**CSCI927 Service-Oriented Software Engineering (Project Proposal)**

# Online study lounge system based on SOA

*Group Members (Group number): Liting Lyu (6603324), Yueyue He (6603671), Muzhe Peng (6603646), Wangzhihui Mei (6603385)*

## Design:

Our goal is to build a software system integrating GTD, Q&A, record and virtual study room modules, which aims to assist students in their study.
We generally divide our system into four modules — Personal, Study, Social and Q&A. Each module contains functional services, which are based on some basic service. We list some must-have services and good-to-have services.

### Must-have services

- User profile service: User can edit profiles. They can fetch various personal data.
- Report service: User or Administer can fetch data report through this serviuce. Feed flows are also generated in this service.
- Attendance service: Students Clock/automatically cleared out/display statistics report.
- Push service: Subscriber can subscribe to certain events, Pusher push notification to subscriber.
- Follow service: Follower automatically subscribe to followed topics or users.
- Message Service: User can send message privately to each other, this is based on push service.
- Calendar service: User can create their learning canlendar.
- Learning Task service: Students make daily plan/cleared out/summarize results/check progress.
- Network disk service: User manage learning materials with online disk based on permission.
- Self-study room service: Room creator create/update/delete/put online/offline/submit room, agree/reject application.Students apply/report room.Administrator offline/agrees/reject.
- Search Service: User can search for other user, study room, material, question, answer based on input data type and keyword.
- Question Service: User can add/modify/remove questions with several topics/tags. Questions can also be follower through follow service.
- Answer Service: Users can add/modify/remove answers and comment/vote others' answers.

### Good-to-have services

- Log service: system automatically generate logs.
- Friend service: User can build/remove friend relation with other user.
- Dynamic service: User can watch friends' dynamics.
- Data service: Service provider can analyse big data to generate data analisis report.
- Taking Course service: Course creator create/update/delete/submit/withdraw courses taking. Course participants join /summarize results/grade/view progress/summary/evaluation.

## Techniques

We use the data flow graph to indicate how the data is transformed when it moves in the system and we use BPMN, CMMN and DMN together to enable end to end modeling of our operations. We use down-top design to build our system, dividing our system into 2 layers: basic service layer (BSL) and application logic service layer (ALL). Basic service contains basic services such as push services, search services and so on. Application services in ALL are based on basic services to offer more complicated functionalities such as follow services, user services, etc. We can also use WSDL for describe for service description and UDDI for service discovery. We use XML as data exchange format among services and SOAP as standard communication protocol.

# Appendix

## Project Title: Online study lounge system based on SOA

*Group Members (Group number): Liting Lyu (6603324), Yueyue He (6603671), Muzhe Peng (6603646), Wangzhihui Mei (6603385)*

Q&A module offer question and answer functionalities for users. They can ask a question in question service and add a topic to this question. Other users who subscribe to this topic or see the question in their feed flow can answer the question. The answer can be seen by every user, who can comment or vote the answer. Mei' work is to design question service, answer service, QA search service as well as development of basic services such as push, follow, log, data, report services, etc.