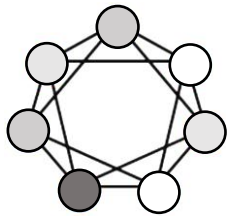


Tutorial 1

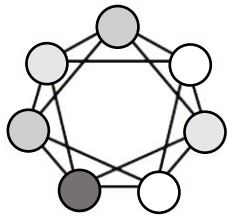
Shu Wang

2024/1/17

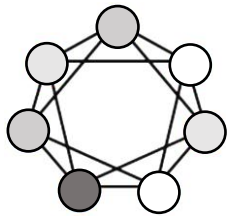
How to write a Java program

Let's see the general structure of a java code

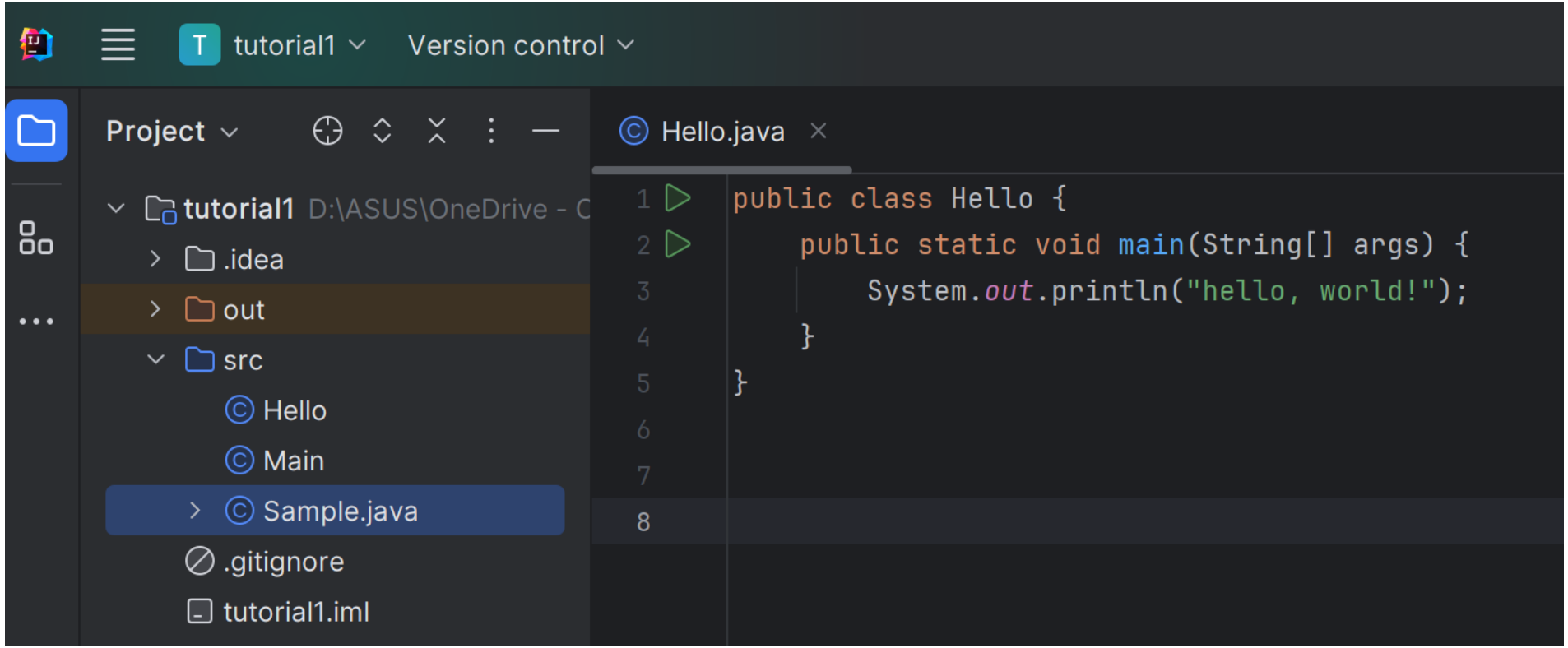
```java
import java.util.*;

public class Sample { // define a main class
    public static void main(String[] args) { // main function
        /* your code here */
    }
    public static void my_fun(int a1, float a2, double a3) {  }
}

class MyClass { // a self-defined class
    public int num_1;
    private double num_2;

    MyClass() { }
    public double getNum2() { return num_2; }
    public void setNum2(double new_val) { num_2 = new_val; }
}
```



```java
import java.util.*; // import statement: import every class in java.util package

// define a main class:
// the class should be public and the class name
// should be the same as the corresponding file name
public class Sample {
    // there should be a `public` and `static` main function inside the main class
    public static void main(String[] args) {
        /* your code here */
    }

    // If you define new functions used in the main function,
    // state them as `static` function
    // NOTE: java is statically typed,
    //      so be sure to decare the return type / classes and argument types / classes.
    public static void my_fun(int a1, float a2, double a3) {  }
}

// If you need self-defined classes,
// please define it as below.
// NOTE: self-defined classes should not be declared as 'public'
class MyClass {

    // attributes
    public int num_1;
    private double num_2;

    // initialization
    MyClass() { }

    // methods (here set and get, for example)
    public double getNum2() { return num_2; }
    public void setNum2(double new_val) { num_2 = new_val;}
}
```



Sample Program: Hello World

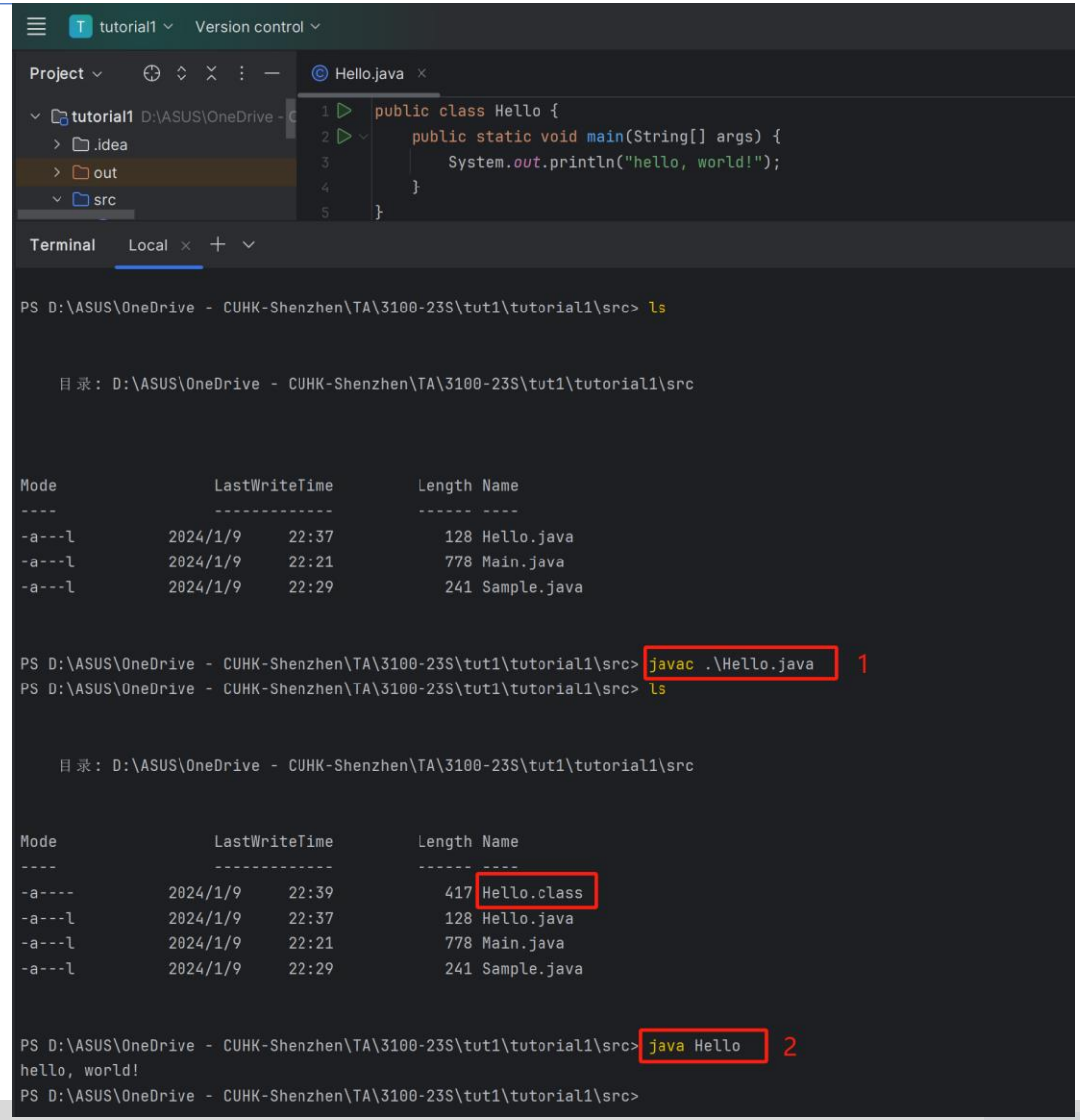


Compile & Run your Java program using command line

Take “Hello.java” as example

– (commands also work on MacOS)

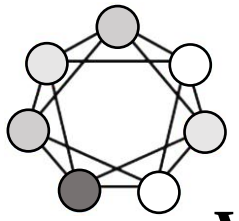
1. Compile and generate the “Hello.class” file.
2. Run your code



Compile & Run your Java program using command line

Alternative: (use when the program contains one file only)

```
Terminal    Local ×  +  ⌄

PS D:\ASUS\OneDrive - CUHK-Shenzhen\TA\3100-23S\tut1\tutorial1\src\tmp> ls


    目录: D:\ASUS\OneDrive - CUHK-Shenzhen\TA\3100-23S\tut1\tutorial1\src\tmp


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a---l          2024/1/9     22:37            128 Hello.java


PS D:\ASUS\OneDrive - CUHK-Shenzhen\TA\3100-23S\tut1\tutorial1\src\tmp> java .\Hello.java
hello, world!
```



CUHKSZ Online Judge

Website [Campus only] http://oj.cuhk.edu.cn

Why use the OJ?

- Evaluate the coding assignments
- Easily get the feedback (both for you and TA)
- Enjoy programming

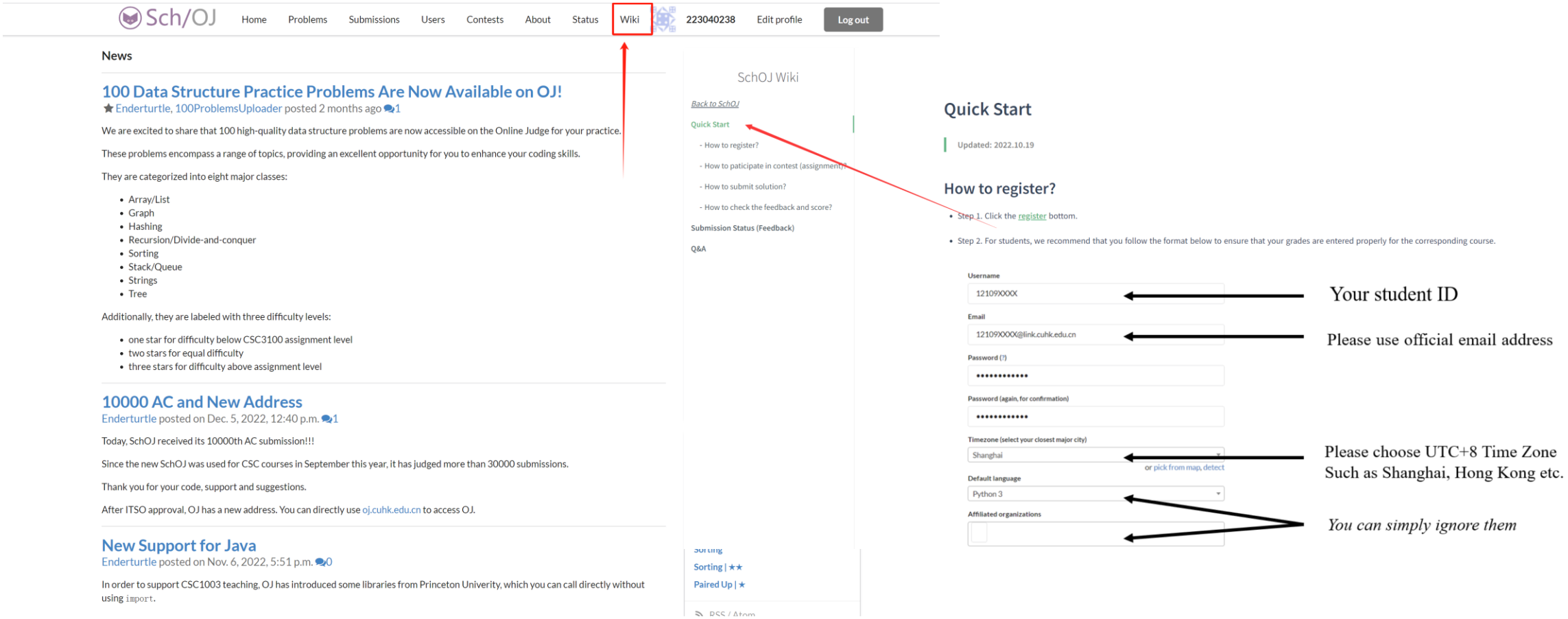
When grading assignments, the OJ only collects the score from the last submission**.**

PS: Remember to submit your highest-scoring program as the final submission.

OJ Quick Start

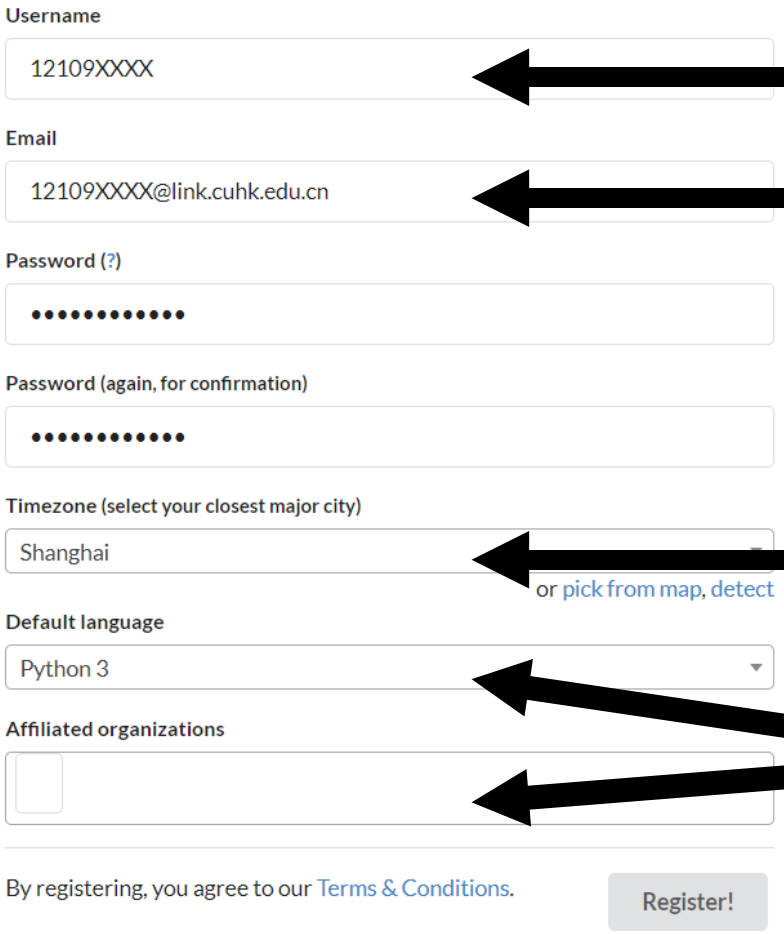
Please carefully read the wiki -- http://oj.cuhk.edu.cn/wiki#/quick-start

Wrong steps can affect your score



Register

oj.cuhk.edu.cn/accounts/register/



Your student ID

Please use official email address

Incorrect username may cause TA to be unable to get your score.

Please choose UTC+8 Time Zone Such as Shanghai, Hong Kong etc.

You can simply ignore them

Activate your CUHKSZ OJ account

将消息翻译为 | 始终不翻译 英语

Tianci Hou (SDS, 121090184)

收件人: [redacted]

周日 2022/9/4 14:31

Click it !

Thanks for registering on the SchOJ! We're glad to have you.

The last step is activating your account. Please activate your CUHKSZ OJ account in the next 7 days.

Please click on the following link to activate your account:

http://10.26.200.13/accounts/activate/[redacted]

Alternatively, you can reply to this message to activate your account. Your reply must keep the following text intact for this to work:

[redacted]

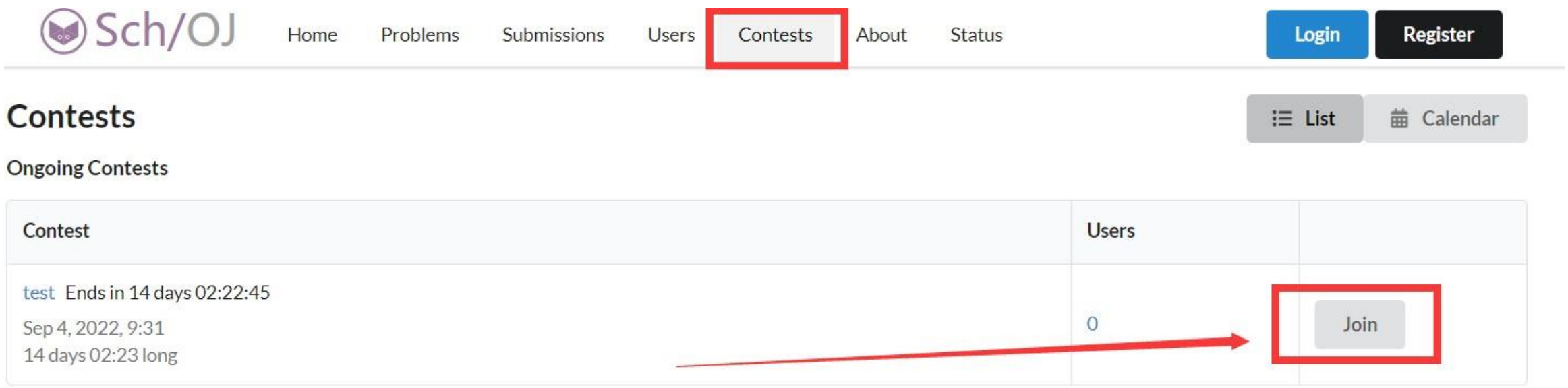
See you soon!
If you have problems activating your account, feel free to send us an email at oj@cuhk.edu.cn.

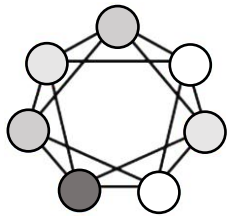
答复 转发

Test

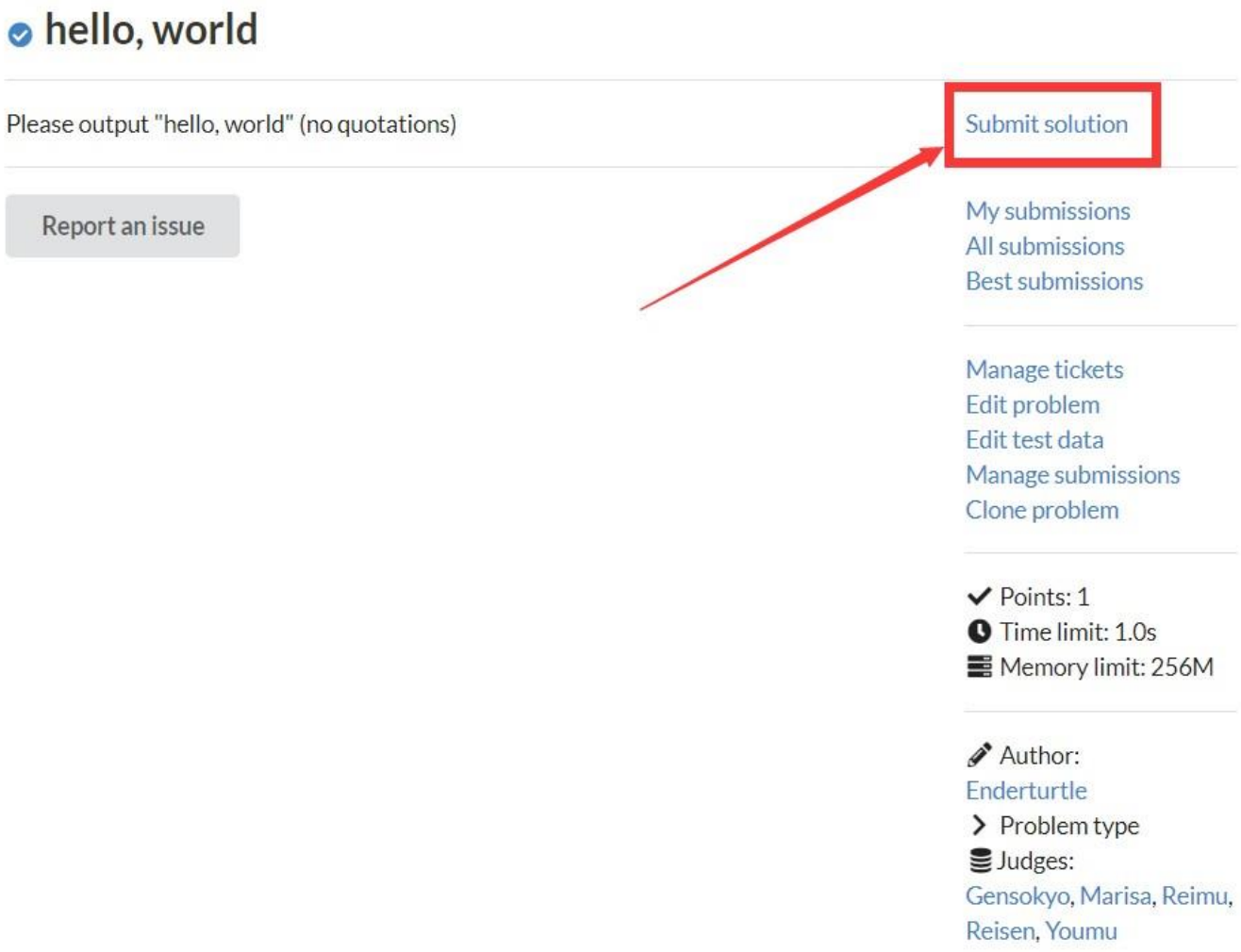
Now please join the contest to test.

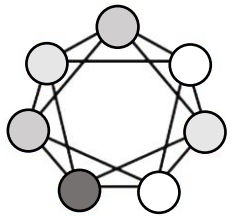
http://oj.cuhk.edu.cn/contest/testcontest





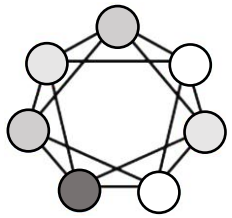
hello, world


hello, world
Please output "hello, world" (no quotations)
Report an issue
Submit solution
My submissions
All submissions
Best submissions
Manage tickets
Edit problem
Edit test data
Manage submissions
Clone problem
Points: 1
Time limit: 1.0s
Memory limit: 256M
Author:
Enderturtle
Problem type
Judges:
Gensokyo, Marisa, Reimu, Reisen, Youmu



Solution

```java
public class Hello {
    public static void main(String[] args) {
        System.out.println("hello, world");
    }
}
```



A+B problem

A+B problem

Description

A+B problem

Input

The input is in two lines. The first line contains the value of integer a $(0 < a < 10)$ and the second line contains the value of integer b ($0 < b < 10$)

Output

The output is a line containing the value of $a + b$

Sample input

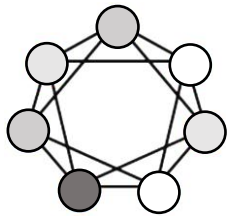
```
1
2
```

Copy

Sample output

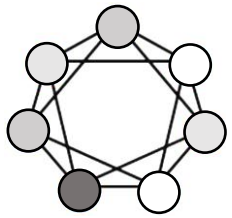
```
3
```

Copy



Solution

```java
import java.util.*;
public class AplusB {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        int a = input.nextInt();
        int b = input.nextInt();
        input.close();
        System.out.println(a + b);
    }
}
```



Fibonacci sequence

Fibonacci sequence

Description

Fibonacci sequence.

Fibonacci: $f(0) = 1\ f(1) = 1\ f(n) = f(n-1) + f(n-2)\ n \geq 2$

Since $f(n)$ can be really big, so you only need to output $f(n)\ mod\ 998244353$

Input

The input is an integer n $(0 \leq n \leq 1000)$.

Output

The output is a line containing the value of $f(n)\ mod\ 998244353$

Sample input

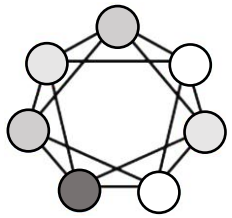
```
4
```

Copy

Sample output

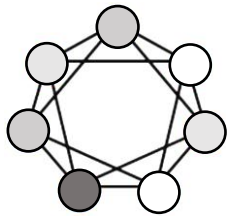
```
5
```

Copy



Solution

```java
import java.util.*;

public class Fibonacci {
    static final int mod = 998244353; // mod constant

    public static int getFibLoop(int n) {
        // get fibonacci by loop
        if(n == 1 || n == 0)
            return 1;
        int f_prev = 1, f_now = 1, f_next;
        for(int i = 2; i <= n; i++) {
            f_next = (f_prev + f_now) % mod;
            f_prev = f_now;
            f_now = f_next;
        }
        return f_now;
    }
    public static int getFibRec(int n) {
        // calculate fibonacci by recursion
        if(n == 1 || n == 0)
            return 1;
        return (getFibRec(n - 1) + getFibRec(n - 2)) % mod;
    }
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        int n = input.nextInt();
        input.close();
        int ans = getFibRec(n);
        System.out.println(ans);
    }
}
```



Thank You!