SOFTEWARE APPLICATION PROGRAMMING
PRACTICAL SESSION 6

1. A company pays its salespeople a base salary plus commission. Each salesperson receives a fixed amount of $200 per week, plus a 9% commission on their gross sales for that week. For instance, if a salesperson has $5,000 in sales, their total pay would be $200 + (9% of $5,000) = $650.

   Write a Java program that ask for the weekly sales of each salesperson and calculates each salesperson's weekly salary based on their gross sales and the determine the number of salespeople who earned salaries in each of the following ranges (after truncating each salary to an integer):

   $200–$299
   $300–$399
   $400–$499
   $500–$599
   $600–$699
   $700–$799
   $800–$899
   $900–$999
   $1000 and above
2. Write a program that reads a string, reverse it and prints it to the console. For example: "introduction" -> "noitcudortni".
3. Write a program that checks whether the parentheses are placed correctly in an arithmetic expression. Example of expression with correctly placed brackets: ((a+b)/5-d). Example of an incorrect expression:)(a+b)).
4. Write a program that detects how many times a substring is contained in the text. For example, let's look for the substring "in" in the text:

We are living in a yellow submarine. We don't have anything else. Inside the submarine is very tight. So we are drinking all the day. We will move out of it in 5 days.

   The result is 9 occurrences
5. Write a program, which creates an array of 20 elements of type integer and initializes each of the elements with a value equals to the index of the element multiplied by 5. Print the elements to the console.
6. Write a program, which reads two arrays from the console and checks whether they are equal (two arrays are equal when they are of equal length and all of their elements, which have the same index, are equal).
7. Write a program, which reads from the console two integer numbers N and K (K<N) and array of N integers. Find those K consecutive elements in the array, which have maximal sum.
8. Write a program, which checks whether there is a subset of givenarray of N elements, which has a sum S. The numbers N, S and the array values are read from the console. Same number can be used many times. Example: {2, 1, 2, 4, 3, 5, 2, 6}, S = 14 -> yes (1 + 2 + 5 + 6 = 14)

9. Write a method that finds how many times certain number can be found in a given array. Write a program to test that the method works correctly.
10. Write a method that checks whether an element, from a certain position in an array is greater than its two neighbors. Test whether the method works correctly.