Computer Programming 2 Lab

2023/02/22 Andy Hung

Outline

- HW 1
- From C to C++
- WSL

HW1

Description

Last semester, in HW6, you helped Tom convert the time code, and he was very grateful. However, he now has a new problem.

When Tom is searching for courses, he adds courses that he is interested in to his trace list. However, he is having difficulty resolving conflicts when he has to choose the order in which to take the courses.

HW1

我的追蹤清單

序號	科目代碼	科目名稱	教師姓名	學分數	上課時間/上課教室	課程狀態	科目選上後不得退選	我的註解	刪除
1	002347001	體育[男女合班]—健走	洪鈺釗	1.0	一12/	已額滿		請填入註解	☐
2	002374001	體育[男女合班]—田徑運動入門	洪鈺釗	1.0	三34/	正常		請填入註解	☐
3	042002001	金融，理財與生活	方中柔	3.0	一78E/綜合270113	已額滿		請填入註解	☐
4	044022001	俄國文化與社會	彭桂英	2.0	一78/綜合270111	已額滿		請填入註解	☐

In the above situation, the courses `金融，理財與生活` and `俄國文化與社會` have 2 hours of overlap (78), which is considered a **conflict**. Please help Tom count the number of conflicts he has.

HW1

Input

The first line contains a positive integer N, which represents the number of classes.

For each class, the first line provides the `session count` and `course ID`, and the second line provides the `weekday`, `start time`, and `end time`.

Constraints:

- N ≤ 10
- 1 ≤ session count ≤ 4
- |course ID| = 9
- 1 ≤ weekday ≤ 7
- 6 ≤ start time ≤ 21
- 7 ≤ end time ≤ 22

HW1

Output

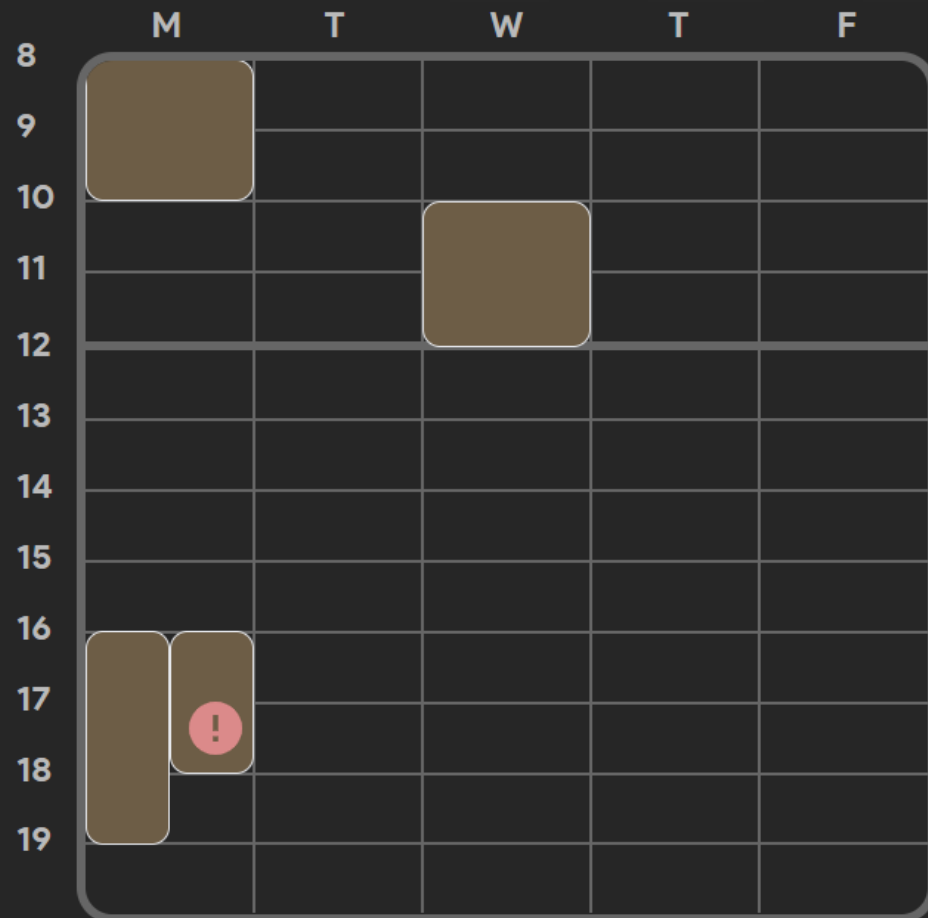Please print out how many conflict Tom has.

HW1

Input

```
4
1 002347001
1, 8, 10
1 002374001
3, 10, 12
1 042002001
1, 16, 19
1 044022001
1, 16, 18
```

Output

```
1
```

From C to C++: Hello World

```cpp
#include <iostream>
using namespace std;

int main() {
  cout << "Hello World!";
  return 0;
}
```

- A **namespace** is a declarative region that provides a scope to the identifiers (the names of types, functions, variables, etc) inside it.
- All C++ standard library types and functions are declared in the std namespace or namespaces nested inside std.
- No `.h` in `#include` most of the time.

From C to C++: I/O

- `<iostream>` includes commonly used `cin`, `cout`, `endl`.
- `cin` will read variables you defined automatically.
- `while(scanf( ... ) ≠ EOf)` ==== `while(cin >> a)`

```cpp
#include <iostream>
using namespace std;

int main() {
  int a;
  float b;
  string c;

  cin >> a >> b >> c; // input: 01 01.0 01.0
  cout << a << " " << b << " " << c << endl; // output: 1 1 01.0

  return 0;
}
```

From C to C++: String

```cpp
#include <iostream>
#include <string>
using namespace std;

int main() {
  string str1 = "Hello";
  string str2 = "Hello";
  string str3 = "World";

  // String is comparable.
  cout << str1 == str2 << endl; // True
  cout << str1 == str3 << endl; // False

  // Strings can be concatenated.
  string str4 = str1 + str3;
  cout << str4 << endl;

  return 0;
}
```

From C to C++: Vector

- C++'s new container, needs to include `<vector>`.

- Do not need to declare the size, but slower than array.

- Use `template` to declare vector type.

```cpp
#include <iostream>
#include <vector>
using namespace std;

int main() {
  vector<int> a;

  a.push_back(1); // a[0] = 1
  a.push_back(2); // a[1] = 2

  vector<vector<int>> 2d_array;

  return 0;
}
```

WSL

wsl

螢幕擷取畫面 ›
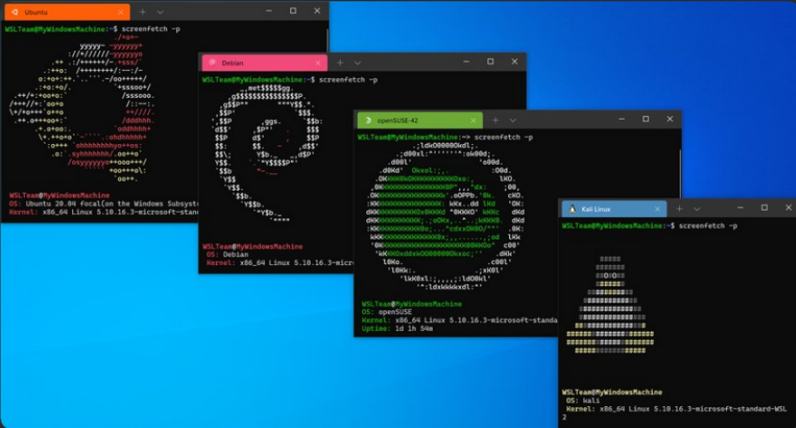
Windows Subsystem for Linux

Microsoft Corporation

開啟

4.8 ⭐ | **10**
平均 | 評等

描述

Windows Subsystem for Linux lets developers run a GNU/Linux environment -- including most command-line tools, utilities, and applications -- directly on Windows, unmodified, without the overhead of a traditional virtual machine or dualboot setup.

WSL

Installation

```
wsl --install
```

or download from microsoft store

```
wsl --install Ubuntu
```

WSL

- Can access Windows execution files
- Can use Windows files
- Can setup server
- Can have multiple sub-system
- Win11 has gWSL
- Can use Nividia CUDA
- Some commands may not work (WSL-kerel)

Thanks for listening
Any Questions?