TAIWAN TECH National Taiwan University of Science and Technology
INTELLIGENT SYSTEMS DESIGN LAB

KOTLIN I

Date: 2024/04/29

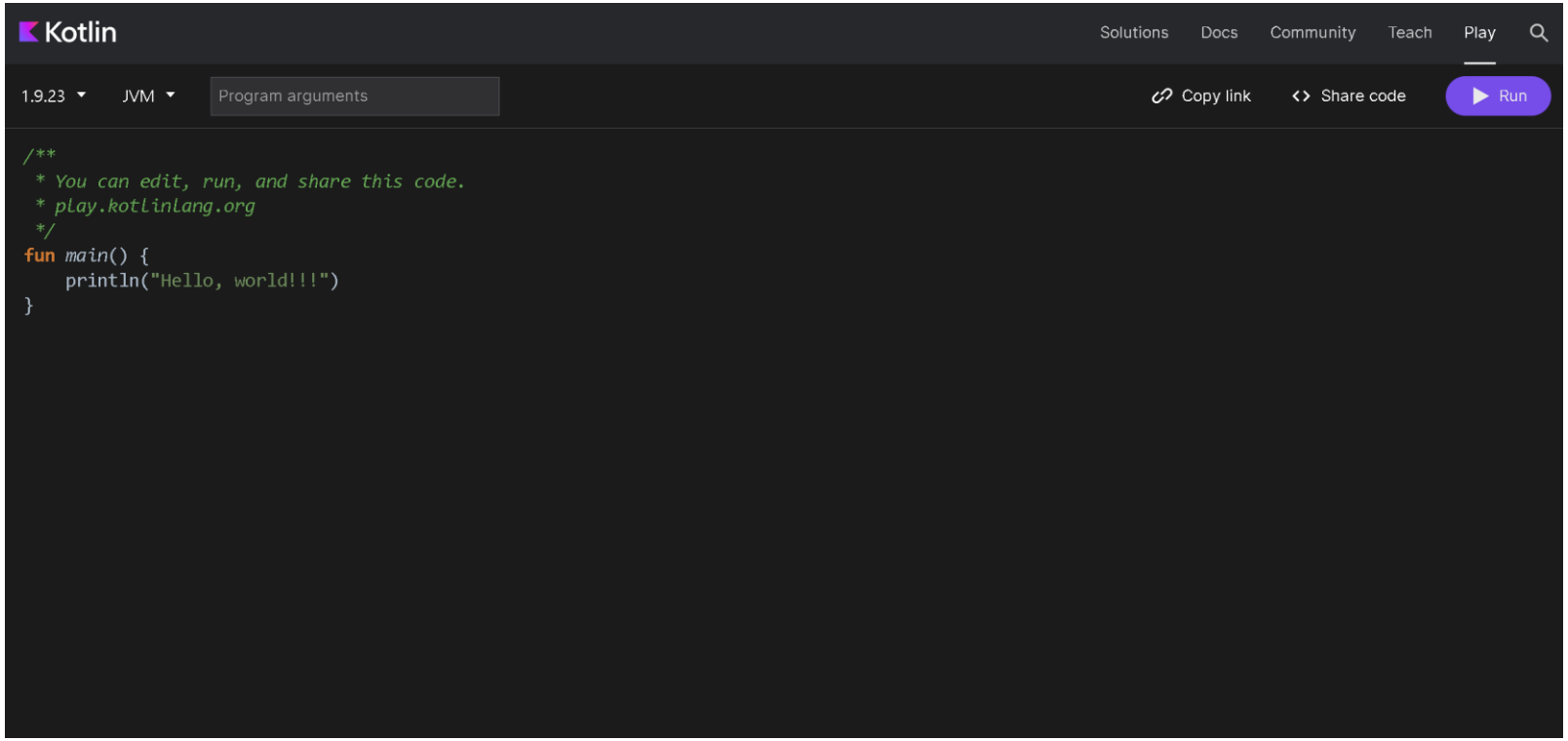
Why Kotlin?

- 跨平台

Server	(Kotlin/JVM)
Web	(Kotlin/JS)
Desktop	(Kotlin/JVM)
Android	**(Kotlin/JVM)**
IOS	**(Kotlin/Native)**

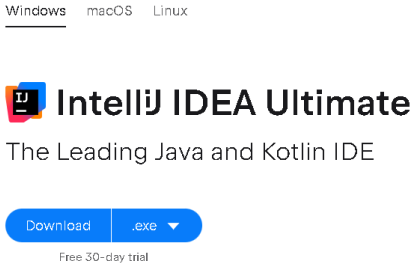
簡易的線上測試編譯器

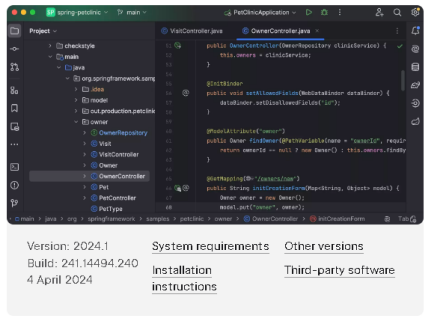
- https://play.kotlinlang.org/

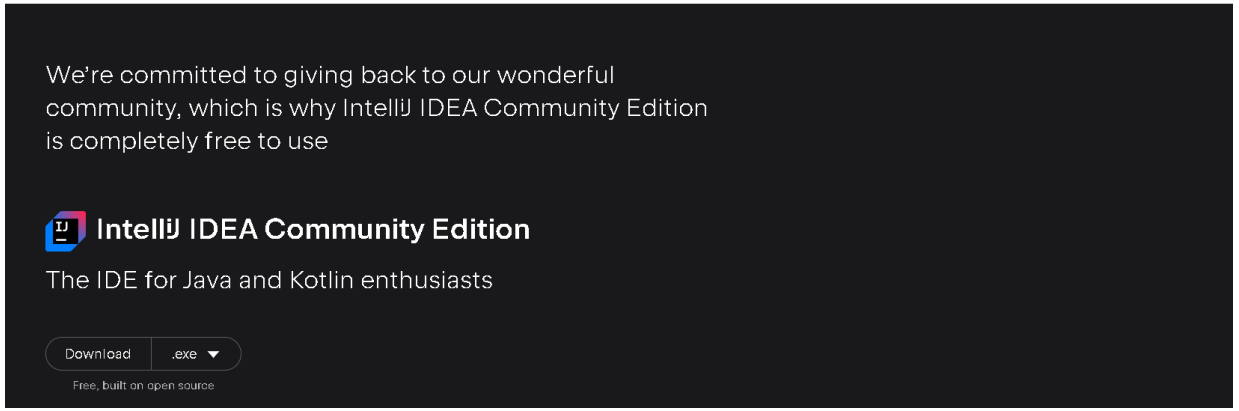


建議使用的IDE IntelliJ IDEA

- 有付費版與community版本







變數與常數宣告

- 變數

```
var course_name: String = "嵌入式微處理器系統設計"
```

變數名稱　型態　值

- 常數

```
val min_score: Int = 70
```

變數與常數宣告

- 型態可省略由編譯器自動判斷 (需考慮可讀性與資源問題)

```
var num1: Int = 10
var num2 = 10
```

資料型態

- 整數

Type	Size (bits)	Min value	Max value
`Byte`	8	-128	127
`Short`	16	-32768	32767
`Int`	32	-2,147,483,648 (-2^{31})	2,147,483,647 ($2^{31} - 1$)
`Long`	64	-9,223,372,036,854,775,808 (-2^{63})	9,223,372,036,854,775,807 ($2^{63} - 1$)

- 浮點數

Type	Size (bits)	Significant bits	Exponent bits	Decimal digits
`Float`	32	24	8	6-7
`Double`	64	53	11	15-16

Conditions

- If else

```
var score = 70
if (score > 70){
    print("穩啦")
}else if(score == 70){
    print("讚啦")
}else{
    print("哭阿")
}
```

Conditions

- When (Switch)

```
var day = 1
when(day){
    6,7->{
        print("sleeping")
    }
    3->{
        print("studying")
    }
    else->{
        print("working")
    }
}
```

Loops

- for

```
for (i in 0..10){
    println(i)
}

for (i in 10 downto 0 step 1){
    println(i)
}
```

Arrays and ArrayList

```
val animals: Array<String> = arrayOf("monkey","elephant")

// val fruits: ArrayList<String> = ArrayList<String>()
val fruits = ArrayList<String>()

fruits.add("banana") //append()
fruits.add("melon")

for ((index, value) in animals.withIndex()){
    println("The $value is eatting a ${fruits[index]}")
}
```

Function

```
fun my_plus_func(a: Int, b:Int): Int{
    return a+b
}

print("${my_plus_func(3, 4)}")
```

函式名稱

參數名稱:型態

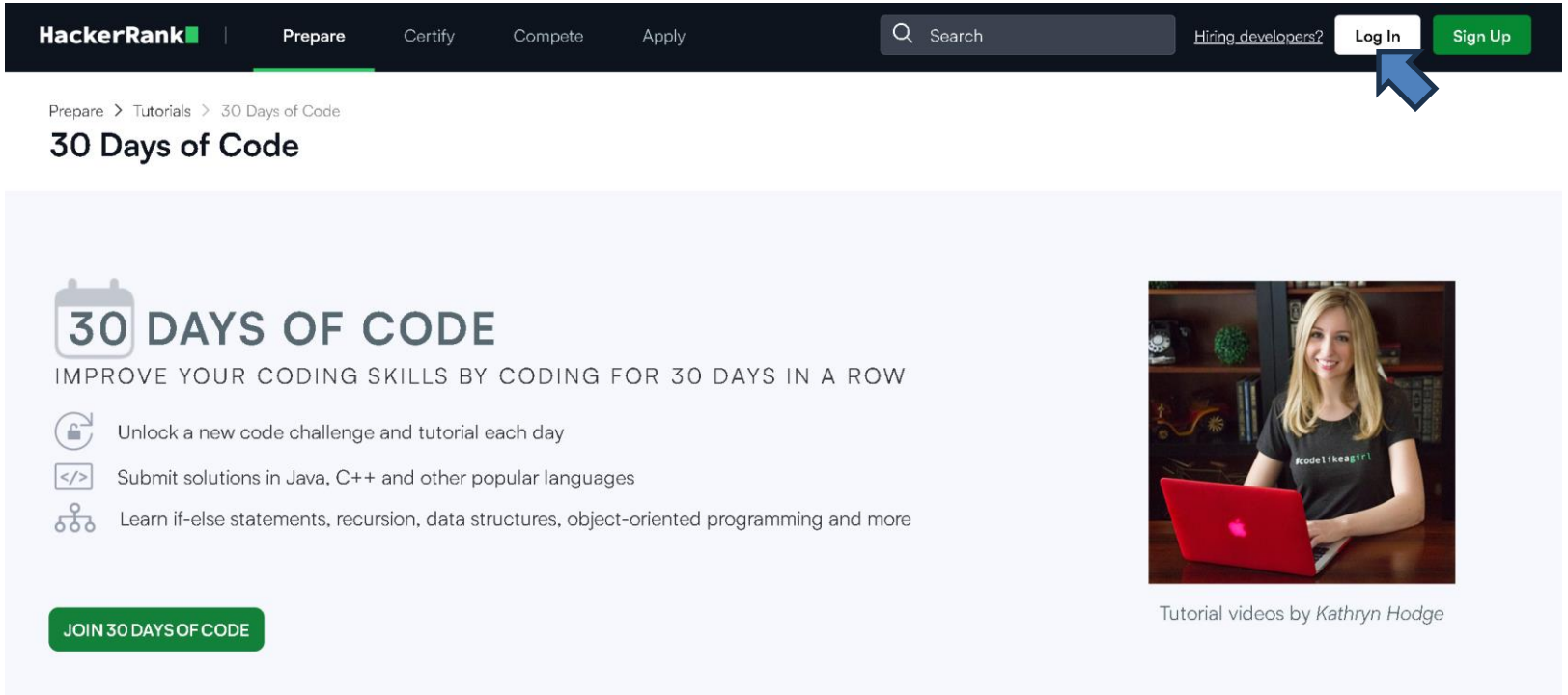
回傳型態

Read and Split

```
import java.io.*
import java.util.*

fun main(args: Array<String>) {
  val hello = readLine()
  println(hello)

  val (a, b) = readLine()!!.split(' ')
  println(a.toInt() + b.toInt())

}
```

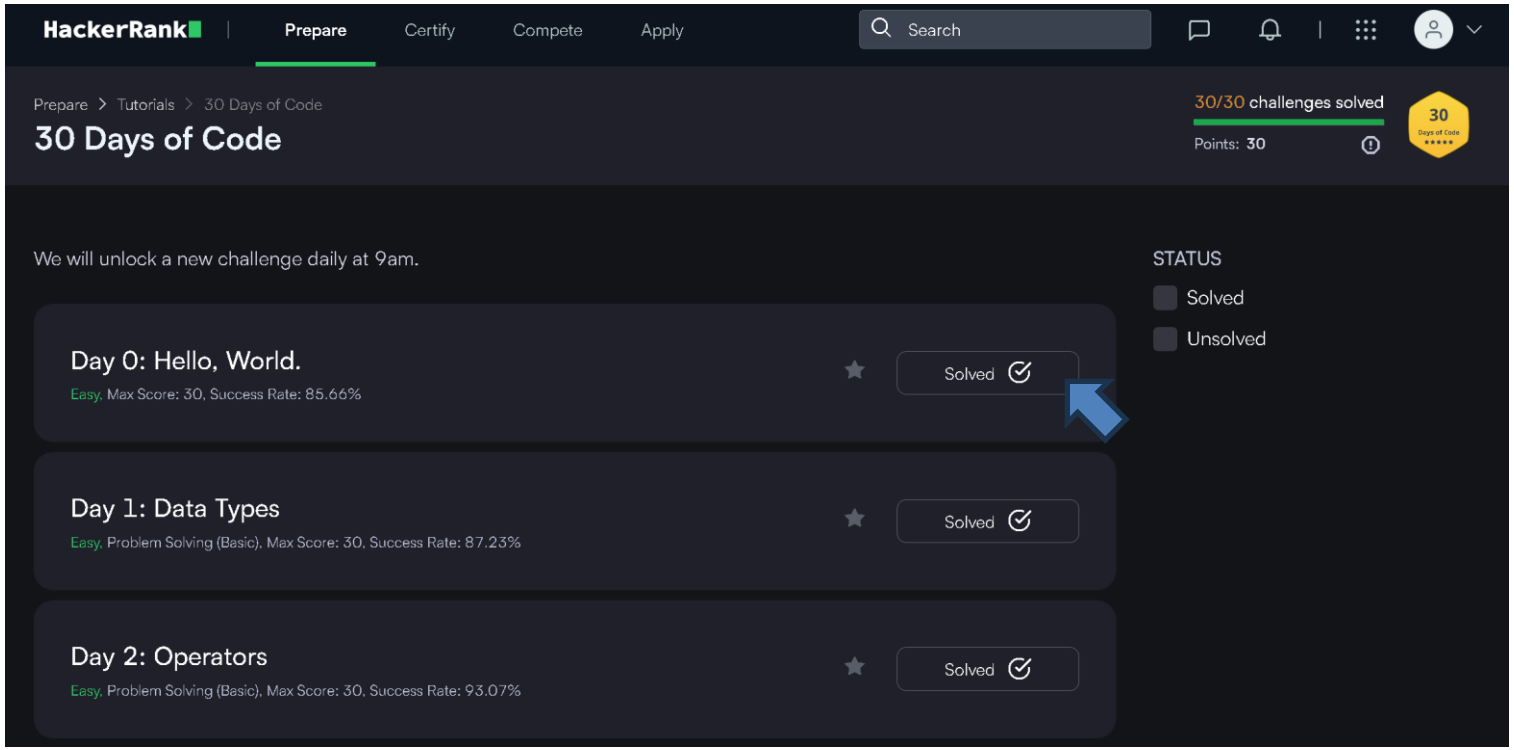
作業

- 先點選以下網址進入Hackerrank，並且利用Google帳號登入
  https://www.hackerrank.com/domains/tutorials/30-days-of-code



課堂作業

- 點選要解的題目



課堂作業

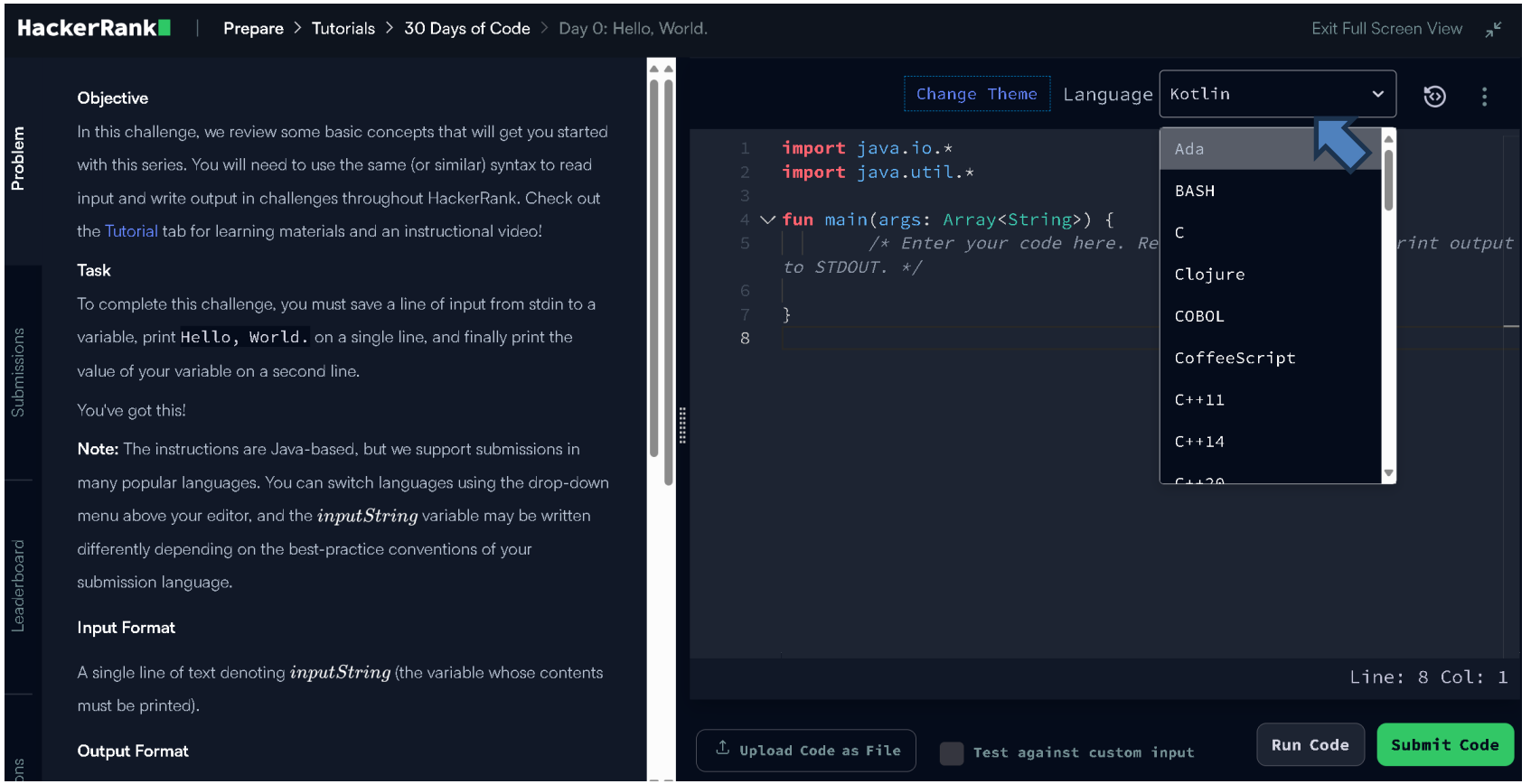
- 本次課堂作業 (超連結，按ctrl+左鍵進入題目)

  Day 0: Hello, World.

  Solve Me First
  Simple Array Sum
  Compare the Triplets
  A Very Big Sum
  Diagonal Difference
  Plus Minus

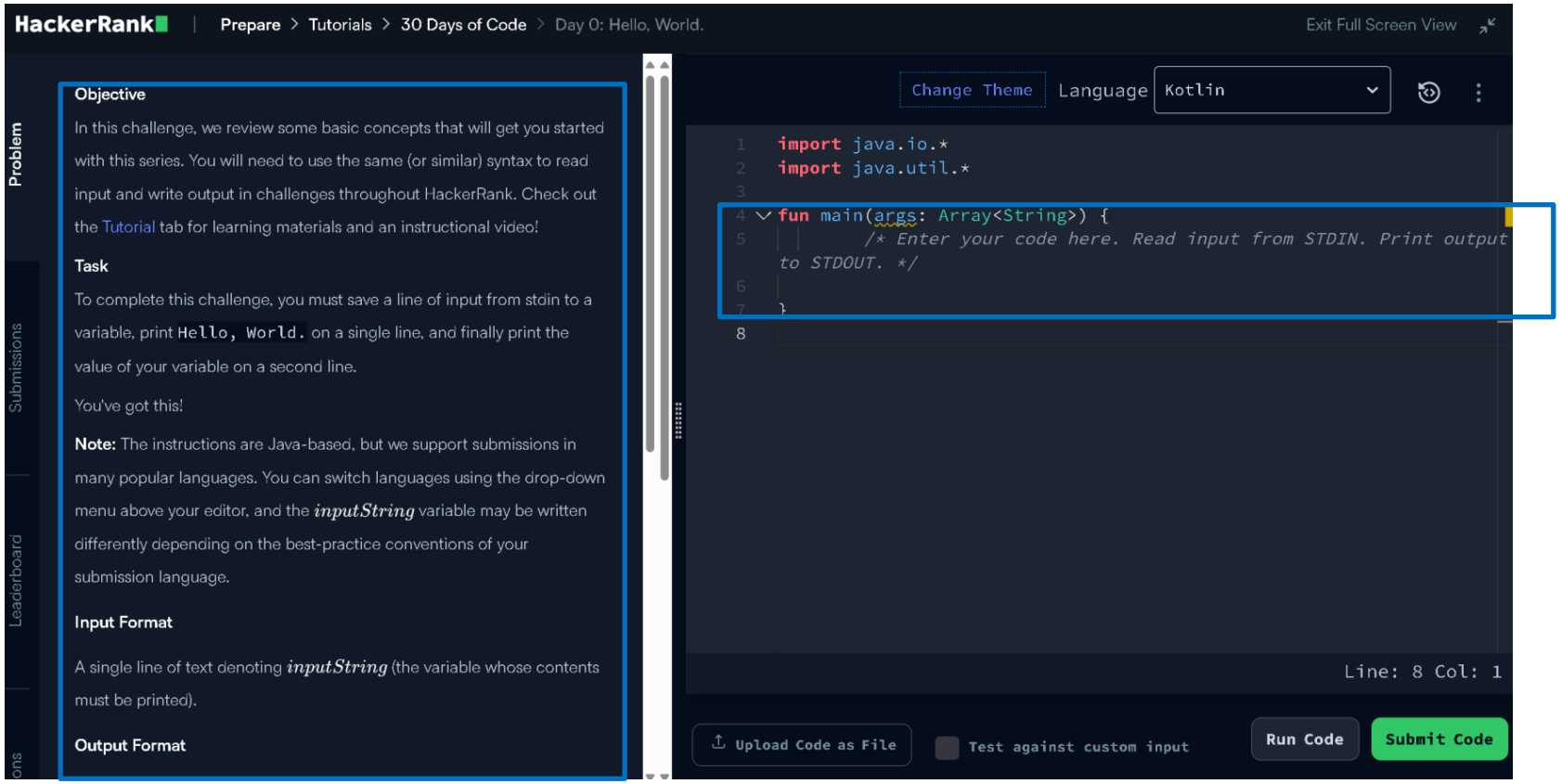
課堂作業

- Language 選擇 Kotlin



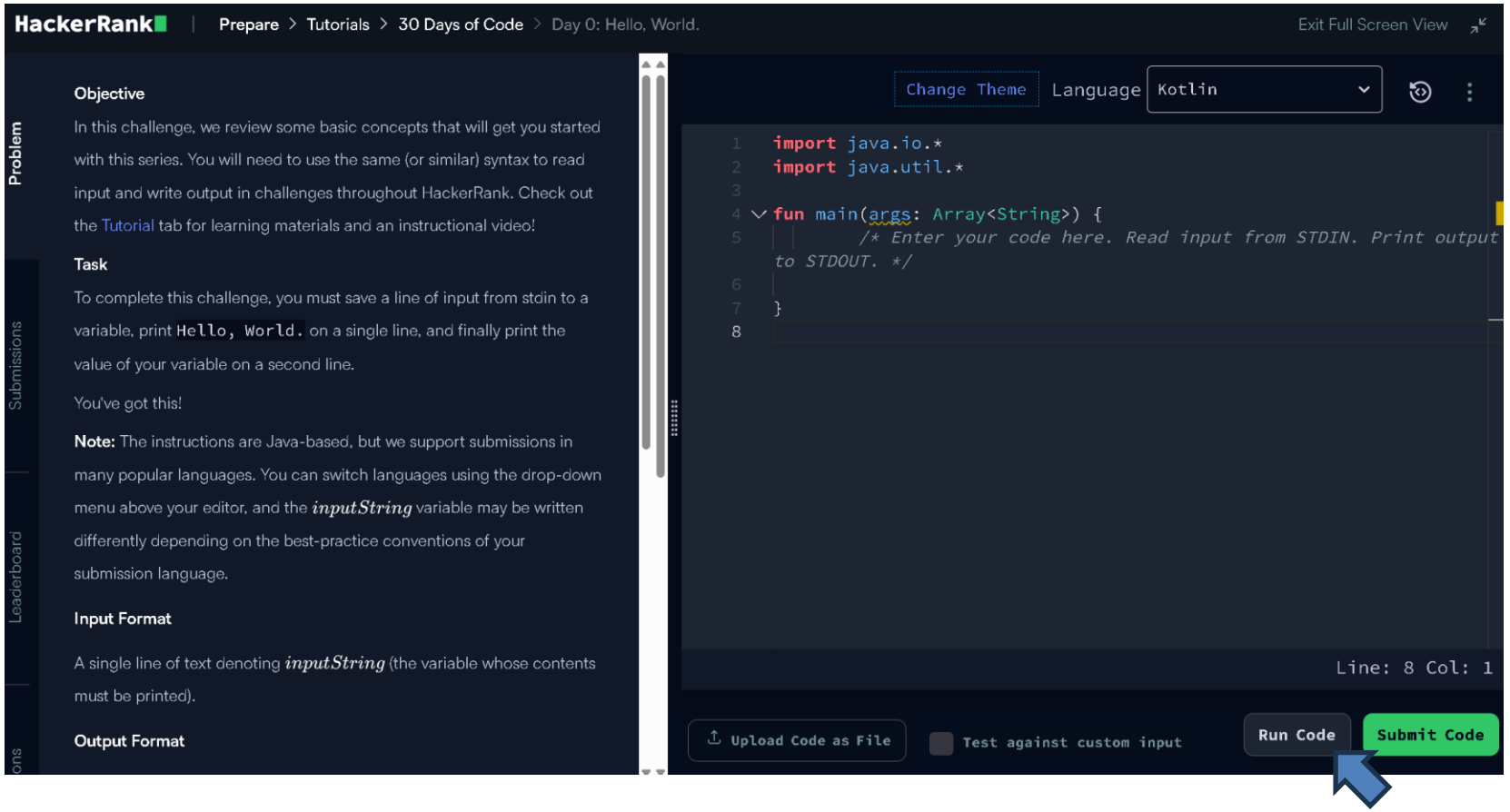
課堂作業

- 根據題目解說與右方模板提示作答



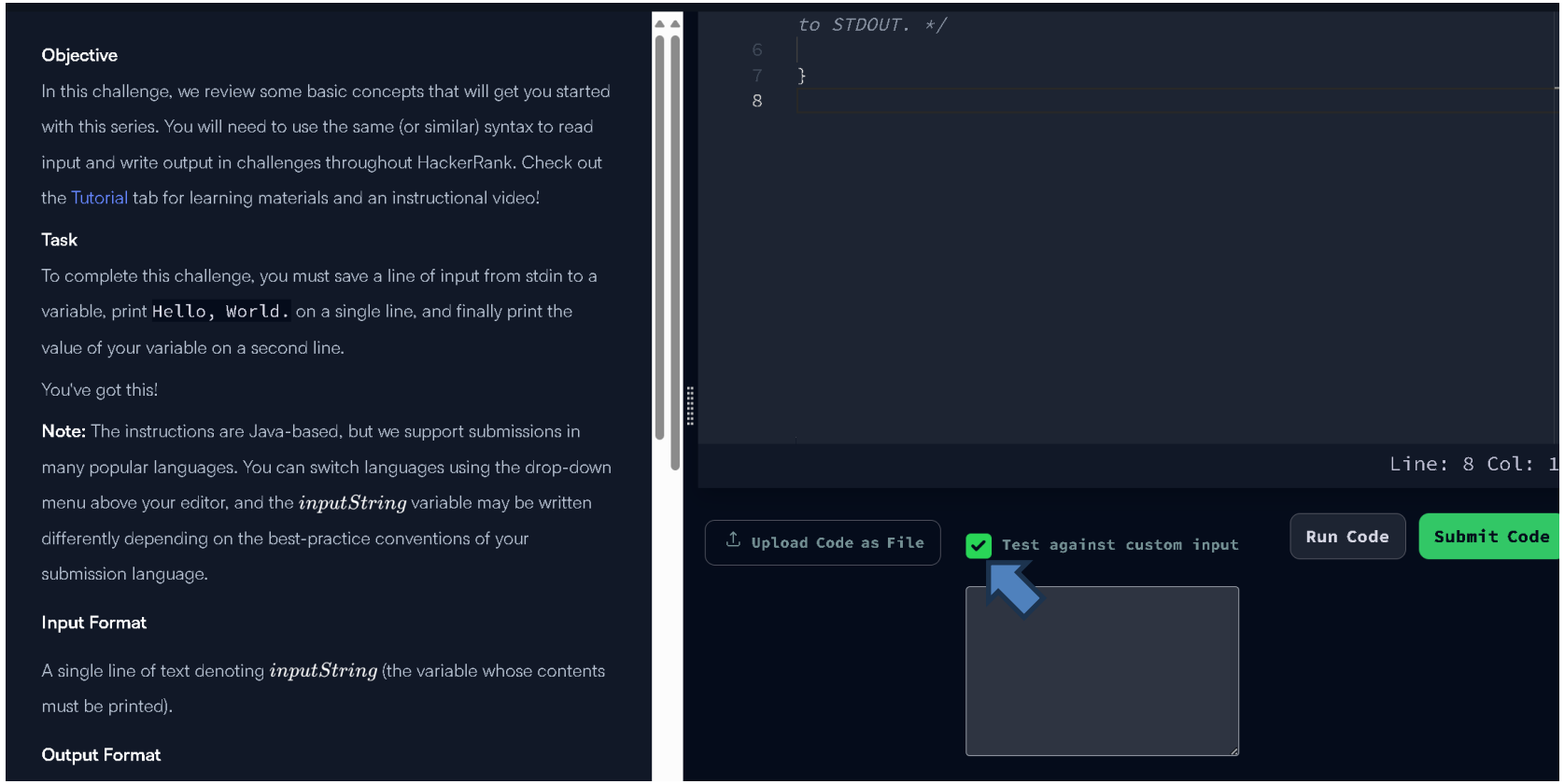
課堂作業

- Run Code 會依據範例輸入至程式



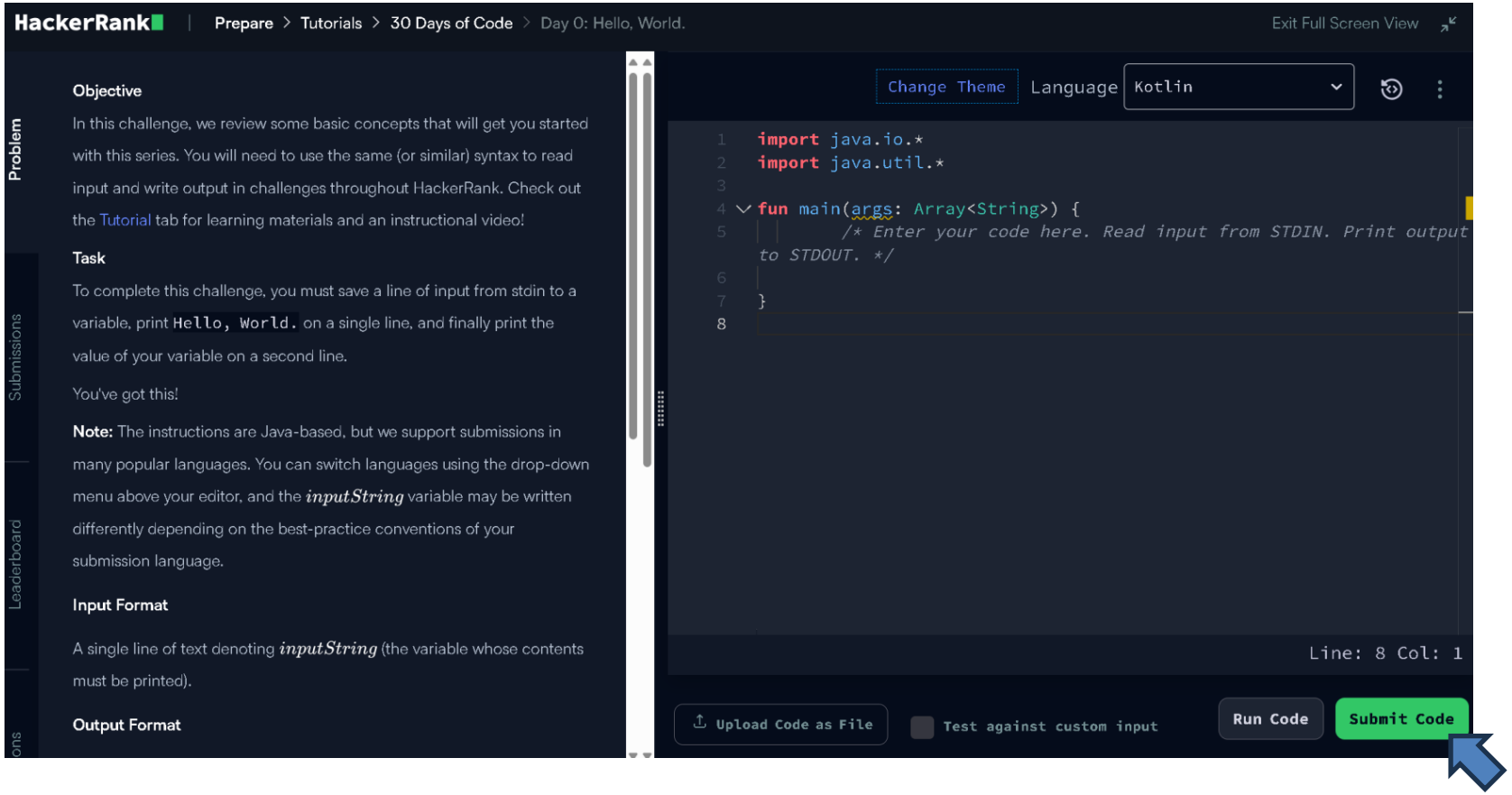
課堂作業

- 勾選此選項可以自定義輸入測試程式



課堂作業

- Submit Code 會有多組隱藏測試來檢驗程式是否通過



本次Bonus

- Encryption