```
Script started on 2023-09-28 20:04:16+00:00 [TERM="xterm-256color" TTY="/dev/pts/0" COLUM
NS="63" LINES="55"]
\[\033[01;34m\]\w\[\033[00m\]$ pwd
/home/runner/Lab-9-A-Review-Problem-kcp3s
\[\033[01;34m\]\w\[\033[00m\]$ ls -la
total 2588
drwxr-xr-x 1 runner runner     290 Sep 28 20:04 .
drwxrwxrwx 1 runner runner     108 Sep 28 19:51 ..
-rwxr-xr-x 1 runner runner   17560 Sep 27 02:23 a.out
-rw-r--r-- 1 runner runner      17 Aug 18 20:59 .breakpoints
drwxr-xr-x 1 runner runner      12 Jan 24  2022 .cache
drwxr-x--- 1 runner runner     578 Sep 26 17:53 .ccls-cache
drwxr-xr-x 1 runner runner      68 Sep 28 19:51 .lesson
-rwxr-xr-x 1 runner runner 1284520 Sep 27 02:25 main
-rw-r--r-- 1 runner runner    1957 Sep 27 02:25 main.cpp
-rwxr-xr-x 1 runner runner 1258728 Aug 18 20:58 main-debug
-rw-r--r-- 1 runner runner   29432 Apr 21  2022 main.o
-rw-r--r-- 1 runner runner     432 Aug 18 21:02 Makefile
-rw-r--r-- 1 runner runner       0 Sep 28 20:04 Patel_Lab_9.log
-rw-r--r-- 1 runner runner    1426 Dec 21  2022 .replit
-rw-r--r-- 1 runner runner     143 Sep 26 12:34 replit.nix
-rw------- 1 runner runner      16 Sep 26 12:35 T0.dat
-rw------- 1 runner runner      28 Sep 26 12:35 T1.dat
-rw------- 1 runner runner     184 Sep 26 12:35 T2.dat
-rw------- 1 runner runner       0 Sep 26 12:35 T3.dat
-rw------- 1 runner runner       7 Sep 26 12:35 T4.dat
-rw------- 1 runner runner       7 Sep 26 12:35 T5.dat
\[\033[01;34m\]\w\[\033[00m\]$ cat -n main.cpp
     1  #include <fstream>
     2  #include <iomanip>
     3  #include <iostream>
     4  #include <string>
     5
     6  int ProcessFile(std::ifstream &file, int &number_grade, int &total_points);
     7  double CalculateAverage(int total_points, int max_points);
     8  char CalculateLetter(double final_grade);
     9
    10  int main() {
    11    std::string file_name;
    12    int number_grade = 0;
    13    int total_points = 0;
    14
    15    std::cout << "Enter the input file: ";
    16    std::cin >> file_name;
    17
    18    std::ifstream file;
    19    file.open(file_name);
    20
    21    if (!file) {
    22      std::cout << "\n" << file_name << " does not exist.\n";
    23      return 1;
    24    }
    25
    26    std::cout << "\n";
    27    int max_points = ProcessFile(file, number_grade, total_points);
    28    double percent_grade = CalculateAverage(total_points, max_points);
    29    char final_grade = CalculateLetter(percent_grade);
    30
    31    std::cout << "Number of grades: " << std::setw(11) << number_grade << "\n";
    32    std::cout << "Total Points Earned: " << std::setw(8) << total_points << "\n";
    33    std::cout << "Max Possible Points: " << std::setw(8) << max_points << "\n\n";
    34    std::cout << "Final Grade: " << std::setw(7) << final_grade << std::setw(8)
    35              << std::fixed << std::setprecision(1) << percent_grade << "%"
    36              << "\n";
    37    file.close();
    38    return 0;
    39  }
    40
    41  int ProcessFile(std::ifstream &file, int &number_grade, int &total_points) {
    42    int max_points = 0;
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    43    int grade;
    44    while (file >> grade) {
    45      number_grade++;
    46      total_points += grade;
    47      max_points += 100;
    48    }
    49
    50    return max_points;
    51  }
    52
    53  double CalculateAverage(int total_points, int max_points) {
    54    static double percent_grade;
    55    percent_grade = ((total_points * 1.0/ max_points)*100);
    56    if (total_points == 0 || max_points == 0) {
    57      return 0.0;
    58    }
    59    return percent_grade;
    60  }
    61
    62  char CalculateLetter(double final_grade) {
    63    if (final_grade >= 90.0) {
    64      return 'A';
    65    } else if (final_grade >= 80.0) {
    66      return 'B';
    67    } else if (final_grade >= 70.0) {
    68      return 'C';
    69    } else if (final_grade >= 60.0) {
    70      return 'D';
    71    } else {
    72      return 'F';
    73    }
    74  }\[\033[01;34m\]\w\[\033[00m\]$ g++ main.cpp -o review
\[\033[01;34m\]\w\[\033[00m\]$ ./review
Enter the input file: T0.dat

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

Final Grade:       B    89.6%
\[\033[01;34m\]\w\[\033[00m\]$ ./review
Enter the input file: T1.dat

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

Final Grade:       F    31.8%
\[\033[01;34m\]\w\[\033[00m\]$ ./review
Enter the input file: T2.dat

Number of grades:          60
Total Points Earned:     4472
Max Possible Points:     6000

Final Grade:       C    74.5%
\[\033[01;34m\]\w\[\033[00m\]$ ./review
Enter the input file: T3.dat

Number of grades:           0
Total Points Earned:        0
Max Possible Points:        0

Final Grade:       F     0.0%
\[\033[01;34m\]\w\[\033[00m\]$ ./review
Enter the input file: random.dat

random.dat does not exist.
\[\033[01;34m\]\w\[\033[00m\]$ exit
```

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Script done on 2023-09-28 20:06:30+00:00 [COMMAND_EXIT_CODE="1"]
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