Router

清华大学 交叉信息研究院 贾志鹏

题意简述

- 实现Web Server中的Router，其中需要能根据正则表达式匹配。

- 30%的数据中没有正则表达式。

得分情况

10分做法

○ 众所周知，输出样例能够有分。

30分做法

- 建立Trie树进行匹配。

100分做法

- 实现出题目中给出的正则表达式规则。

- If you are good at programming and familiar with regular expression, this task will be trivial.

- 实现正则表达式的方法是构造有限状态自动机。本题中构造出NFA就足够了。

Free talk time

Regular expression

○ Nearly every modern programming language (C++11, Java, C#, JavaScript, Python, Ruby) has standard library for regular expression.

○ In some programming languages, regular expression becomes a language feature instead of just being standard library.

Regular expression

- Applications of regular expression involve the verification of credit card number, email address, and matching routing paths in many web application frameworks.

- Real-world regular expression has many more features (grouping, back-reference) for easy using. Actually, the real-world regular expression does not correspond to regular language theoretically.

C++11 Standard

○ C++11 is the latest standard of C++ programming language, which was approved by ISO in year 2011.

○ The new standard introduces many new features inspired from other programming languages.

  ○ Auto type inference

  ○ Lambda function support

  ○ Standard library for regular expression

  ○ Smart pointers

  ○ New STL containers

  ○ Built-in support for multi-thread programming

Compilers for C++ 11

○ Latest version of all main-stream C++ compilers (GCC, LLVM/Clang, MSVC) support full C++ 11 standard now.

○ In gcc and clang, you may have to pass argument `-std=c++11` when compiling.

The feature of C++

- However, I think C++ is really a complicated programming language, and has some confusing aspects compared to Java.

- The new standard C++11, which adds many new features, although makes the language easier to use in some circumstances, yet puts the language on the way of becoming more and more complex.

- If you really wants to study the entirety of a programming language (especially object oriented one), I high recommend Java or C#.

THANK YOU