1. Write a program to calculate final score and a letter grade. The input file consists of student's first name, last name and mid-term scores.

The maximum score for each mid-term is 50.

Example input file is as follows (midterms.txt)

Jimmy	Madison	46	34	31	49
Stephanie	Monroe	45	47	42	46
Thomas	Jefferson	39	34	41	46
Ricardo	Clark	40	47	35	35

The logic to calculate the final score is as follows, **take the best 3 scores** (highest ones) and then, the total score is to be converted for 100. Then, the letter grade has to be decided based on the total score %.

Final output expected is as follows (finals.txt)

Jimmy	Madison	86	B
Stephanie	Monroe	92	A
Thomas	Jefferson	84	B
Ricardo	Clark	81.33	B

Final scores 90 and above – Letter Grade A
80 and Above Letter Grade B
70 and above letter grade C
60 and Above letter grade D
And all others F

Write a program to read midterms.txt and produces the file finals.txt.

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2. Write a calculator program, reading the inputs from a file.

Example input file is as follows (inputs.txt)

```
5 + 3
3 – 5
2 * 8
25 / 5
30 % 12
30 – 2
2 ^ 3
```

This follows the same pattern as,

Operand Operator Operand.

The expected output file is, - calculated.txt

```
5 + 3 = 8
3 - 5 = -2
2 * 8 = 16
25 / 5 = 5
30 % 12 = 6
30 - 2 = 28
2 ^ 3 = 8
```
Once the calculations are complete, create a report.txt file, which shows,

```
No of addition operations = 1
No of subtraction operations = 2
No of modulus operations = 1 .. etc.,
```

Your program must support the following operations, +, -, *, /, %, ^(power – you need to write code for calculating power. Do not use any library function for power operator)

3. **Write a program to find the sum of first 100 elements of the series: (using while loop and using for loop – 2 different versions)**

5, 13, 21, 29 ....

Now convert your program, to sum any arithmetic sequence, where user can input the starting element, number of elements and the common difference.

4. **Write a program to find the sum of first 10 elements of the series: (using while loop and using for loop – 2 different versions.)**

3, 6, 12, 24, 48, ...

Now convert your program, to sum any geometric sequence, where user can input the starting element, number of elements and the common factor.

5. **If you have more time, then, write a program using while loop to determine whether the given input string is a palindrome. Ex: racecar – YES, Hello – No, deed - YES**