Subroutine Programs:

1. simple mini calculator program in C++ that uses subroutines for basic arithmetic operations
2. Write a complete students database with subroutines involves storing and managing student information using appropriate data structures and providing various functionalities to interact with the database and implement in C++ with subroutines:
3. Design a subroutine program to calculate the area and perimeter of different geometric shapes (circle, rectangle, triangle, etc.).
4. Implement a subroutine program to check if a given string is a palindrome or not.
5. Implement a subroutine program to reverse an array of integers in-place.

Dynamically Dispatched memory programs:

1. Write a program that dynamically allocates memory for an array of integers based on user input and then finds the sum of all elements in the array.
2. Implement a program that reads a text file and dynamically stores each line as a string in memory. Then, display the content of the file with line numbers.
3. Create a program that uses dynamic memory allocation to implement a stack data structure to push and pop elements.
4. Implement a program that uses dynamic memory allocation to simulate a banking system that stores customer information, account details, and transactions.
5. Design a program that dynamically allocates memory for an image processing application, allowing users to resize and manipulate images.