Assignment 2

Develop a MATLAB program to calculate and analyze the grades of students. The program should read a file containing student data, perform various calculations, and generate a report. Your program should cover if conditions, for and while loops, nested loops, and file handling.

Instructions:

1. Create a text file named "student_data.txt" with the following format:
   - Each line represents a student's data in the format: "Name Score1 Score2 Score3"
   - The data is separated by spaces.
   - The file should contain at least 5 records.

   Sample data file:
   ```
   Nimal 85 92 78
   Kamal 91 88 95
   Sunimal 76 84 70
   Piyal 88 92 86
   Dayal 79 85 80
   ```

2. Write a MATLAB program that performs the following tasks:
   a. Read the student data from the file and store it in an appropriate data structure.
   b. Calculate the average score for each student.
   c. Determine the letter grade for each student based on the following criteria:
      - 90 or above: A
      - 80-89: B
      - 70-79: C
      - 60-69: D
      - Below 60: F
   d. Calculate the class average score.
   e. Determine the number of students who passed (scored C or above).
   f. Generate a report displaying the student names, average scores, and grades.

   Sample Output:
   ```
   STUDENT REPORT
   --------------------------------
   Name        Average   Grade
   --------------------------------
   Nimal       85.00       B
   Kamal       91.33       A
   Sunimal     76.67       C
   Piyal       88.67       B
   Dayal       81.33       B
   --------------------------------
   Class Average: 84.60
   Number of Students Passed: 5
   ```

Submit your MATLAB script (.m file) along with the "student_data.txt" file.