

Programming Projects Guide

5 Projects for Each Major Programming Language with Required Topics

C

1. Student Record Management System

Required Topics: File Handling, Structures, Arrays, Functions, Pointers

2. Mini Calculator

Required Topics: Functions, Switch Case, Loops

3. Bank Management System

Required Topics: Structures, File Handling, Functions, Control Statements

4. Library Management System

Required Topics: Structures, File Handling, Pointers

5. Tic Tac Toe Game

Required Topics: 2D Arrays, Functions, Control Flow

C++

1. Inventory Management System

Required Topics: Classes & Objects, File Handling, Inheritance, Polymorphism

2. Online Banking System

Required Topics: OOP Concepts, File Handling, Exception Handling

3. Employee Payroll System

Required Topics: STL, File Handling, Classes

4. Student Grading System

Required Topics: Classes, Inheritance, File Handling

5. Simple Chat Application (Console)

Required Topics: OOP, File Handling, Basic Networking

Java

1. Library Management System

Required Topics: OOP Concepts, Collections, File Handling

2. Bank ATM Simulation

Required Topics: Classes, Interfaces, Exception Handling

3. Student Information System

Required Topics: JDBC, OOP Concepts, Collections

4. E-commerce Console App

Required Topics: OOP, Collections Framework, Exception Handling

5. Hotel Booking System

Required Topics: JDBC, Swing/JavaFX, OOP Concepts

Python

1. Weather App (API based)

Required Topics: Requests, JSON, Functions, Modules

2. Expense Tracker

Required Topics: File Handling, OOP, Dictionaries

3. Chatbot

Required Topics: NLP Basics, Regex, Functions

4. Library System with GUI

Required Topics: Tkinter, SQLite, OOP

5. Data Visualization Project

Required Topics: Pandas, Matplotlib, Numpy

JavaScript

1. To-Do List App

Required Topics: DOM Manipulation, Events, Local Storage

2. Quiz App

Required Topics: Functions, Events, Arrays

3. Weather App

Required Topics: API Fetch, Async/Await, DOM

4. Calculator

Required Topics: Functions, Events, DOM Manipulation

5. Portfolio Website

Required Topics: HTML, CSS, JS Events

HTML & CSS

1. Portfolio Website

Required Topics: HTML5, CSS3, Flexbox/Grid

2. Landing Page

Required Topics: HTML, CSS, Responsive Design

3. Restaurant Website

Required Topics: HTML Forms, CSS Grid, Media Queries

4. Blog Website

Required Topics: HTML5 Semantic Elements, CSS Styling

5. E-commerce Template

Required Topics: HTML Forms, CSS Flexbox, Responsive Navbar

PHP

1. Login System

Required Topics: Sessions, Forms, MySQL

2. Blog CMS

Required Topics: CRUD Operations, MySQL Integration

3. E-commerce Website

Required Topics: Sessions, MySQL, File Handling

4. Forum System

Required Topics: Sessions, Database, Authentication

5. School Management System

Required Topics: CRUD, Database, Authentication

C# & .NET

1. Hospital Management System

Required Topics: OOP, ADO.NET, WinForms

2. Library System

Required Topics: Classes, Database Integration, Forms

3. Inventory System

Required Topics: ADO.NET, WinForms, OOP

4. Employee Payroll System

Required Topics: OOP, File Handling, ADO.NET

5. Hotel Booking App

Required Topics: WPF, ADO.NET, OOP

Unity (Game Dev)

1. 2D Platformer Game

Required Topics: Sprites, Physics, C# Scripting

2. Car Racing Game

Required Topics: Physics Engine, C# Scripts, Game Objects

3. Shooting Game

Required Topics: Prefabs, Collisions, C# Scripting

4. Puzzle Game

Required Topics: C# Scripting, UI Elements, Game Logic

5. VR Mini Game

Required Topics: Unity VR SDK, C# Scripts, Physics

SQL

1. *Library Database*

Required Topics: DDL, DML, Joins

2. *Student Information Database*

Required Topics: DDL, DML, Constraints

3. *E-commerce DB*

Required Topics: Tables, Foreign Keys, Joins

4. *Hospital Database*

Required Topics: DDL, Joins, Stored Procedures

5. *Payroll Database*

Required Topics: Triggers, Functions, Views