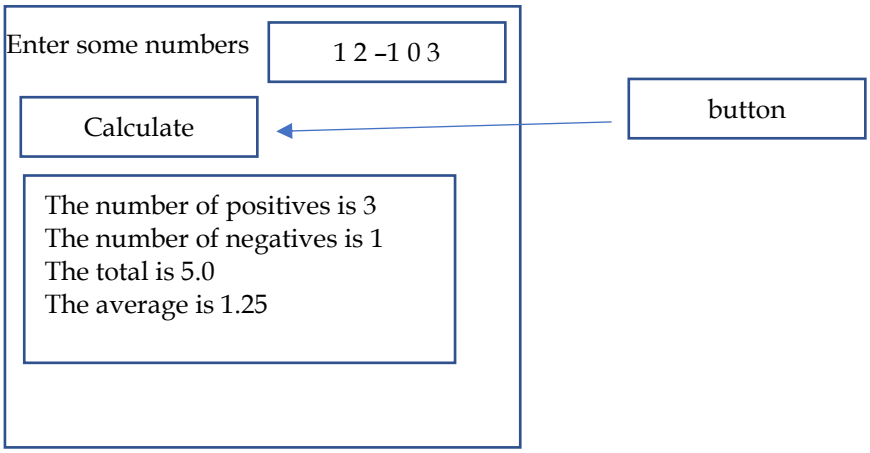
Topics:

1. Data Types, variables, nullability
2. Operators and Expressions
3. Flow Control

Problem 1 [1 mark]

Android Project name: w1_studentid_p1
Language: Kotlin

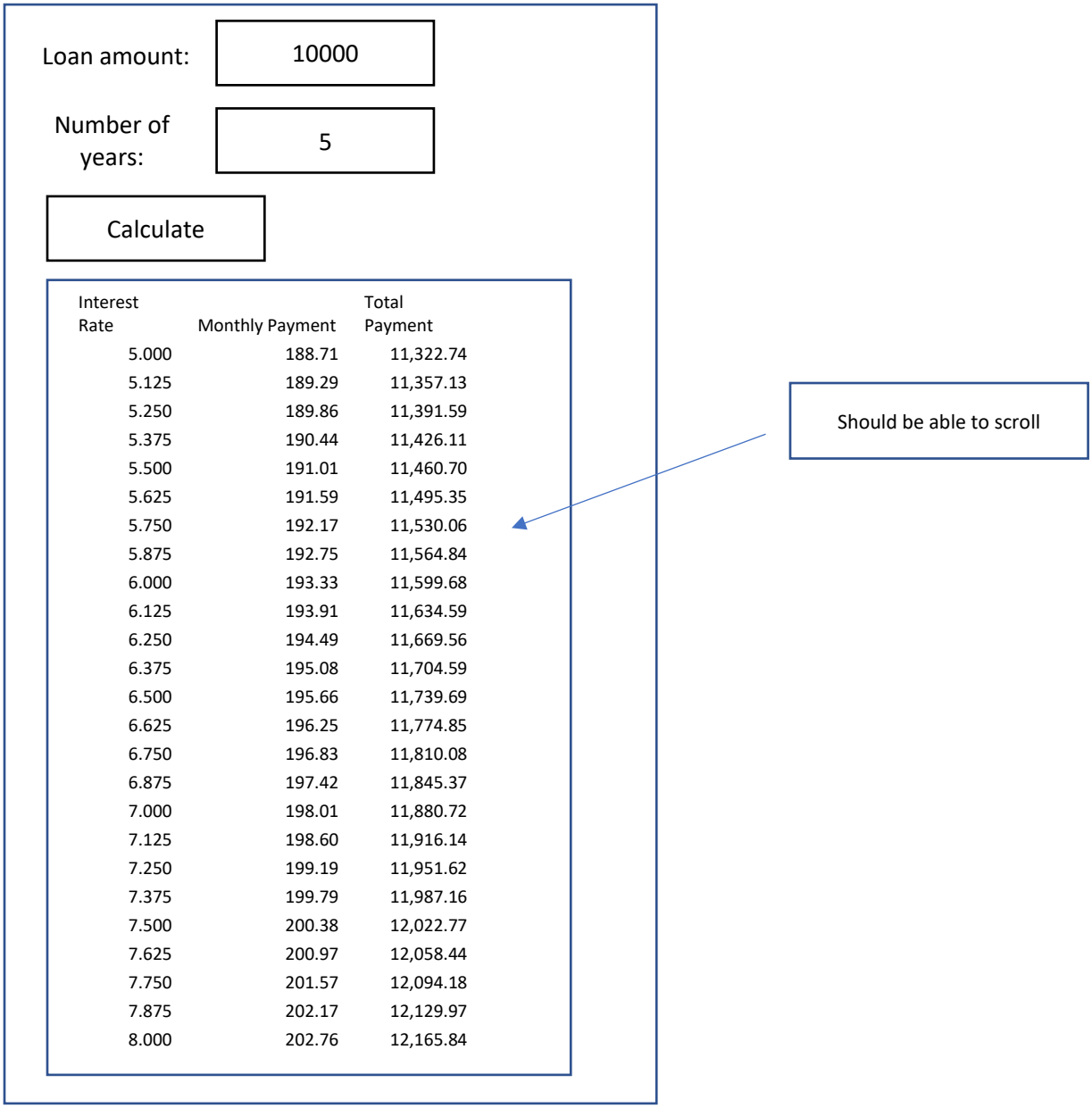
(COUNT POSITIVE AND NEGATIVE NUMBERS AND COMPUTE THE AVERAGE OF NUMBERS)
Write a program that reads an unspecified number of integers, determines how many positive and negative values have been read, and computes the total and average of the input values (not counting zeros). Display the average as a floating-point number. Here are sample runs:



Problem 2 [2 marks]

Android Project name: w1_studentid_p2
Language: Kotlin

Write a program that lets the user enter the loan amount and loan period in number of years and displays the monthly and total payments for each interest rate starting from 5% to 8%, with an increment of 1/8.



Interest Rate	Monthly Payment	Total Payment
5.000	188.71	11,322.74
5.125	189.29	11,357.13
5.250	189.86	11,391.59
5.375	190.44	11,426.11
5.500	191.01	11,460.70
5.625	191.59	11,495.35
5.750	192.17	11,530.06
5.875	192.75	11,564.84
6.000	193.33	11,599.68
6.125	193.91	11,634.59
6.250	194.49	11,669.56
6.375	195.08	11,704.59
6.500	195.66	11,739.69
6.625	196.25	11,774.85
6.750	196.83	11,810.08
6.875	197.42	11,845.37
7.000	198.01	11,880.72
7.125	198.60	11,916.14
7.250	199.19	11,951.62
7.375	199.79	11,987.16
7.500	200.38	12,022.77
7.625	200.97	12,058.44
7.750	201.57	12,094.18
7.875	202.17	12,129.97
8.000	202.76	12,165.84

$$
\begin{aligned}
monthlyPayment &= \frac{loanAmount \times monthlyInterestRate}{1 - \frac{1}{(1 + monthlyInterestRate)^{numberOfYears \times 12}}} \\
totalPayment &= monthlyPayment \times numberOfYears \times 12
\end{aligned}
$$