaluate the final academic performance of students of an institution. The fuzzy inference system is much more accurate than conventional techniques.

While developing this Computer Science project, make sure that the student information uploaded is correct (devoid of errors). Faulty data entry may lead to inaccurate results.

III. Blood Donation And Blood Bank Finder

Finding a blood donor on time is very crucial as a person's life may depend on it. Hence, there is a need to find a solution that will solve this issue & help people find blood donors easily on time.


Using internet technology people can get connected from almost anywhere. This same internet technology can be utilized to find blood donors online with just one click from the mobile phone. This web based android blood donation application aims at helping out people to get blood donors online in case of an emergency. Users can access the application by creating an account and using this application the users can either register for blood donation to a blood bank or can raise a request to receive blood.

The users can see the list nearby blood banks. The users can view the donors' profile & can request the donors for help and can also chat with the donors. The users can accept or reject a request. The users will also receive notifications of chats and blood donation requests. In this way, this user-friendly web-based blood donation management application can help people save lives.

In this system, the User can request for blood donation or can donate blood to the various blood banks. Users will get the location of the nearby blood banks through an integrated google map. The user will be having a profile where he can post photos, view feeds and many more, the user can view the sent request status of requested blood or donated blood. Also, the user can directly chat with donors and will get a notification if the donor is available.

IV. Warehouse Information Management System

The Warehouse Management System is a real-time warehouse database capable of handling large inventories of an organization. This can be used to track the inventory of a single store, or to manage the distribution of stock between several stores of a larger franchise. However, the system merely records sales and restocking data and provides notification of low stock at any location at a specified interval. The goal is to reduce the strain of tracking rather than to handle all store maintenance. The main goal of the



Warehouse Management System is to ensure consistent availability of supplies for consumers. Thus, the Warehouse Management System is directed toward owners of small to large stores and stock managers who are responsible for maintaining sufficient goods on hand in a retail or manufacturing business. It can scale from a single computer running both client and server software up to multiple stores and warehouses. The system is also capable of tracking In & Out transactions of single or multiple stores as well as generating their billing details. The system generates monthly reports of sales from which a manager of a respective store would be able to know the monthly sales transaction done. Warehouse Management system is a web application.

V. College ERP

ERP School/college/university Management Module which is used by Schools as well as Colleges to manage their daily activities which include the management of Employees, Students, Books and Library Records, Parents details, Assignments, Admission Process, Results and Reports, Exams, Events, Attendance, Timetable, Fees and Other Reports. It provides one-point access to manage these wide range of activities both effectively and efficiently. Managing a school, university, college or any educational institution without a perfect software solution in the present times is painful, same in the case of any enterprises or business. Hence an appropriate solution is required which can ensure the smooth functioning of the organization as a whole, and with ERP college Management Module, this problem can simply be solved.

VI. Smart Healthy Consultancy and Appointment Booking System

The proposed project is a smart appointment booking system that provides patients or any user an easy way of booking a doctor's appointment online. This is a web based application that overcomes the issue of managing and booking appointments according to user's choice or demands. The task sometimes becomes very tedious for the compounder or doctor himself in manually allocating appointments for the users as per their availability. Hence this project offers an effective solution where users can view various booking slots available and select the preferred date and time. The already booked space will be marked yellow and will not be available for anyone else for the specified time. This system also allows users to cancel their booking anytime. The system provides an additional feature of calculating monthly earnings of doctors. Doctors have to just feed the system regularly with daily earnings and the system automatically generates a report of the total amount earned at the end of the month. The application uses Asp.net as a front-end and sql database as the back-end.

VII. Hospital / Medical Centres ERP

This project is an efficient enterprise resource management system made for the medical business. The software system consists of a central database for storing all the ERP related data for a particular medical organization. The system consists of an effective GUI that allows system users to input supply and demand related data easily into the system. The system then processes the data and accordingly stores it into the system. This data can later be used for statistical and work needs. It has a large repository to store and maintain product names, dates, delivery dates and other product specific data. The software system can be modified accordingly to suit various medical business needs.

Additional Functionality(Optional):

Sms notifications: The system automatically important notifications such as an sms is sent to concerned authority at the time a product is out of stock and similar event occurrence.

VIII. Inventory Management System

An inventory management system project that allows users to manage and maintain his/her inventory with ease. The inventory management system has been developed to allow users to add an inventory, delete an inventory, enter inventory quantity and other details, update inventory status and more. The inventory management system has its own intelligently managed support system that allows users to view and manage various inventories added in the system.

The system provides following features:

- Users may add/update/delete inventory.
- Users may add/update inventory details.
- Details include cost, quantity and description.
- Includes forms for inventory inwards and outwards.
- Users may create sub inventories.
- An interactive user interface.
- A flexible inventory management system.

IX. Hotel ERP

The project, Hotel Management System is a web-based application that allows the hotel manager to handle all hotel activities online. Interactive GUI and the ability to manage various hotel bookings and rooms make this system very flexible and convenient. The hotel manager is a very busy person and does not have the time to sit and manage the entire activities manually on paper. This application gives him the power and flexibility to manage the entire system from a single online system. Hotel management project provides room booking, staff management and other necessary hotel management features. The system allows the manager to post available rooms in the system. Customers can view and book rooms online. Admin has the power of either approving or disapproving the customer's booking request. Other hotel services can also be viewed by the customers and can book them too. The system is hence useful for both customers and managers to portable manage the hotel activities.

X. Book Store / Shop Information Management System

An online bookstore software project that acts as a central database containing various books in stock along with their title, author and cost. This project is a website that acts as a central bookstore. This web project is developed using asp.net as the front end and sql as a back-end. The sql database stores various book related details. A user visiting the website can see a wide range of books arranged in respective categories. The user may select the desired book and view its price. The user may even search for specific books on the website. Once the user selects a book , he then has to fill in a form and the book is booked for the user.

XI. Library Information Management System

A college library management is a project that manages and stores books information electronically according to students' needs. The system helps both students and library managers to keep a constant track of all the books available in the library. It allows both the admin and the student to search for the desired book. It becomes necessary for colleges to keep a continuous check on the books issued and returned and even calculate fine. This task if carried out manually will be tedious and includes chances of mistakes. These errors are avoided by allowing the system to keep track of information such as issue date, last date to return the book and even fine information and thus there is no need to keep manual track of this information which thereby avoids chances of mistakes.

Thus this system reduces manual work to a great extent allows smooth flow of library activities by removing chances of errors in the details.

Modules:

- **Admin login:** Admin is the one who administers the system by adding or removing e-books into and from the system respectively.
- **User login:** Students have to register themselves into the system to create an account. After registering successfully, they can then login into the system by entering a 10 digit mobile number and their email id.
- **Add and Update Books:** The admin can add books to the system by entering the details of the books and can even update the details.
- **Search option:** Admin and Students can even search for books by entering the name of the book.
- **View Order-**The admin can view order for the books.
- **Place order-** The students can place order for the books and simultaneously the quantity of the book ordered will be decreased.
- **Calculate Fine-** The student can view the issue and expiry date for the book issued and can even calculate fine.

XII. eBug Tracker

This defect tracking system helps to track bugs. There are three modules in this tracking system, Administrator, Staff and Customer. The Administrator can login to the app and can enter the details of staff, project, view bugs sent from the customers. The admin can also assign work to staff, view bug case flow status details, send messages to customers using this bug tracking application. The staff can login to the site using username and password. Then he/she can view the bugs assigned to them. He can directly give a solution message to customers or he/she can assign the bugs to other staff if the bug is related to them. The user may view bug case flow details with which he/she is involved. The customer registers in the applications and login to the site using username and password. Whenever a bug is raised from his software, he sends the bug details to the administrator with a print screen of the bug generated. He/she may see the bug case flow details and bug status along with remedy details at any time using the ticket number generated during the new bug entry. This is how bug tracking can be done with this application.

XIII. Smart Tender / Contract Management System Using Blockchain

Tenders or contracts are generally used by governments and companies to procure goods or services. Wrongful tender management leads to huge losses in case of faulty practices. This includes favouring of contractors, improper record maintenance, lack of transparency, hacking, data modification and other issues. To ensure the complete tender management process is secure and efficient we here make use of blockchain tech to solve tender management issues. A blockchain is secured by encryption coupled with indisputable block based architecture for transaction management. In this case we make use of Hyperledger blockchain technology to secure transaction based documents along with transactions such as tender documents, applications, bid proposals, company profiles, past records, approving officer details, rejection details to ensure a completely transparent tendering process.

XIV. Medical Report Management And Distribution On BlockChain Technology

Hospital operations usually involve a lot of medical reports which are an integral part of operations. Hospitals these days have increased their business by integrating pathology and other test labs within the hospital for efficient and fast reports along with increased business. Hospital operations include a variety of processes from patient admission, management, to hospital expense management. This coupled with added services like pathology and pharmacy management increases operational complexity and also makes it difficult to track. Thus we use blockchain technology to keep track of every single transaction with a 100% authenticity through the Hyperledger concept. We use blockchain tech to management the medical reports of all patients along with transaction details to demonstrate how this leads to safe, efficient and secure management of the entire system. All transactions are secured by an encryption and stored as blocks to authenticate within a network of computers rather than a centralized server. Moreover we use the hyperledger concept to associate and store all the associated medical documents associated with each transaction with timestamp. This allows to verify the authenticity of each report which will be detected if modified by any individual. Thus we bring forward a secure, safe, efficient and authentic medical report management system using blockchain technology.

XV. State / County Government Fund Allocation And Tracking System

State Governments need to cater to a huge number of responsibilities of a state. The working of state governments involves a huge number of transactions towards various operations that need to be carried out throughout the state. This includes new projects, repair and maintenance works, awarding contracts, paying of government employees, farmer schemes and so on. A major hurdle that the top government faces is the low level corruption that is sometimes impossible to track which deprives the state progress. Tracking it is a very difficult task due to the current system. Here we propose a smart system to track funds allocated to the state government as they travel through the government process at each stage. We here make use of blockchain technology to secure the transactions at every stage while maintaining transparency in every transaction sealing every transaction with proofs as the funds move ahead. This allows to maintain crystal clear records with on demand right to transactional data on a need to know basis. The system makes use of encryption to secure transactional data using hashes to maintain a block of transactions in a chain manner which is maintained and verified by every node involved to verify the transaction and save the data in a transparent form within the government. The system allows for a full proof, secure and authentic fund allocation and fund tracking system to help form an incorruptible government process.

XVI. Sacco / Bank Information Management System

XVII. Car Rental Information Management System

XVIII. Police Station Information Management System

XIX. Fleet Management System

XX. Car Parking Lots Information Management System

XXI. Births And Deaths Registration Information Management System