Lab: Basic Syntax, Conditional Statements and Loops

Problems for exercises and homework for the "Technology Fundamentals" course @ SoftUni.

You can check your solutions in Judge.

1. Student Information

You will be given 3 lines of input – student name, age and average grade. Your task is to print all the info about the student in the following format: "**`Name: {student name}, Age: {student age}, Grade: {student grade}`**".

Examples

Input	Output

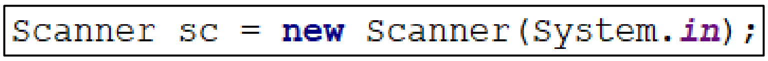
`John`
`15`
`5.40`
	`Name: John, Age: 15, Grade: 5.40`

`Steve`
`16`
`2.50`
	`Name: Steve, Age: 16, Grade: 2.50`

`Marry`
`12`
`6.00`
	`Name: Marry, Age: 12, Grade: 6.00`

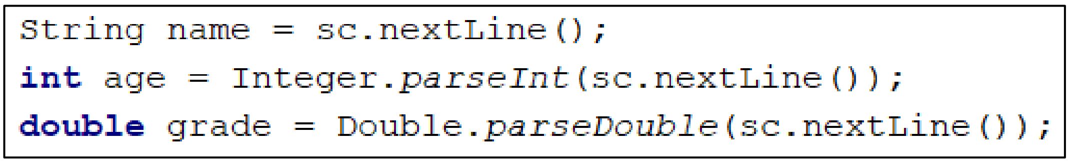
Solution

First, we need a scanner, which we can use to read data from the console.



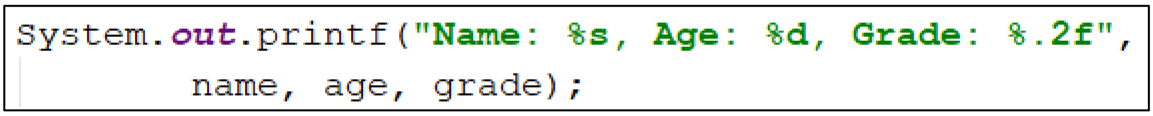
```java
Scanner sc = new Scanner(System.in);
```

Read all the information – student name, age and grade



```java
String name = sc.nextLine();
int age = Integer.parseInt(sc.nextLine());
double grade = Double.parseDouble(sc.nextLine());
```

Finally, we need to print the information in the specified format



```java
System.out.printf("Name: %s, Age: %d, Grade: %.2f",
        name, age, grade);
```

2. Passed

Write a program, which takes as an input a **grade** and prints "**Passed!**" if the grade is **equal or more than 3.00**.

Input

The **input** comes as a single floating-point number.

Output

The **output** is either "**Passed!**" if the grade is **equal or more than 3.00**, otherwise you should print nothing.

Examples

Input	Output
`5.32`	`Passed!`

Input	Output
`2.34`	*`(no output)`*

3. Passed or Failed

Modify the above program, so it will print "**Failed**!" if the grade is **lower than 3.00**.

Input

The **input** comes as a single double number.

Output

The **output** is either "**Passed**!" if the grade is **more than 2.99**, otherwise you should print "**Failed**!".

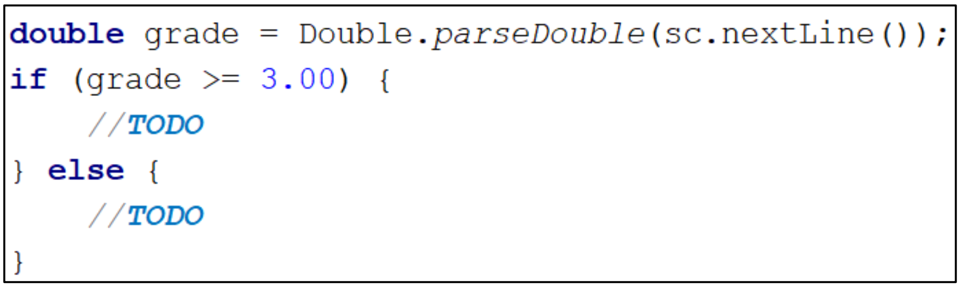
Examples

Input	Output
`5.32`	`Passed!`

Input	Output
`2.36`	`Failed!`

Hint

We need to take **floating-point** number from the console. After that print in the **`else`** statement the appropriate message.



```java
double grade = Double.parseDouble(sc.nextLine());
if (grade >= 3.00) {
    //TODO
} else {
    //TODO
}
```

4. Back in 30 Minutes

Every time Stamat tries to pay his bills he sees on the cash desk the sign: **"I will be back in 30 minutes"**. One day Stamat was sick of waiting and decided he needs a program, which **prints the time** after **30 minutes**. That way he won't have to wait on the desk and come at the appropriate time. He gave the assignment to you, so you have to do it.

Input

The **input** will be on two lines. On the **first line**, you will receive the **hours** and on the **second** you will receive the **minutes**.

Output

Print on the console the time after **30** minutes. The result should be in format "**hh:mm**". The **hours** have **one or two numbers** and the **minutes** have always **two numbers (with leading zero)**.

Constraints

- The **hours** will be between **0 and 23**.
- The **minutes** will be between **0 and 59**.

Examples

Input	Output
1 46	2:16

Input	Output
0 01	0:31

Input	Output
23 59	0:29

Input	Output
11 08	11:38

Input	Output
11 32	12:02

Hints

- Add 30 minutes to the initial minutes, which you receive from the console. If the minutes are more than 59 – increase the hours with 1 and decrease the minutes with 60. The same way check if the hours are more than 23. When you print check for leading zero.

5. Month Printer

Write a program, which takes an **integer** from the console and prints the corresponding **month**. If the number **is more than 12** or **less than 1** print "**Error!**".

Input

You will receive a **single integer** on a **single line**.

Output

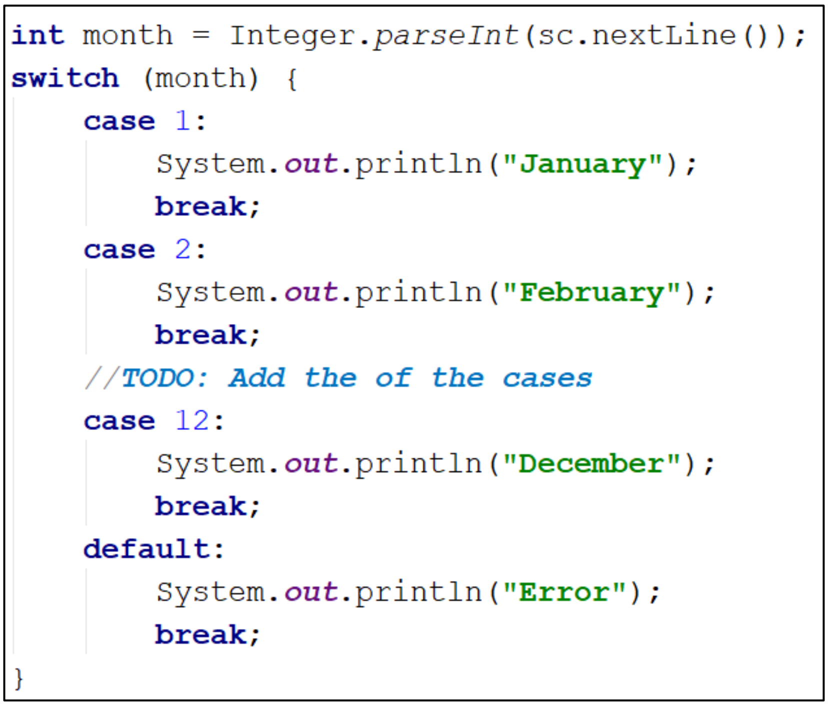
If the number is within the boundaries print the corresponding month, otherwise print "**Error!**".

Examples

Input	Output
2	February

Input	Output
13	Error!

Hints



```
int month = Integer.parseInt(sc.nextLine());
switch (month) {
    case 1:
        System.out.println("January");
        break;
    case 2:
        System.out.println("February");
        break;
    //TODO: Add the of the cases
    case 12:
        System.out.println("December");
        break;
    default:
        System.out.println("Error");
        break;
}
```

6. Foreign Languages

Write a program, which prints the language, that a given country speaks. You can receive only the following combinations: English **is spoken** in England and USA; Spanish **is spoken** in Spain, Argentina and Mexico; for the others**,** we should print "unknown".

Input

You will receive a **single country name** on a **single line**.

Output

Print the **language**, which the country **speaks**, or if it is **unknown** for your program, print **"unknown"**.

Examples

Input	Output
USA	English

Input	Output
Germany	unknown

Hint

Think how you can **merge** multiple cases, in order to **avoid** writing more code than you need to.

7. Theatre Promotions

A theatre **is doing a ticket sale**, but they need a program **to** calculate the price of a single ticket. If the given age does not fit one of the categories**,** you should print "Error!". You can see the prices **in** the table below:

Day / Age	0 <= age <= 18	18 < age <= 64	64 < age <= 122
Weekday	12$	18$	12$
Weekend	15$	20$	15$

Holiday	5$	12$	10$

Input

The input comes in **two lines**. On the **first** line, you will receive the **type of day**. On the **second** – the **age** of the person.

Output

Print the price of the ticket according to the table, or "**Error!**" if the age is not in the table.

Constraints

- The age will be in the interval **[-1000…1000]**.
- The type of day will **always be valid**.

Examples

Input	Output
Weekday 42	18$

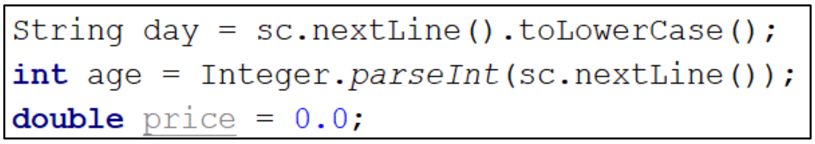
Input	Output
Holiday -12	Error!

Input	Output
Holiday 15	5$

Input	Output
Weekend 122	15$

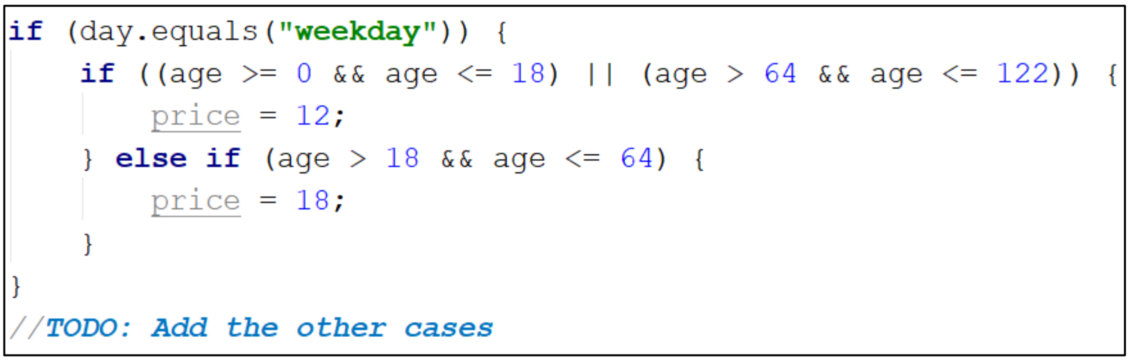
Hints

We need to read **two** lines. **First** one will be the **type of day**. We will convert it to **lower case** letters with the method "**toLowerCase()**". After that, we will read the **age** of the person and declare a **variable** – **price**, which we will use to set the price of the ticket.



```
String day = sc.nextLine().toLowerCase();
int age = Integer.parseInt(sc.nextLine());
double price = 0.0;
```

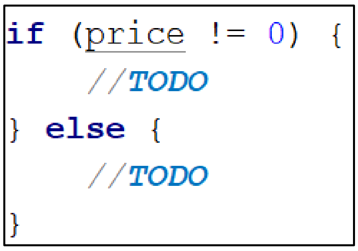
For every **type of day**, we will need to add **different cases** to check the **age** of the person and **set the price**. Some of the **age groups** have **equal prices** for the **same type** of day. This means we can use **logical operators** to **merge some of the conditions**.



```
if (day.equals("weekday")) {
    if ((age >= 0 && age <= 18) || (age > 64 && age <= 122)) {
        price = 12;
    } else if (age > 18 && age <= 64) {
        price = 18;
    }
}
//TODO: Add the other cases
```

Think **where** and **how** you can use **logical operators** for the **other cases**.

We can check if the **price has a value** different, than the **initial** one. It it does, that means we got a **valid combination of day and age** and the price of the ticket is saved in the **price** variable. If the **price** has a **value of 0**, then none of the cases got hit, therefore we have to **print the error message**.

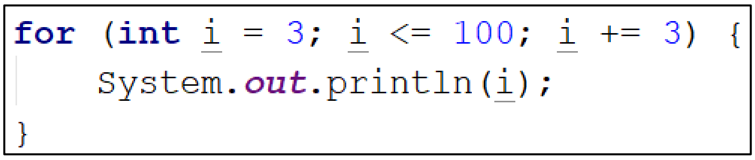


```java
if (price != 0) {
    //TODO
} else {
    //TODO
}
```

8. Divisible by 3

Write a program, which prints all the numbers from **1 to 100**, which are **divisible by 3**. You have to use a single **for** loop. The program should not receive input.

Solution



```java
for (int i = 3; i <= 100; i += 3) {
    System.out.println(i);
}
```

9. Sum of Odd Numbers

Write a program that prints the next **n odd numbers** (starting from 1) and on the **last row** prints the **sum of them**.

Input

On the first line, you will receive a number – **n**. This number shows how many **odd numbers** you should print.

Output

Print the next **n** odd numbers, starting from **1**, separated by **new lines**. On the last line, print the **sum** of these numbers.

Constraints

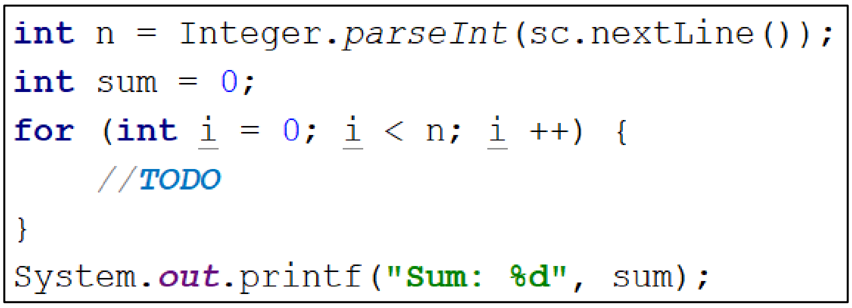
- **n** will be in the interval **[1…100]**

Examples

Input	Output
5	1 3 5 7 9 Sum: 25

Input	Output
3	1 3 5 Sum: 9

Hints



```
int n = Integer.parseInt(sc.nextLine());
int sum = 0;
for (int i = 0; i < n; i ++) {
    //TODO
}
System.out.printf("Sum: %d", sum);
```

10. Multiplication Table

You will receive an **integer** as an input from the console. Print the **10 times table** for this integer. See the examples below for more information.

Output

Print every row of the table in the following format:

`{theInteger} X {times} = {product}`

Constraints

- The integer will be in the interval **[1…100]**

Examples

Input	Output
5	5 X 1 = 5 5 X 2 = 10 5 X 3 = 15 5 X 4 = 20 5 X 5 = 25 5 X 6 = 30 5 X 7 = 35 5 X 8 = 40 5 X 9 = 45 5 X 10 = 50

Input	Output
2	2 X 1 = 2 2 X 2 = 4 2 X 3 = 6 2 X 4 = 8 2 X 5 = 10 2 X 6 = 12 2 X 7 = 14 2 X 8 = 16 2 X 9 = 18 2 X 10 = 20

11. Multiplication Table 2.0

Rewrite you program so it can receive the **multiplier from the console**. Print the **table from the given multiplier to 10**. If the given multiplier is **more than 10** - print only one row with the **integer**, the given **multiplier** and the **product**. See the examples below for more information.

Output

Print every row of the table in the following format:

`{theInteger} X {times} = {product}`

Constraints

- The integer will be in the interval **[1…100]**

Examples

Input	Output
5 1	5 X 1 = 5 5 X 2 = 10 5 X 3 = 15 5 X 4 = 20 5 X 5 = 25 5 X 6 = 30 5 X 7 = 35 5 X 8 = 40 5 X 9 = 45 5 X 10 = 50

Input	Output
2 5	2 X 5 = 10 2 X 6 = 12 2 X 7 = 14 2 X 8 = 16 2 X 9 = 18 2 X 10 = 20

Input	Output
2 14	2 X 14 = 28

12. Even Number

Take as an input an even number and **print its absolute value**. If the number is odd, print "Please write an even number." and continue reading numbers.

Examples

Input	Output
1 3 6	Please write an even number. Please write an even number. The number is: 6

Input	Output
-6	The number is: 6

13. Refactor Sum of Odd Numbers

You are assigned to **find and fix the bugs** in an existing piece of code, using the **debugger**. You should trace the program execution to find the lines of code that produce incorrect or unexpected results.

You are given a program (existing source code) that prints the next **n odd numbers** (starting from 1) and on the **last row** prints the **sum of them**.

Examples

Input	Output
5	1 3 5 7 9 Sum: 25

Input	Output
3	1 3 5 Sum: 9

SumOddNumbers.java

```
Scanner sc = new Scanner(System.in);
int n = Integer.parseInt(sc.nextLine());
int sum = 1;
for (int i = 0; i <= n; i++) {
    System.out.print(2 * i + 1);
    sum += 2 * i;
}
System.out.printf("Sum: %d%n", sum);
```