

Lab Assignment #01

2023 Spring SENG102

Question 1

Write Java program to print ‘Software Engineering’ on the screen and print “First Java lab” on a new line.

Sample output:

```
Software Engineering
First Java lab!
```

Question 2

Write a Java program to print the results of the following operations:

-10 + 38

85/5

12*9

49-76

102%8

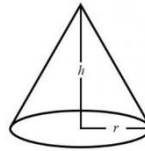
Sample output:

```
28
17
108
-27
6
```

Question 3

Write a Java program that asks the user to enter the radius and height of a cone and calculates its volume. (You should define PI as a double constant which is equal to 3.14)

$$V = (1/3)\pi r^2 h$$



Note 1: Radius and height values may be floating point numbers. Therefore, you may get these values from user by using *nextDouble()* method. Analyze the sample given below and write your codes accordingly.

Note 2: You must use casting conversion to print the volume of the cylinder as an integer.

```
//receive the value of radius
System.out.print("Please enter radius:");
radius=keyboard.nextDouble();
```

Sample output:

```
Please enter the radius: 5
Please enter the height: 6
The volume of the cone is 157
```

Question 4

Write a Java code that receives a String value of date in dd.mm.yyyy format from the user, and converts it into mm/dd/yyyy format.

```
Enter the date in dd.mm.yyyy format: 16.07.2000
The date you entered is 07/16/2000.
```

Question 5

Write a Java program Market.java which guides you to shop at a market. The program asks the user to enter the user's current balance in TL and reads it as an integer. Then, the program informs the user about the items that he/she can buy with this balance in price-ascending order (please check table).

Item	Price
Meat	70
Juice	19
Milk	22
Apples	16
Chicken	50

After showing the items, the program asks the user the item that will be bought and reduces his/her balance accordingly using the prices in the table. Analyze the sample program output given below; and implement the program printing in the same format.

Enter your balance: 55
You can buy meat, juice, milk, apples or chicken. Which one do you choose?: Meat
Your budget is not enough!

Enter your balance: 10
No items available for your budget.

Enter your balance: 60
You can buy meat, juice, milk, apples or chicken. Which one do you choose?: Chicken
Your new balance is 10. Enjoy!

Question 6

A university's grading system is given as follows:

- Grades 90-100 is AA
- Grades 80-89 is BB
- Grades 70-79 is CC
- Grades 60-69 is DD
- Grades 0-59 is FF

After receiving an grade between 0-100 from the user write a **switch** statement that prints out, on a line by itself, the appropriate letter grade from the above list based on the grade.

Enter your grade: 75
Your letter grade is: CC

Enter your grade: 50
Your letter grade is: FF

Question 7

You will write a Java program using **do-while** loop. The program picks a letter and asks user to guess it. (You will assume that the letter picked by the program is "m".) Program prints a message saying whether user found the letter (along with the number of valid guesses) or user should go forward or backward in the alphabet. (Use the English alphabet and only lowercase letters.)

I have guessed a letter in the English alphabet.
Guess the letter: c
Go forward in the alphabet
Guess the letter: t
Go backward in the alphabet
Guess the letter: g
Go forward in the alphabet
Guess the letter: m
m is correct! You guessed correctly after 4 tries!

Question 8

Write a Java program that takes a word and an integer value **n** from the user. The entered word will then be copied “n” times and concatenated.

Enter a word: java
Enter an integer: 3
javajavajava

Enter a word: key
Enter an integer: 6
keykeykeykeykeykey