Lab: Conditional Statements Advanced

Problems for exercise and homework for the "**Programming Basics**" course @ SoftUni Global.

Submit your solutions to the **SoftUni Judge** system at: https://judge.softuni.org/Contests/3691
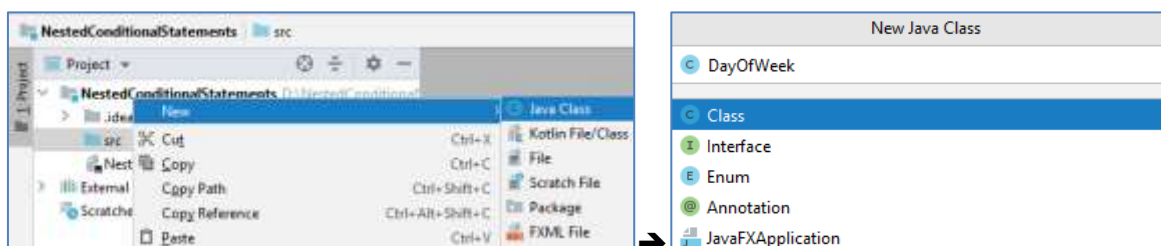
1. Day of Week

Write a program that reads an **integer** entered by the user and prints a **day of the week** within [1 ... 7] or prints "**Error**" if the number entered is **invalid**.

Sample Input and Output

Input	Output
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday
7	Sunday
-1	Error

Hints and Guidelines

1. Create a **new** class in an existing IntelliJ project. Right-click on the **'src'** folder. Select [New] → [Class]:

You already have a project with one console application in it. It remains to write the code to solve the problem.

2. Create a main method and write the solution of the problem. You can help yourself with the code from the pictures below:

```java
public class DayOfWeek {
    public static void main(String[] args) {
        // TODO: Write your code here

    }
}
```

3. Read an integer from the console:

```java
Scanner scan = new Scanner(System.in);
int number = Integer.parseInt(scan.nextLine());
```

4. Print the day of the week according to the number entered. If it is invalid, print "**Error**".

```
switch (number) {
    case 1:
        System.out.println("Monday");
        break;
    case 2:
        System.out.println("Tuesday");
        break;
    case 3:
        System.out.println("Wednesday");
        break;
    // TODO: check the other cases
    default:
        System.out.println("Error");
        break;
}
```

Testing in the Judge System

Test the solution to this problem here: https://judge.softuni.org/Contests/Compete/Index/3691#0

2. Weekend or Working Day

Write a program that reads the day of the week (**string**) - entered by the user. If the day is a working day, it prints on the console - "**Working day**", if it is a day off - "**Weekend**". If any text other than the day of the week is entered, print "**Error**".

Sample Input and Output

Input	Output
Monday	Working day

Input	Output
Sunday	Weekend

Input	Output
April	Error

Hints and Guidelines

1. Read the day of the week (**string**) from the console:

```
Scanner scanner = new Scanner(System.in);
String day = scanner.nextLine();
```

2. Print a working day or day off, depending on the day you entered. If the day is invalid, print it "**Error**":

```
switch (day) {
    case "Monday":
    case "Tuesday":
    case "Wednesday":
    case "Thursday":
    case "Friday":
        System.out.println("Working day");
        break;
    case "Saturday":
    case "Sunday":
        System.out.println("Weekend");
        break;
    default:
        System.out.println("Error");
        break;
}
```

Testing in the Judge System

Test the solution to this problem here: https://judge.softuni.org/Contests/Compete/Index/3691#1

3. Animal Type

Write a program that prints the species of the animal according to its name entered by the user.

- **dog** -> `mammal`
- **crocodile, tortoise, snake** -> `reptile`
- **others** -> `unknown`

Sample Input and Output

Input	Output
dog	mammal
snake	reptile
cat	unknown

Hints and Guidelines

1. Read the input:

```
Scanner scan = new Scanner(System.in);
String animal = scan.nextLine();
```

2. Check the specie. If it is invalid, print "**unknown**".

```
switch (animal) {
    case "dog":
        System.out.println("mammal");
        break;
    case "crocodile":
    case "tortoise":
    case "snake":
        System.out.println("reptile");
        break;
    default:
        System.out.println("unknown");
        break;
}
```

Testing in the Judge System

Test the solution to this problem here: https://judge.softuni.org/Contests/Compete/Index/3691#2

4. Personal Titles

Write a console program that reads the **age** (a floating-point number) and **gender** ("m" or "f") entered by the user and prints an address from the following:

- "**Mr.**" - a man (gender "**m**") of 16 years or more
- "**Master**" - a boy (gender "**m**") under 16 years old
- "**Ms.**" – a woman (gender "**f**") of 16 years or more
- "**Miss**" – a girl (gender "**f**") under 16 years old

Sample Input and Output

Input	Output
12 f	Miss

Input	Output
17 m	Mr.

Input	Output
25 f	Ms.

Input	Output
13.5 m	Master

Hints and Guidelines

1. Read the input from the console. First read a **floating-point number**, "**age**", and the next line a **string** for "**gender**".

```
double age = Double.parseDouble(scan.nextLine());
String gender = scan.nextLine();
```

2. Perform a gender check using the "**equals**" method, with a "**true**" result, and make a conditional statement for the age and print the desired message on the console.

```java
if ("m".equals(gender)) {
    if (age >= 16) {
        System.out.println("Mr.");
    }else {
        System.out.println("Master");
    }
}else if ("f".equals(gender)){
    if (age >= 16) {
        System.out.println("Ms.");
    }else {
        System.out.println("Miss");
    }
}
```

3. **Start** the program with [Ctrl + Shift + F10] and **test** it with different input values:

```
12
f
Miss

Process finished with exit code 0
```

```
17
m
Mr.

Process finished with exit code 0
```

4. You must receive **100 points** (completely correct solution):

01. Personal Titles

```java
6
7        double age = Double.parseDouble(scanner.nextLine());
8        String gender = scanner.nextLine();
9
10       if ("m".equals(gender)) {
11           if (age >= 16) {
12               System.out.println("Mr.");
13           } else {
14               System.out.println("Master");
15           }
16       } else if ("f".equals(gender)){
17           if (age >= 16) {
18               System.out.println("Ms.");
19           } else {
20               System.out.println("Miss");
21       }
```

Allowed working time: 0.200 sec.
Allowed memory: 16.00 MB
Size limit: 16.00 KB
Checker: Case-Insensitive

Java code   ▼   Submit

Testing in the Judge System

Test the solution to this problem here: https://judge.softuni.org/Contests/Compete/Index/3691#3

5. Small Shop

An enterprising person opens **neighborhood shops** in **several cities** and sells at **different prices**:

city / product	coffee	water	beer	sweets	peanuts
London	0.50	0.80	1.20	1.45	1.60
Rome	0.40	0.70	1.15	1.30	1.50
Paris	0.45	0.70	1.10	1.35	1.55

Write a program that reads **product** (string), **city** (string), and **quantity** (a floating-point number) entered by the user and calculates and prints **how much** the corresponding quantity of the selected product costs in the specified city.

Sample Input and Output

Input	Output
coffee Paris 2	0.9

Input	Output
peanuts Rome 1	1.5

Input	Output
beer London 3	3.6

Input	Output
water Rome 2	1.4

Input	Output
sweets London 2.23	3.2335

Testing in the Judge System

Test the solution to this problem here: https://judge.softuni.org/Contests/Compete/Index/3691#4

6. Number in Range

Write a program that checks if the number entered by the user is in the range [-100, 100] and is different from 0 and print "**Yes**" if it meets the conditions, or "**No**" if it is outside the range.

Sample Input and Output

Input	Output
-25	Yes

Input	Output
0	No

Input	Output
25	Yes

Testing in the Judge System

Test the solution to this problem here: https://judge.softuni.org/Contests/Compete/Index/3691#5

7. Working Hours

Write a program that reads an hour of the day (**integer**) and a day of the week (**string**) - entered by the user and checks whether the company's office is open, the office hours are from **10:00**(10 am) to **18:00**(6 pm), from **Monday** to **Saturday** including.

Sample Input and Output

Input	Output
11 Monday	open

Input	Output
19 Friday	closed

Input	Output
11 Sunday	closed

Testing in the Judge System

Test the solution to this problem here: https://judge.softuni.org/Contests/Compete/Index/3691#6

8. Cinema Ticket

Write a program that reads the day of the week (**string**) - entered by the user and prints on the console the price of a movie ticket according to the day of the week:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
12	12	14	14	12	16	16

Sample Input and Output

Input	Output
Monday	12

Input	Output
Friday	12

Input	Output
Sunday	16

Testing in the Judge System

Test the solution to this problem here: https://judge.softuni.org/Contests/Compete/Index/3691#7

9. Fruit or Vegetable

Write a program that reads a **product name** entered by the user and checks if it is a **fruit** or **vegetable**.

- The fruits are **banana**, **apple**, **kiwi**, **cherry**, **lemon,** and **grapes**
- The vegetables "**vegetable**" are **tomato**, **cucumber**, **pepper,** and **carrot**
- Everything else is "**unknown**"

Print "**fruit**", "**vegetable**" or "**unknown**" depending to the introduced product.

Sample Input and Output

Input	Output
banana	fruit

Input	Output
apple	fruit

Input	Output
tomato	vegetable

Input	Output
water	unknown

Testing in the Judge System

Test the solution to this problem here: https://judge.softuni.org/Contests/Compete/Index/3691#8

10. Invalid Number

A **number is valid** if it is in the range [**100… 200**] or is **0**. Write a program that reads an **integer** entered by the user and print "**invalid**" if the number entered **is not valid**.

Sample Input and Output

Input	Output
75	invalid

Input	Output
150	*(no output)*

Input	Output
220	invalid

Input	Output
199	*(no output)*

Input	Output
-1	invalid

Input	Output
100	*(no output)*

Input	Output
200	*(no output)*

Input	Output
0	*(no output)*

11. Fruit Shop

Fruit shop on **weekdays** works at the following **prices**:

fruit	banana	apple	orange	grapefruit	kiwi	pineapple	grapes
price	2.50	1.20	0.85	1.45	2.70	5.50	3.85

On **Saturdays** and **Sundays**, the store is works at higher **prices**:

fruit	banana	apple	orange	grapefruit	kiwi	pineapple	grapes
price	2.70	1.25	0.90	1.60	3.00	5.60	4.20

Write a program that reads from the console **fruit** (banana / apple / orange / grapefruit / kiwi / pineapple / grapes), **day of the week** (Monday / Tuesday / Wednesday / Thursday / Friday / Saturday / Sunday), and **quantity** (a floating-point number), entered from the customer, and calculates the sum according to the **prices** in the tables above. In case of an invalid day of the week or invalid fruit name, print "**error**".

Sample Input and Output

Input	Output
apple Tuesday 2	2.40

Input	Output
orange Sunday 3	2.70

Input	Output
kiwi Monday 2.5	6.75

Input	Output
grapes Saturday 0.5	2.10

Input	Output
tomato Monday 0.5	error

12. Trade Commissions

The company gives the following **commissions** to its merchants according to the **city** in which they operate and the volume of sales:

City	0 ≤ s ≤ 500	500 < s ≤ 1 000	1 000 < s ≤ 10 000	s > 10 000
London	5%	7%	8%	12%
Paris	4.5%	7.5%	10%	13%
Rome	5.5%	8%	12%	14.5%

Write a **console program** that reads the city name (**string**) and sales volume (**a floating-point number**) entered by the user and calculates the percentage of the trade commission according to the table above. Display the result formatted to 2 digits after the decimal point. In case of **invalid** city or sales volume (negative number) print "**error**".

Sample Input and Output

Input	Output
London 1500	120.00

Input	Output
Rome 499.99	27.50

Input	Output
Paris 3874.50	387.45

Input	Output
InvalidName -50	error