Computer Programming (b) - E1124

(Spring 2021-2022)

Lecture 13

C++ Project Ideas

INSTRUCTOR

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Contents

➢ **What are the advantages of C++?**

  ➢ C++ is an OOPs based programming language, much suitable for building high-performance applications.

  ➢ C++ finds its use in applications that need high speed and accuracy.

  ➢ for example, operating systems, gaming applications, Graphical User Interface (GUI), and embedded systems.

  ➢ The most popular IDE for C++ in Visual Studio

➢ **C++ significant features**

- ➢ Object-oriented

- ➢ Simple to code and understand

- ➢ Rich set of libraries

- ➢ Efficient memory management

- ➢ Powerful and fast

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➢ **Project 1 - Car Rental System**

➢ This is a trendy project and very useful for learning about keyboard events, date-time functions, and implementing a C++ login system. The program has separate menus for admin and other users. There are also methods to calculate fare based on time and distance, including displaying car details, availability, etc.

➤ **Project 2 - Bookshop inventory system**

➤ This is a simple project where the system maintains the inventory of books in a bookshop. If a customer purchases a book, the book's count will decrease; if a book is added, the same is updated. Notice the use of pointers. You can modify the code to add a book ID and make the search based on book ID or make the search using just one parameter giving multiple results, and so on.

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➢ **Project 3 - Sudoku Game**

➢ We all know about the popular Sudoku game, wherein we need to arrange numbers from 1-9 such that they appear only once in a row and column of a 9x9 grid. The program uses the concept of backtracking. In this program, we have hard-coded the initial values, but you can also get the same input from the user (though that will be cumbersome for this program). The main thing to understand is the backtracking to find rows and columns that are not assigned any values (are zero). Have a look at the program, execute, and see the results:

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➤ **Project 4 - Face Detection App with C++**

➤ This project has so much to offer, and it is great fun too. It makes use of the OpenCV library for face detection. The code structure grasps the face within a few seconds.

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➤ Some projects

1. Attendance Management System.

2. Bus Reservation System.

3. Casino Game Project.

4. College Registration System.

5. Doctor appointment System.

6. Hotel Management System.

7. Staff Management System.

8. Student Database Management System.

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