**Programs based on strings**

1. A hash algorithm uses rotation and fold shift methods to compute the address at which the user input has to be stored. Define a static method to perform rotation of the data by moving the least significant digit to the most significant bit position. Also define a non-static method to perform fold shift by dividing the rotated data into segments of length 2 and then add all the segments to get the hash address. If the sum has more than 2 digits, delete the most significant digit and the resulting number is the address. Invoke these methods from main( ) method.

Eg., If the data is 112286, after rotation it should be 611228 and after fold shift it should be 61 + 12 + 28=101 =01 (after deleting the most significant digit)

2. Consider a Java program containing a statement to invoke format( ) method for displaying the output. Write a program to verify the syntax correctness of the statement by checking for the following.

* + The number of format specifiers and arguments should match.
  + Datatype of the arguments should match the format specifiers used.

For example, if the input is similar to any of the three statements given below, the output should be “correct syntax” for the first two statements and it should be “wrong syntax” for the last statement.

1. System.out.format("sum is %d"+" avg is %f ", a,b);
2. System.out.format(" name is %s"+"sum is %d avg is %f ", s,a,b);
3. System.out.format("sum is %d"+" avg is %f ", b,a);

Assume you have a 2D String array storing all the variables used in the program and their datatypes as follows.

|  |  |  |  |
| --- | --- | --- | --- |
| a | B | s | x |
| int | Float | String | int |