Final Project

Theory of Computation 2022

Deadline : 2022/12/26(Mon.) 23:59

Basic Requirements (60%)

Goal : Build a chat bot for a service (e.g, sport, game, Techs, …)

a. Design a Finite State Machine that should have:

- At least **4** states.
- More than **3** transactions departing from the initial state.

b. Implement the FSM you design

- You can use transitions package to complete this task.
- You are free to use other packages to draw your graph.

c. Implement a chat bot on Line according to your FSM

- The sample code will use *transitions* and *Flask* to demonstrate the chat bot on Line.
- You can just write your own code. FastAPI or other web frameworks, such as Flask, Django, … can be used in your program

d. The project you submit should include :

- Your code. (You're free to use any programming Language you like to implement. e.g, Python, Node.js, Golang, …)
- A document to describe your code:
    1. Please name your document "README.md" and put it in project root.
    2. Write it using markdown syntax.
    3. Draw your FSM and put the picture in your document.
    4. Detail about how to run and interact with your chatbot.
    5. ***Note that** if your document is not clear enough for TAs to understand and you don't attend demo to explain your code, any part that we cannot understand WILL NOT be graded.

Present (10%)

a. Demo Smoothness.

b. Documentation (README and etc.).

c. Illustration.

Functionality (10%)

a. State complexity (Not amount of states)
   - Transition continuity.
   - Transition correctness.

b. Notice that the design of state structure not to be redundant.

c. CRUD (create read update delete).

Creativity (10%)

- Sports, Game, Service, News, Techs, Tools.
- Others.

Bonus (5–10%)

a. Deploy :
   - AWS – Amazon Web Service.
   - Heroku – PaaS (Platform as a service).
   - Microsoft Azure.
   - GCP – Google cloud platform.

b. Extra functionality or technics :
   - Line API.
   - image/sound/video.
   - Web crawling.
   - Machine learning.
   - Blockchain.
   - Others.

Any Question please send to **ncku.toc.ta@netdb.csie.ncku.edu.tw**

Please refer to Q&A before sending the letter

主旨(Subject) : [Final Project] 簡述遇到的問題(The problem)

- 姓名學號 (Name, Student ID) :
- 系統環境 (System environment) :
- 系統版本 (System version) :
- 套件版本 (Package version) :
- 在哪一個步驟遇到的問題 (Which step did you get the problem) :
- 詳述問題 (Detailed problem) :
- 完整的錯誤訊息 (Complete error message) :
- 已經試過的解決方法 (Method you already tried) :
- 在這個問題上已經花費的時間 (The time you have spent on this issue) :