1. Roll number 1 to 8

**Library Management System**:

* **Objective**: Create a library management system where users can borrow and return books, and librarians can add or remove books.
* **Concepts Covered**: Object-oriented programming, file handling, collections (e.g., lists, maps), exception handling.

**Basic Alarm Clock**:

* **Objective**: Develop a console-based alarm clock that allows users to set an alarm.
* **Concepts Covered**: Date and time manipulation, loops, basic I/O.

**Basic Expense Tracker**:

* **Objective**: Develop a console-based expense tracker that allows users to log and view their expenses.
* **Concepts Covered**: Data structures (lists or arrays), basic file handling (optional), basic I/O.

1. Roll number 9 to 16

**Chat Application**:

* **Objective**: Develop a simple client-server chat application using sockets.
* **Concepts Covered**: Networking, multi-threading, GUI programming (optional).

**Simple Encryption/Decryption**:

* **Objective**: Create a program that can encrypt and decrypt text using a simple substitution cipher.
* **Concepts Covered**: String manipulation, loops, conditionals.

**Password Strength Checker**:

* **Objective**: Write a program that checks the strength of a given password based on certain criteria (length, character types, etc.).
* **Concepts Covered**: String manipulation, conditionals, loops.

1. Roll number 17 to 24

**Banking System**:

* **Objective**: Implement a basic banking system with functionalities like account creation, deposit, withdrawal, and balance inquiry.
* **Concepts Covered**: Classes and objects, inheritance, polymorphism, exception handling.

**Basic Quiz Application**:

* **Objective**: Implement a quiz application that asks the user multiple-choice questions and provides a score at the end.
* **Concepts Covered**: Arrays or lists, loops, conditionals, basic I/O.

**Rock-Paper-Scissors Game**:

* **Objective**: Create a console-based Rock-Paper-Scissors game where the user plays against the computer.
* **Concepts Covered**: Random number generation, loops, conditionals.

1. Roll number 15 to 32

**Maze Solver**:

* **Objective**: Write a program that finds the shortest path through a maze using algorithms like BFS or DFS.
* **Concepts Covered**: Algorithms, recursion, data structures (stacks, queues), 2D arrays.

**Palindrome Checker**:

* **Objective**: Create a program that checks if a given string is a palindrome.
* **Concepts Covered**: String manipulation, loops, conditionals.

**Basic Statistics Calculator**:

* **Objective**: Develop a program that calculates basic statistics (mean, median, mode) from a list of numbers.
* **Concepts Covered**: Arrays or lists, loops, basic arithmetic.

1. Roll number 33 to 40

**Tic-Tac-Toe Game**:

* **Objective**: Create a two-player Tic-Tac-Toe game with a simple AI opponent.
* **Concepts Covered**: Arrays, game logic, simple AI algorithms (minimax).

**Temperature Converter**:

* **Objective**: Develop a program that converts temperatures between Celsius, Fahrenheit, and Kelvin.
* **Concepts Covered**: Functions/methods, arithmetic operations, basic I/O.

**Simple Voting System**:

* **Objective**: Implement a console-based voting system where users can vote for candidates and the system displays the results.
* **Concepts Covered**: Data structures (lists or arrays), loops, conditionals, basic I/O.

1. Roll number 41 to 48

**Weather Data Analyzer**:

* **Objective**: Parse and analyze weather data from a CSV file to find trends and statistics.
* **Concepts Covered**: File I/O, data parsing, collections, basic statistics.

**Simple Address Book**:

* **Objective**: Create an address book application where users can add, view, and delete contact information.
* **Concepts Covered**: Data structures (lists or arrays), classes and objects (for contact information), basic file handling (optional).

**Grade Calculator**:

* **Objective**: Create a program that calculates the average grade from a list of grades and determines the corresponding letter grade.
* **Concepts Covered**: Arrays or lists, loops, conditionals, basic arithmetic.

1. Roll number 49 to 56

**File Compression and Decompression**:

* **Objective**: Implement a simple file compression algorithm (like Huffman coding) and a corresponding decompression algorithm.
* **Concepts Covered**: Algorithms, trees, bit manipulation, file I/O.

**Number Guessing Game**:

* **Objective**: Implement a number guessing game where the computer randomly selects a number, and the user has to guess it.
* **Concepts Covered**: Random number generation, loops, conditionals.

**Tip Calculator**:

* **Objective**: Develop a program that calculates the tip and total bill amount based on user input for the bill amount and tip percentage.
* **Concepts Covered**: Basic arithmetic, user input/output.

1. Roll number 57 to 64

**Online Storefront**:

* **Objective**: Create an online storefront where users can browse products, add them to a cart, and proceed to checkout.
* **Concepts Covered**: Classes and objects, collections, basic web programming (optional), file I/O.

**Unit Converter**:

* **Objective**: Create a unit converter that converts between different units of measurement (e.g., length, weight, temperature).
* **Concepts Covered**: Functions/methods, conditionals, basic arithmetic.

**Grocery List**:

* **Objective**: Develop a console-based grocery list application where users can add, view, and remove items.
* **Concepts Covered**: Data structures (lists or arrays), basic file handling (optional), basic I/O.

1. Roll number 65 to 72

**Scheduling System**:

* **Objective**: Develop a scheduling system for booking appointments or meetings.
* **Concepts Covered**: Data structures (lists, maps), date and time manipulation, file handling.

**To-Do List**:

* **Objective**: Develop a console-based to-do list application where users can add, view, and delete tasks.
* **Concepts Covered**: Data structures (lists), basic file handling (optional for saving tasks), basic I/O.

**Currency Converter**:

* **Objective**: Develop a currency converter that converts amounts between different currencies based on user input.
* **Concepts Covered**: Functions/methods, conditionals, basic arithmetic.

1. Roll number 73 to 80

**Text-Based Adventure Game**:

* **Objective**: Create a text-based adventure game where players navigate through different rooms, pick up items, and solve puzzles.
* **Concepts Covered**: Classes and objects, game logic, file I/O (for saving game state).

**Calculator**:

* **Objective**: Create a basic calculator that can perform addition, subtraction, multiplication, and division.
* **Concepts Covered**: Basic I/O, arithmetic operations, conditionals, loops.

**BMI Calculator**:

* **Objective**: Create a program that calculates the Body Mass Index (BMI) based on user input for weight and height.
* **Concepts Covered**: Functions/methods, basic arithmetic, user input/output.