Lab: Conditional Statements and Loops

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

You can check your solutions here: https://judge.softuni.bg/Contests/563

Problem 1. 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)*

Solution

We need to take as an input a floating-point number from the console. We will use **`double.Parse()`** to convert **string** to **double**, which we receive from **`Console.ReadLine()`**. After that we compare the grade with **3.00** and prints the result **only if** the condition returns **true**.

```
var grade = double.Parse(Console.ReadLine())
if (grade >= 3.00)
{
    Console.WriteLine("Passed!");
}
```

Problem 2. 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**!".

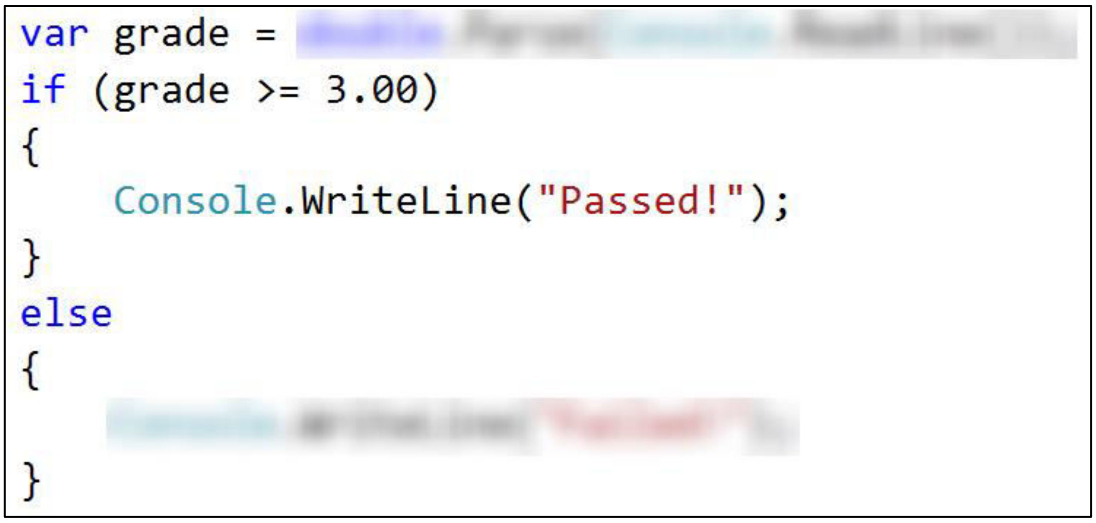
Examples

Input	Output
5.32	Passed!

Input	Output
2.36	Failed!

Solution

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



```
var grade = [redacted]
if (grade >= 3.00)
{
    Console.WriteLine("Passed!");
}
else
{
    [redacted]
}
```

Problem 3. 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.

Problem 4. 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!

Solution

```
var day = [redacted]
switch (day)
{
    case 1:
        Console.WriteLine("January");
        break;
    case 2:
        Console.WriteLine("February");
        break;
    // Add the rest of the cases
    case 12:
        Console.WriteLine("December");
        break;
    default:
        Console.WriteLine("Error!");
        break;
}
```

Problem 5. 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.

Problem 6. 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 <= 16	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$`

Solution

Step 1. Read the Input

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 “**`ToLower()`**”. 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.

```
var day = Console.ReadLine().ToLower();
var age = int.Parse(Console.ReadLine());
var price = 0;
```

Step 2. Add `if-else` Statements for the Different Types of Day

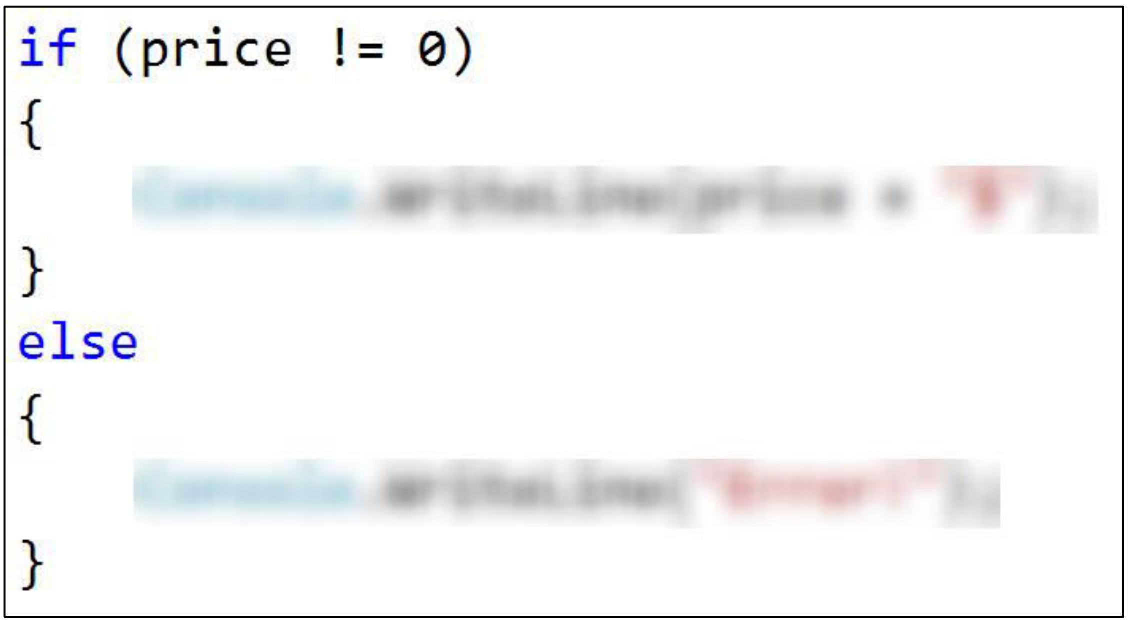
For every **type of day**, we will need to add **different cases** to check the **age** of the person and **set the price**. Some of the **age groups** have **equal prices** for the **same type** of day. This means we can use **logical operators** to **merge some of the conditions**.

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

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

Step 3. Print the result

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**.



```
if (price != 0)
{
    [redacted]
}
else
{
    [redacted]
}
```

Problem 7. 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

```
for (var i = 3; i <= 100; i += 3)
{
    Console.WriteLine(i);
}
```

Problem 8. 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

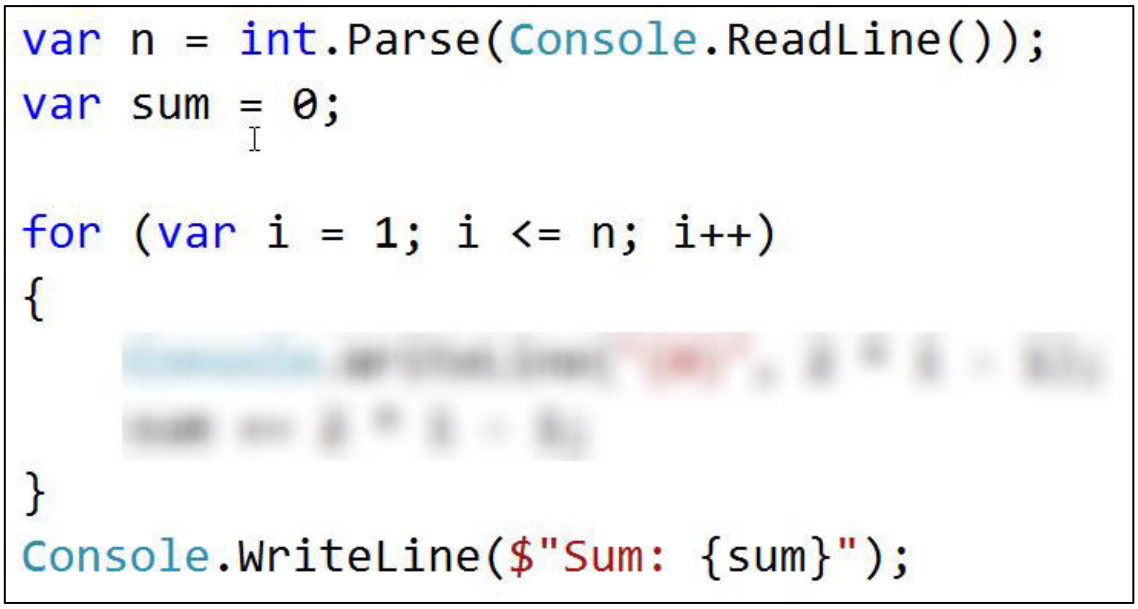
- **n** will be in the interval **[1…100]**

Examples

Input	Output
5	1 3 5 7 9 Sum: 25

Input	Output
3	1 3 5 Sum: 9

Solution



```
var n = int.Parse(Console.ReadLine());
var sum = 0;

for (var i = 1; i <= n; i++)
{
    [redacted]
}
Console.WriteLine($"Sum: {sum}");
```

Problem 9. 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

Problem 10. 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

Problem 11. Odd Number

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

Input

You will receive even integers until you receive an odd number.

Output

Print **"Please write an odd number."** if the received number is even. If the number is odd – **"The number is: {number}"**.

Constraints

- You will receive maximum 10 numbers
- The numbers will be in the interval **[-1000…1000]**

Examples

Input	Output
2 4 5	Please write an odd number. Please write an odd number. The number is: 5

Input	Output
-7	The number is: 7

Problem 12. Number checker

Write a program, which reads an input from the console and prints **"It is a number."** if it's a **number**. If it is **not** write **"Invalid input!"**

Input

You will receive a single line of input.

Output

Print one of the messages, but without throwing an exception.

Examples

Input	Output
`5`	`It is a number.`

Input	Output
`five`	`Invalid input!`

Hints

You can use a **`try-catch`** block to prevent throwing an exception.