**Data mining:**

1.Implement data mining algorithms using C++: Star cubing, FP growth, Decision tree and Kernighan-Lin partitioning

2. Create test data to test accuracy, runtime and robustness.

**Game theory:**

1. Implement many simple games like Nim, Hanoii, 8-queens, and Sudoku in C++.

2. Design and implement the game of Tetris in C++ console.

**Embedded system design:**

1. Design a smart car with the ability to avoid barriers and turn at corners.

2. Use 8-bit Atmega-8 as microcontroller, four IR sensors as detectors, and C++ as primary programming language incorporate with some assembly code.

**Linux system:**

1. Implement multi-producers multi-consumers model using multithreading, mutex and semaphore techniques in C++.

2. Implement simple inter-process communication including Pipe and Message queue.

3. Implement multiple ‘kill’ command functions in C++.