Java module 1

Exercises Day 4

| 1 - Do while | Loan balance year after year |
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| Instructions | Write a program that calculates the remaining balance of a loan after each year until the loan is fully repaid. The user inputs the initial loan amount, the annual interest rate, and the yearly repayment amount. The program should use a do-while loop to subtract the yearly repayment from the loan balance, add the annual interest to the balance, and then print the remaining balance after each year. The loop continues until the loan is fully repaid or for a maximum of 10 years, whichever comes first. Assume simple interest for this calculation, not compound interest. |
| Expected output | Enter the initial loan amount:  >>>3000  Enter the annual interest rate (as a percentage):  >>>5  Enter the yearly repayment amount:  >>>1200  Remaining balance after year 1: 1950.0  Remaining balance after year 2: 847.5  Remaining balance after year 3: 0.0  The loan is fully repaid. |

| 2.1 - For | Multiplication table |
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| Instructions | Print the multiplication table for a number entered by the user up to 10. |
| Expected output | Enter a number between 1 and 10:  >>>4  4 x 1 = 4  4 x 2 = 8  4 x 3 = 12  4 x 4 = 16  4 x 5 = 20  4 x 6 = 24  4 x 7 = 28  4 x 8 = 32  4 x 9 = 36  4 x 10 = 40 |

| 2.2 - For | Count vowels |
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| Instructions | Determine and print the number of vowels that appear in the input entered by the user. |
| Expected output | Enter a sentence:  >>>Hello, my name is Ana.  The sentence has 7 vowels. |

| 2.3 - For | Factorial |
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| Instructions | Write a program that can calculate the factorial of a number  <https://en.wikipedia.org/wiki/Factorial>  Example: The factorial of 5 is 5\*4\*3\*2\*1=120 |
| Expected output | Enter a positive number:  >>>5  The factorial of 5 is 120 |

| 2.4 - For | Fibonacci |
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| Instructions | Write a program that can generate the Fibonacci sequence up to a certain number of terms.  <https://en.wikipedia.org/wiki/Fibonacci_sequence> |
| Expected output | Enter the number of terms:  >>>8  The Fibonacci sequence of 8 terms is 0 1 1 2 3 5 8 13 |