**Beginners Level**

1. CGPA Calculator
2. Rock Paper Scissor
3. Casino Number Guessing Game
4. Calculator for Scientific Operations
5. Login and Registration System
6. Student Database Management System
7. Inventory System
8. Payroll System
9. Banking System
10. Medical Information System
11. Stock Management System
12. Hospital Management System
13. School Management System
14. Hotel Management System
15. Library Management System
16. Traffic Management System
17. Hangman Game
18. Text-Based Adventure Game
19. Trading Application
20. Search Engine

**Intermediate Level**

1. Snake Game
2. Text Editor
3. Tic-Tac-Toe
4. Minesweeper Game
5. Phonebook Application
6. Using Wake-on-LAN protocol to remote power On a PC
7. Single-colored Blank Image using OpenCV
8. OpenCV Project for Image Blur
9. OpenCV to Play a Video
10. OpenCV to Blur a Video
11. OpenCV Project for Shape Detection
12. OpenCV Project for Face Detection
13. OpenCV Project for Coin Detection
14. Music Player
15. Cryptography Application

**Expert Level**

1. Password Manager
2. Ball Game using OpenGL
3. Helicopter Game
4. Web Browser
5. Finding Nearby Cabs
6. Online Exam System
7. Online Voting System
8. Online Ticket Reservation System
9. Online Job Portal
10. Online Food Ordering System
11. Online Shopping System
12. Blackjack with AI
13. Chess Game with AI
14. Bike Race Game
15. 3D Bounce Ball Game

**Beginner Level C++ Projects Ideas**

**1. CGPA Calculator**

A student’s cumulative grade point average (CGPA) can be determined using the C++ program CGPA Calculator. The user’s input is used to compute the CGPA, which includes information like the number of courses taken and the grades earned in each one. The program also shows each student’s overall course grade. CGPA Calculator calculates a student’s Cumulative Grade Point Average (CGPA) from the given exam results. The program can show the individual grades of each course, calculate total credits and total grade points achieved, determine the GPA for the semester, and based on all the data, it can generate and present the CGPA of the student.

**Technologies Required:**[*C++ programming language*](https://www.geeksforgeeks.org/c-plus-plus/)*, Data Structures, Basic Searching & Sorting algorithms, Basic Arithmetic Operations and formulas, and File Handling ( I/O Streams ).*

**2. Rock Paper Scissor**

Stone Paper Scissor or Rock Paper Scissor is a game that is played between two people, Each player in this game forms one of three shapes. The winner will be decided as per the given rules:

* Rock vs Scissor -> Rock wins
* Rock vs Paper -> Paper wins
* Paper vs Scissor -> Scissor wins

In this game, the user is asked to make choices based on both computer and user choices and the results are displayed showing both computer and user choices.

**Technologies Required:***C++ programming language, I/O Streams, Standard Library Functions.*

**3. Casino Number Guessing Game**

The guessing project in C++ is a game designed to test the player’s luck and knowledge. The player needs to guess a random number generated by the computer. If the player guesses right, they will win a certain amount of money. The winning prize depends on the difficulty of the game. The program implements classes, functions, and user-defined data types. It also uses other features such as loops and conditionals to create a logical structure. Furthermore, it makes use of the standard template library to implement basic operations and other data structures.

**Technologies Required:***C++ programming language, Object Oriented Programming(OOPS),*[*Data Structures*](https://www.geeksforgeeks.org/data-structures/)*, Input/Output Streams, Memory Management,*[*Standard Template Library(STL).*](https://www.geeksforgeeks.org/the-c-standard-template-library-stl/)

**4. Calculator for Scientific Operations in C++**

The main goal of a Calculator for Scientific Operations is to do simple mathematical computations. It also executes a few difficult-to-solve trigonometric and logarithmic functions. The calculator will evaluate any mathematical equation entered using infix notation, which will then provide the result. In addition, it supports addition, subtraction, multiplication, and division in mathematics. This calculator allows keyboard entry. TheC++ class is used to define the data of the Calculator and the various types of functions it can perform such as addition, subtraction, multiplication, division, and modulo. The project also uses classes that handle different exceptions when an illegal input is received or when an operation results in a singular value, such as an imaginary number. The technology used for this program was object-oriented programming which provided the flexibility necessary for the implementation of the various operations.

**Technologies Required:***C++ programming language, Data structures, and Algorithms, Math library in C++, and*[*OOPS*](https://www.geeksforgeeks.org/object-oriented-programming-in-cpp/)*.*

**5. Login and Registration System**

The login And Registration System project in C++ involves mainly the user registration process. User Credentials like usernames and passwords are asked from the user. If the registration of the user is successful then with the given credentials a file will be created of a particular user in the database.

**Technologies Required:***C++ programming language, User Input/Output Libraries, File Manipulation Libraries, Strings and Structures Libraries and Database Libraries.*

**6. Student Database Management System**

We use databases in every aspect of our lives today. Data stored on servers around the world amounts to trillions of bytes. Such a database can be accessed using SQL, one of the most basic methods. But have you ever thought about using C++ to maintain such a database? In this project, we will talk about implementing different views on a text file according to the type of user and edit accordingly. The system will be designed using object-oriented principles and will leverage technologies such as C++, MySQL, etc. The system will also include robust security features to ensure that student data is kept safe and secure.

**Technologies Required:***C++ programming language, Relational Database Management System (RDBMS), Object-Oriented Programming (OOP), Data Structures, Multi-threading, and Encryption/Decryption.*

**7. Inventory System**

This project is designed to create an inventory system in C++ using object-oriented programming. The system will enable the user to store and track information about products, including their quantity, price, and other details. The technologies used for this project include C++ programming language, and database management systems such as MySQL. Additionally, techniques such as Object-Oriented Programming (OOP) and Structured Query Language (SQL) will be used to create an efficient and robust inventory system.

**Technologies Required:**C++ programming language, Object-Oriented Programming (OOP), [Structured Query Language (SQL)](https://www.geeksforgeeks.org/structured-query-language/), Data Structures, Boost Libraries, and Standard Template Libraries (STL).

**8. Payroll System**

The project provides a comprehensive payroll system written in C++, system’s features include the calculation of salaries, deductions, and benefits for both employees and employers. It provides support for managing employee records, tracking hours worked, and generating reports. The system is designed to be user-friendly and efficient, with features such as an intuitive user interface and an automated data entry system.

**Technologies Required:***C++ programming language, SQL, Standard Template Library(STL), Searching and Sorting Algorithms, and Data Structures.*

**9. Banking System**

A C++ project is designed with an object-oriented approach, with classes for customers, accounts, transactions, and banking services. Features included creating and managing customers, accounts, and transactions, as well as performing banking services such as withdrawals, deposits, and transfers. It also allows customers to view their account information, including account balances, recent transactions, and other details.

**Technologies Required:***C++ programming language, OOPS, and*[*MySQL*](https://www.geeksforgeeks.org/mysql-common-mysql-queries/)*.*

**10. Medical Information System**

A Medical Information System is designed to store and organize patient medical information, such as demographic and clinical data, lab results, and other relevant information using a C++ programming language. The system is designed to allow easy expansion, and efficient and secure payments using object-oriented programming techniques to ensure the data is stored, retrieved, and managed efficiently. The system can use encryption and authentication techniques to ensure the data is kept secure and private for a particular patient.

**Technologies Required:***C++ programming language, Object Oriented Programming (OOP), Encryption & Authentication and Database Management System (DBMS).*

**11. Stock Management System**

The Stock Management System in C++ is a program designed to help businesses manage their stock levels. It tracks the current inventory of products and allows users to add, delete and modify items in the inventory. Technologies used in this project include C++ and SQLite. SQLite is used to store and manage data. C++ is used for the program’s backend, allowing for the stock management system to be easily modified and extended. The Stock Management System is a powerful tool that can help store owners and managers keep track of their stock, allowing them to make the most of their resources.

**Technologies Required:***C++ programming language, Object-oriented Programming (OOP), Relational Database Management System(RDBMS), Structured Query Language(SQL) and*[*Multi-threading.*](https://www.geeksforgeeks.org/multithreading-in-cpp/)

**12. Hospital Management System**

The Hospital Management System can help any hospital or healthcare facility by boosting productivity, lowering paperwork, and enhancing patient care. The Hospital Management System in C++ simplifies the process for hospitals and other healthcare organizations to manage medical records, billing, and appointments. Among the information stored in the system are vital signs, medical history, medication details, laboratory results, and billing information. A hospital management system that keeps records of doctors, their appointments, patients, staff, and more using object-oriented programming and file handling (in C++).

**Technologies Required:***C++ programming language, Object Oriented Programming (OOP), and Database Management System (DBMS).*

**13. School Management System**

School Management System project can be used to manage and track student performance, attendance, and grades. The School Management System project aims to develop a School Management System in C++ that can be used by schools to manage their daily operations. The system will enable the school to store, manage, and access student records, teacher records, course information, exam schedules, and other important data related to the activities in the school.

**Technologies Required:***C++ programming language, Object Oriented Programming(OOPs), Relational Database Management System(RDBMS), Data Structures, and Algorithms.*

**14. Hotel Management System**

A Hotel Management project in C++ is designed to digitalize the operations of a hotel. It offers different features such as hotel room booking, room maintenance, customer management, billing, and report generation. The system provides a secure and efficient way of managing the hotel’s operations and ensures customer satisfaction. The Hotel Management System system covers the key features of checking-in, checking-out, booking, reservation, and billing for hotel management.

**Technologies Required:***C++ programming language, Object-Oriented Programming, Structured Query Language (SQL), and Multi-threading.*

**15. Library Management System**

Library Management System provides an interface to register new users, check in, report generations, manage library resources and handle book checkout. Managing user accounts, creating reports, and monitoring library usage is extra functionality provided by the library management system. The library’s management system can keep track of the books it has on hand, which include their availability information such as location, as well as the individuals that are borrowing them, their due dates, and any fines they may have gained. The information in Library Management System is stored and retrieved by the object-oriented system using a variety of technologies and techniques, which include classes, inheritance, polymorphism, and data structures.

**Technologies Required:***C++ programming language, Data Structures, C++ Standard Template Library (STL), Database Management System (DBMS), and File I/O.*

**16. Traffic Management System**

Traffic Management System will provide a program to automate the regulation of traffic lights. It will make use of Standard C++ libraries to create a program that will automatically manage the traffic using traffic signals that will change based on the logic defined in the program.

**Technologies Required:***C++ programming language,*[*C++ Chrono Library*](https://www.geeksforgeeks.org/chrono-in-c/)*, Multithreading.*

**17. Hangman Game**

The hangman project game consists of guessing a secret word of a given length by entering one letter at a time. The game ends if the user does not correctly guess the word within the allotted number of guesses. The Hangman game will utilize classes to store the hidden word and guesses a class containing member methods used to track progress, and a class to represent the hangman figure. The game logic will be written using a variety of features such as structs, switch statements, and loops of C++ programming language.

**Technologies Required:***C++ programming language, Object Oriented Programming (OOPS).*

**18. Text-Based Adventure Game**

Text-Based Adventure Game is a console application and is designed to be interactive and entertaining. It features a variety of locations, objects, and NPCs with which the player can interact. The main goal of this project is to practice Design Patterns, C++, and basic game development using OOPS. Most of the implementation of this game is based on the principles of Object-oriented C++.

**Technologies Required:***C++ programming language, Command Line Interface (CLI), String Manipulation, Condition & Loops, File Input/Output, Data Structures, Object Oriented Programming.*

**19. Trading Application**

The trading application is a console application that will provide different trading operations such as, getting account info, depositing money, buying stocks, selling stocks, checking transactions, etc, which a person doing trade requires. This application will use a DBMS such as MySQL to store data.

**Technologies:***C++ programming languages, File I/O, MySQL, and OOPs.*

**20 Search Engine**

This C++ project focuses on developing a search engine that allows users to search a large database of information quickly and efficiently. Through this project, students can learn in-depth how memory, structs, and classes work. The Search Engine project involves creating a user interface that allows users to search the database using keywords, categories, and dates. The search engine will support local and remote data sources, including structured and unstructured data. It will also allow users to search and browse indexed data.

**Technologies Required:***C++ programming language, Data Structures, and Algorithms, Database Management, Memory Management.*

**Intermediate Level C++ Project Ideas**

**1. Snake Game**

This Snake Game project in C++ is a classic game that is easy to understand and enjoyable to play. This project gives players a sense of accomplishment when they reach higher levels. The code includes various functions and classes, such as a snake class that can be used to move the snake and a board class for creating the game’s playing field. The Snake game will be developed using open-source C++ libraries such as conio and various components such as classes, functions, and loops. As the level of the game increases, Object-Oriented Programming will be applied to make a more efficient coding architecture.

**Technologies Required:***C++ programming language, Object Oriented Programming (OOPS), Data Structures & Algorithms, Multithreading & Processes, Keyboard & Mouse Events, Timers & Clock.*

**2. Text Editor**

A user can create, edit, save, and open text files using the text editor, a straightforward program. In addition to a user interface for the user to interact with, it uses classes and objects to store and alter the content. Basic text editing functions including copying, pasting, deleting, searching, and printing text are all available in the text editor. Text Editor is a simple application that is built into C++ programming language. We can use Graphical User Interface (GUI) Libraries such as QT, and GTK+ for creating a graphical user interface. Libraries such as Pango or Cairo are required to display text on the screen.

**Technologies Required:***C++ programming language, GUI Libraries, File I/O Library, Compression Libraries, Regular Expression Library.*

**3. Tic-Tac-Toe**

Tic-Tac-Toe is a classic two-player game written in C++. In this game, each player takes turns placing Xs and Os on a 3×3 board, with the goal of getting three of their pieces in a row (horizontally, vertically, or diagonally). The game is won when a player gets three in a row, and it is a draw if the board is filled up without either player achieving that. The game board in Tic-Tac-Toe Project is represented by a two-dimensional array, and players engage in gameplay by entering moves into the console. If the move is valid, the game will then check the board to see if it is, and if so, it will switch turns between the two players. When one player collects three consecutive wins, or when the board is entirely filled, the game is over.

**Technologies Required:***C++ programming language, Object Oriented Programming (OOPS), GUI (Graphical User Interface), Data Structures, File Input/Output.*

**4. Minesweeper Game**

This project is a game which is a single-player puzzle game. The main objective of this game is to clear a rectangular board that contains hidden bombs or mines without detonating any of them with the help of hints about the neighbor mines in each field. The game has a 9 x 9 grid with mines placed randomly.

**Technologies Required:***C++ programming language, GUI Library (Qt, SDL), Mathematics Library( Boost, Eigen), Sound Library(OpenAL, SFML), Image Loading Library (stb\_image), Input Handling Library (GLFW, SDL).*

**5. Phonebook Application**

The Phonebook Application is made for storing and organizing contact information for people and businesses. Users can manage their contact list and save and search for contact information using this project. This project will offer a lot of functions, including name or phone number searching and sorting. Users can easily save and manage contact information with the C++ phonebook application. It provides users with an easy way to organize and retain contact information. The system is additionally created to be secure, ensuring that all user data is kept private.

**Technologies Required:***C++ programming language, Database Management System (DBMS), Object-Oriented Principles, Algorithms for Searching and Sorting Data, Advanced Data Structure (BST), Multithreading for parallel Execution of Tasks, File Handling for Storage and retrieval of data, and graphical user interface.*

**6. Using Wake-on-LAN protocol to remote power On a PC**

Wake-on-LAN(WOL) is a network protocol that is used to power any computer remotely. This project is written in C++ which can be used to send the magic packet to a target device. This project should be able to detect any error which may occur during the transmission of the magic packet and should display the errors to the user. The requirement is that the Wake-on-LAN service on the remote PC should be enabled.

**Technologies Required:***C++ programming language, Network protocols, Wake-on-LAN protocol, Operating System, and Software to broadcast Packets.*

**7. Single-colored blank image using OpenCV**

Single-colored blank image project is made with the help of OpenCV and it will create a blank image that is a single color. This project can be used for different purposes like creating a blank canvas for adding graphics, creating a color-filled background for an application or a website, or creating masks for image processing.

**Technologies Required:***C++ programming language, OpenCV Library, Image Processing Library (NumPy, sci-kit-image).*

**8. OpenCV Project for Image Blur**

In this project cvtColor inbuilt function in C++ is used that is used to convert one color space to another by using the color space conversion code. These codes are easily accessible and are predefined. The end result of this project will be a blurred version of the original image which we have given as Input.

**Technologies Required:***C++ programming Language, OpenCV Library for Image Processing, Computer Vision, and Image Processing Techniques.*

**9. OpenCV to play a Video**

In this project, we will be using OpenCV as our library which mainly aims at real-time computer vision. This project will enable the user to adjust the contrast, saturation, and brightness of the video. This project will display the frames of the video on the screen to the user.

**Technologies Required:***C++ programming language, OpenCV Library, Qt Framework, Video codecs, Audio codecs.*

**10. OpenCV to blur a Video**

In this project, we will be using C++ as our main language and OpenCV library to blur a video. This project will take a video as Input and into that program, it will read every frame from it and will apply a blur filter on that video. The program will also have a parameter to control the speed of the video. This parameter will control the rate at which the frames are read and written to the output video. The quality level will be selected by the user which will determine the compression ratio and bitrate of the output video.

**Technologies Required:***C++ programming language, OpenCV Library, Video codecs, Audio Codes, Gui Library (Qt, SDL), Media Frameworks, Image Processing Library (NumPy, sci-kit Image).*

**11. OpenCV Project for Shape Detection**

In this project, we will use C++ along with OpenCV Library to create a program that identifies the shape of the object in a particular image. We will try to find edges in the image using OpenCV library functions and then classify the image based on the data we found.

**Technologies Required:***C++ programming language, OpenCV library, NumPy Library, matplotlib Library, Time Library, OS Library, cv2 Library, dlib library.*

**12. OpenCV Project for Face Detection**

This project uses the OpenCV library to detect faces in a live stream from a webcam or in a video file stored in the local machine. Real-time face detection and tracking are accomplished by using pre-trained XML classifiers. The classifiers in this program are trained in facial features.

**Technologies Required:***C++ programming language, OpenCV must be installed on the local machine, Paths to the classifier XML files must be given before the execution of the program, Use 0 in capture.open(0) to play webcam feed, For detection in a local video provide the path to the video.(capture.open(“path\_to\_video”)).*

**13. OpenCV Project for coin detection**

In real-time computer vision, OpenCV is a library of programming functions primarily aimed at detecting various coins. So this functionality can be implemented through a program that will help us with coin detection.

**Technologies Required:***C++ programming language, OpenCV library, NumPy Library, matplotlib Library, Time Library, OS Library, cv2 Library, dlib library.*

**14. Music Player**

This project is written in C++ and uses standard libraries to provide an efficient and reliable music player.The main goal of this project is to create a music player application that allows users to play, store, and manage digital audio files on their computer system. The application will feature an intuitive user interface, allowing users to easily access and manage their music library. The Music Player will be able to play both local files and streaming audio, and users will be able to add, edit, and delete songs, albums, and artists.

**Technologies Required:***C++ programming language OpenAL (Open Audio Library), Graphical User Interface(GUI), Audio Analysis Libraries, Database Libraries.*

**15. Cryptography Application**

Digital Signatures are created with the help of cryptographic algorithms, to check whether the document or message was created by a particular individual. Users can encrypt and decrypt files using the Cryptography Application in C++ project. The project can also include a comprehensive library of cryptographic functions which will enable the developers to use the application for their own projects. In the Cryptography Application, we will be using various encryption algorithms such as RSA, AES, and Blowfish, along with hashing algorithms such as MD5 and SHA-256. To Implement the cryptography algorithms we will be using OpenSSL and Crypto++ libraries. Boost library will also be used to provide the necessary data structures which are needed for the cryptography application.

**Technologies Required:***C++ programming language, GUI (Graphical User Interface), Encryption Algorithms, Secured Storage.*

**Expert Level C++ Project Ideas**

**1. Password Manager**

It is a graphical user interface application that can be used to store the password along with the username. All the data will be encrypted to prove better security and will be decrypted on demand. Every password will also be hidden behind a wall which we can enter by using the application password.

**Technologies Required:***C++ programming language, GUI library, Encryption/Decryption, Data Structure, and Algorithms, Secured Storage.*

**2. Ball Game using OpenGL**

This project is a 2D ball Game that is developed in C++ Programming language using OpenGL. In this game, the user can control the ball with the help of arrow keys to move the ball around the screen. The main objective of this game is to collect points from the ball by touching certain objects on the screen. In this game, the user can include some power-ups and special items for the player.

**Technologies Required:***C++ programming language, GUI Library i.e, Qt, Mathematics Library (GLM, Eigen), Physics Engine (Bullet, Box2D), Sound Library (OpenAL, SFML), Image Loading Library( std\_image), Collision Detection (PhysX), Object Loading Library (Assimp).*

**3. Helicopter Game**

SDL graphics will be used in this project. C++ defines all basic commands, functions, syntax, and structures, as well as how to handle files. The goal of the game is to drive the helicopter ahead without colliding with any objects. The user should operate the game using keys, and holding the helicopter’s critical advances while releasing it brings it down.

**Abstract:**This project demonstrates how to create a 2D helicopter game in C++. The player will be able to tilt their helicopter up and down to avoid dangers and enemies. The player will fly a helicopter over a scrolling landscape. In this project, the player has the option to shoot enemies in order to advance through the levels. To generate obstacle and terrain random functions and some algorithms were used. A simple DirectMedia Layer (SDL) library was used for the graphics in this game.

**Technologies Required:***C++ programming language, File Handling, OpenGL or SDL, Physics Library, Sound Library, Vector Math Library, 3D modeling software, Version Control Software.*

**4. Web Browser**

The Web Browser project provides a simple web-based user interface that allows users to access online content. This project has a user-friendly interface and provides a safe and secure browsing experience. Users can access a wide range of websites by using the application. In this project, Qt Creator is used for developing the graphical user interface and its related elements, such as buttons, text fields, and tables. The project is built with Qt Creator and offers a powerful set of tools to make it easy to create a front-end interface, manage web page content, and access web data. It also provides an intuitive way to manage multiple windows and tabs, an efficient pop-up blocker, and fast page loading times.

**Technologies Required:***C++ programming language, Qt Creator, Networking APIs, RESTful APIs, HTML, and CSS Parsing, JavaScript Engines, WebGL.*

**5. Finding Nearby Cabs**

This project in C++ will use the great circle distance formula to find the nearest cab to a user location. The great circle distance formula is used for calculating the shortest distance between two points on a sphere, such as Earth or the moon. In this project, the user will give their current location as input and the distance of the cab along with its location will be sent to the user.

**Technologies Required:***C++ programming language, GPS Tracking, Geolocation technology, Database Management System (DBMS), Payment Gateway, Map APIs, and Cloud Computing.*

**6. Online Exam System**

This project is a complete Online Exam System written in C++. It is a web-based system that enables users to set up tests, administer tests, view and grade results, and analyze performance data. Users can set up tests with multiple questions, including objective and essay questions. A Timer for each test can be generated and can randomly select questions from a large pool of questions. It also allows users to leave comments on the test results for further analysis. The system also allows the administrator to publish test results and print out a summary. It records exam answers, multiple choice, and short answer questions, time spent, and marks obtained. With this system, users will be able to take the exams with ease and accuracy.

**Technologies Required:***C++ programming language, Database Management System(DBMS), JavaScript Libraries, Testing Frameworks, and Web Servers.*

**7. Online Voting System**

Online Voting System project in C++ is a complete system aimed at providing an efficient way to conduct elections or surveys online in a more secure way. This project supports electronic voting, rank voting, and simulation voting through a simple and user-friendly interface. The project aims to create a secure, and user-friendly platform for online voting. This project can have features like cryptography, secure socket communication, and a structured database to enable the exchange of digital certificates and voting credentials. This project improves the security of the current voting system by providing a cryptographically secure channel between voters and the server, preventing manipulation and other malicious attacks.

**Technologies Required:***C++ programming language, Object Oriented Programming (OOPS), Database Management System(DBMS), Networking, Security Measures, Software Libraries, Graphical User Interface(GUI), and C++ STL Libraries.*

**8. Online Ticket Reservation System**

The Online Ticket Reservation System project provides an efficient way for customers to purchase tickets for events. The system also offers customers detailed information on upcoming events, and it maintains a database of purchasers and details of the tickets they have purchased. It provides an intuitive and secure means of ticket management, with an account structure to provide customers with reporting, invoicing, and ticket tracking. This program will ask users to enter the age of the person and after entering the age the program will calculate the ticket based on the event algorithms. The core components of the system are an e-commerce platform, an integrated ticket database, and a secure payment processing system.

**Technologies Required:***C++ programming language, Object Oriented Programming (OOPS), Database Management System(DBMS), Web Development Technologies(HTML, CSS, JavaScript), Socket Programming, Graphical User Interface (GUI), Third-party Services (for Payment).*

**9. Online Job Portal**

Online Job Portal is a C++ project that allows users to search for available jobs and apply for them online. The project includes features such as a job search engine, user profiles, and various job listings. The user interface will be designed using HTML, CSS, and JavaScript while PHP and AJAX will be used to create the backend code and MySQL will be used to store data. The project will make use of technologies such as C++, HTML, CSS, JavaScript, PHP, AJAX, and MySQL to develop the online job portal.

**Technologies Required:***C++ programming language, HTML, JavaScript, AJAX, MySQL, Apache Web Server.*

**10. Online Food Ordering System**

The Online Food Ordering System project in C++ is a comprehensive software system designed to facilitate the ordering and delivery of food items from various restaurants or vendors. Online Food Ordering System will be developed using C++, HTML, CSS, JavaScript, and MySQL for the database. The user interface will be designed to be user-friendly. The system will provide users with features such as easy navigation, secure payment options, and confirmation notifications.

**Technologies Required:***C++ programming language. Object Oriented Programming (OOPS), Relational Database Management System(RDBMS), HTML, CSS, JavaScript, AJAX, JQuery, Apache Web Server, XML.*

**11. Online Shopping System**

Online Shopping Systems can be used to compare prices, browse online shops, compare prices, view information on products, and submit any particular order. The status of deliveries can be checked by users and payment information can also be tracked in this application. This Online Shopping System project has a GUI interface that allows customers to select and purchase items from that catalog, as

**Technologies Required:***C++ programming language, Object Oriented Programming(OOPS), databases, HTML/CSS, JavaScript, Server-Siide Scripting, Web Services, APIs, Security (SSL, Encryption, two-factor Authentication).*

**12. Blackjack with AI**

Each player and dealer in the blackjack with AI game has a hand in playing cards. The AI algorithm that controls the game decides what to do based on the cards in each player’s hand. The blackjack with AI project explores the implementation of AI in Blackjack using C++. The Monte Carlo method is a well-known technique of learning by simulated trial and error, while the Q-Learning algorithm is a form of reinforcement learning.

**Technologies Required:***C++ programming language, Object Oriented Programming (OOPS), Data Structures & Algorithms, Database Management Systems, OpenCV, SQL, Reinforcement Learning Algorithms, Q Learning, Graphical User Interface (GUI), and Machine Learning.*

**13. Chess Game with AI**

A project created to simulate a game of chess is referred to as a C++ chess project. A computer game of chess between two players should be made possible by the program. The program must be able to display the pieces on a chessboard and have a graphical user interface (GUI). A project created to simulate a game of chess is referred to as a C++ chess project. A computer game of chess between two players should be made possible by the program. The software must be able to display the pieces on a chessboard and have a graphical user interface (GUI).

**Technologies Required:***C++ programming language, Object Oriented Programming (OOPS), Artificial Intelligence (AI), Data Structures, and Algorithms.*

**14. Bike Race Game**

Bike Race Game in C++ is designed in Object Oriented Programming Language i.e, C++.Two players in the game race against each other in a 3D environment with obstacles, racetracks, and traps. As the players complete each circuit the game unlocks upgrades for more features on the bike and upgrades the difficulty levels. The bike Race Game project includes a wide variety of race settings as time limits. The main objective of this project is to create an exciting and interactive gaming experience for users. This project utilizes object-oriented programming principles and is designed to be portable and easily upgradeable. This project is a great way to explore the use of C++ graphics and demonstrates the capabilities of the language for game development.

**Technologies Required:***C++ programming language, Object Oriented Programming (OOPS), Data Structure, Algorithms, Graphics, UI Design, Physics Simulation, Networking.*

**15. 3D Bounce Ball Game**

3D bounce is just a console application gaming project that makes use of the Open Graphics Library and C++ Programming skills. A ball can move around and bounce off of walls and obstacles in the 3D realistic environment of the 3D bounce ball game. In the 3D Bounce Ball project the user has the ability to control the ball and collect items and score points. The main goal of the 3D Bounce Ball Game project is to navigate the ball through the environment and collect as many items as possible. The 3D Bounce Ball Game project uses advanced shadowing and lighting techniques to create a realistic and immersive 3D environment with the help of OpenGL.

**Technologies Required:***C++ programming language, OpenGL, GLUT (OpenGL Utility Toolkit), Physics Engine, 3d Model Creation.*