```
Script started on 2024-02-23 14:35:18-06:00 [TERM="xterm-256color" TTY="/dev/pts/0" COLUMNS="254" LINES="58"]
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ pwd
[?2004l
/home/jovyan/CS2/Lab/Lab_9
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ ls -la
[?2004l
total 36
drwxr-sr-x  3 jovyan users 4096 Feb 23 14:35 [0m[01;34m.[0m
drwxr-sr-x 13 jovyan users 4096 Feb 22 11:15 [01;34m..[0m
-rw-r--r--  1 jovyan users 2026 Feb 23 14:33 grader.cpp
drwxr-sr-x  2 jovyan users 4096 Feb 21 22:20 [01;34m.ipynb_checkpoints[0m
-rw-r--r--  1 jovyan users    0 Feb 23 14:35 Sabin_Lab_9.log
-rw-r--r--  1 jovyan users   16 Feb 21 22:23 T0.dat
-rw-r--r--  1 jovyan users   28 Feb 23 14:34 T1.dat
-rw-r--r--  1 jovyan users  183 Feb 23 14:34 T2.dat
-rw-r--r--  1 jovyan users    7 Feb 23 14:34 T4.dat
-rw-r--r--  1 jovyan users    7 Feb 23 14:34 T5.dat
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ cat -n
grader.cpp
[?2004l
```

```
     1  #include <iostream>
     2  #include <fstream>
     3  #include <iomanip>
     4  #include <string>
     5
     6  int ProcessFile(std::ifstream &inFile,int &count,int &pointsEarned);
     7  double CalculateFinalGrade(int tot_points, int max_points);
     8  char CalculateLetter(int final_grade);
     9
    10  int main(){
    11      std::ifstream inFile{};
    12      int count {0};
    13      double finalGrade{};
    14      int pointsEarned{};
    15      int maxPoints{};
    16      char letterGrade{};
    17
    18
    19
    20      maxPoints = ProcessFile(inFile, count, pointsEarned);
    21
    22      inFile.close();
    23
    24      finalGrade = CalculateFinalGrade(pointsEarned, maxPoints);
    25      letterGrade = CalculateLetter(finalGrade);
    26
    27      std::cout << std::fixed << std::setprecision(1);
    28      std::cout << "Number of Grades:" << std::setw(13) << count << '\n';
    29      std::cout << "Total Points Earned:" << std::setw(10) << pointsEarned << '\n';
    30      std::cout << "Max Possible Points:" << std::setw(10) << maxPoints << '\n' << '\n';
    31      std::cout << "Final Grade:" << std::setw(7) << letterGrade << std::setw(10) << finalGrade << '%' << '\n';
    32  }
    33
    34
    35  int ProcessFile(std::ifstream &inFile,int &count,int &pointsEarned){
    36      std::string fileName{};
    37      std::cout << "Enter the input file: ";
    38      std::cin >> fileName;
    39      std::cout << '\n';
    40      inFile.open(fileName);
    41      int grade{};
    42      if(!inFile){
    43          std::cout << fileName << " does not exist.";
    44          return 0;
    45      }
    46      while(inFile >> grade){
    47          pointsEarned += grade;
    48          count++;
    49      }
    50
    51      int maxPoints{100};
    52      maxPoints = (maxPoints * count);
    53      return maxPoints;
    54
    55  }
    56
    57  double CalculateFinalGrade(int tot_points, int max_points){
    58      double finalGrade = (static_cast<double>(tot_points) / max_points) * 100;
    59      return finalGrade;
    60  }
    61
    62  char CalculateLetter(int finalGrade){
    63      char letterGrade{};
```

```
    64      if(finalGrade >= 90){
    65          letterGrade = 'A';
    66      } else if(finalGrade >= 80){
    67          letterGrade = 'B';
    68      } else if(finalGrade >= 70){
    69          letterGrade = 'C';
    70      }else if(finalGrade >= 60){
    71          letterGrade = 'D';
    72      } else{
    73          letterGrade = 'F';
    74      }
    75      return letterGrade;
    76  }[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$
g__ [K[K[K[Kg++ -WE[Ka;; [K[K[Kll -Wextra -Werror grader.cpp -og[K grade
[?2004l
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ ./grade
[?2004l
Enter the input file: T0.dat

Number of Grades:            5
Total Points Earned:       448
Max Possible Points:       500

Final Grade:      B      89.6%
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ ./grade
[?2004l
Enter the input file: T1.dat

Number of Grades:           10
Total Points Earned:       318
Max Possible Points:      1000

Final Grade:      F      31.8%
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ ./grade
[?2004l
Enter the input file: T2.dat

Number of Grades:           60
Total Points Earned:      4427
Max Possible Points:      6000

Final Grade:      C      73.8%
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ ./grade
[?2004l
Enter the input file: T4.dat

Number of Grades:            2
Total Points Earned:       120
Max Possible Points:       200

Final Grade:      D      60.0%
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ ./grade
[?2004l
Enter the input file: T5.dat

Number of Grades:            2
Total Points Earned:       140
Max Possible Points:       200

Final Grade:      C      70.0%
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ ./grade
[?2004l
Enter the input file: nofile

nofile does not exist.Number of Grades:            0
Total Points Earned:         0
Max Possible Points:         0

Final Grade:      F      -nan%
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ ./grade
[?2004l
Enter the input file: nope

nope does not exist.Number of Grades:            0
Total Points Earned:         0
Max Possible Points:         0

Final Grade:      F      -nan%
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Lab/Lab_9[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Lab/Lab_9[00m$ exit
[?2004l
exit

Script done on 2024-02-23 14:37:01-06:00 [COMMAND_EXIT_CODE="0"]
```