[CS304] Team Project

A major component of this course is a software development project in team efforts. Your team will propose, design, develop, and evaluate a practical and production-level software product.

Project Suggestions

The project should fall in the following 3 categories. Each category has a set of targeted users.

- Boost Personal Study Productivity
  - Clients: university students
  - Goal: Software that boosts students' productivity and help them study more effectively and efficiently.
  - Examples:
    - Tools to improve coding efficiency for CS students
    - Tools to improve the quality of your source code
    - More delightful & enjoyable coding environment
    - Tools to manage workflow & fight procrastination
- Empower CS department
  - Clients: staffs of our CS department
  - Goal: Software that improves routine workflow and automates error-prone manual process
  - Examples:
    - CS funding management system (Real requirements. Please register in this form if you want to select this project.)
- Empower SUSTech
  - Clients: student unions, interest groups, staffs and faculties of SUSTech
  - Goal: Software that help clients' real needs.
  - Examples:
    - Better dining @SUSTech (clients: every SUSTech members)
    - SUSTech e-learning center (clients: students and faculties)
    - SUSTech virtual assistant / virtual tour guide (with ChatGPT?) (clients: visitors, high-school students and their families that are interested in SUSTech)
  - Tips: Above are only examples. Your team should identify real clients and their real needs. Better talk to clients face to face if possible.

You can also propose projects other than the examples. However, any team project should satisfy the following requirements.

1. The project should only fall into the above 3 categories (e.g., games (in most cases) DON'T fall into these categories)
2. Your project should have a clear set of target users with requirements. In other words, your project should not be motivated by imaginary users and imaginary requirements. For the same reason, exploratory or research prototype is not recommended as the team project.
3. The final software product should be practical, executable and usable. There should also be at least 3 major releases of your project, each release should be executable (details will be described in each milestone).

4. The scale and workload of the team project should be much larger than a single programming assignment (>=3x).
5. The project should support at least 5 distinct, notable features. For example, "account management" can be considered as 1 feature, but "registering a new account" can only be considered as ~0.2 features. Below is a list of ~11 features for WeChat, for your reference.

为什么要使用微信：
・多媒体消息：支持发送视频、图片、文本和语音消息。
・群聊和通话：组建高达500人的群聊和高达9人的实时视频聊天。
・语音和视频聊天：提供全球的高质量通话。
・表情商店：海量动态表情，包括热门卡通人物和电影，让聊天变得更生动有趣。
・朋友圈：与好友分享每个精彩瞬间，记录自己的生活点滴。
・隐私保护：严格保护用户的隐私安全，是唯一一款通过TRUSTe认证的实时通讯应用。
・认识新朋友：通过“雷达加朋友”、“附近的人”和“摇一摇”认识新朋友。
・实时位置共享：与好友分享地理位置，无需通过语言告诉对方。
・多语言：支持超过20种语言界面，并支持多国语言的消息翻译。
・微信运动：支持接入Apple Watch及健康app数据，可在步数排行榜上和朋友一较高下。若需使用，可在“设置-通用-辅助功能”内启用。
・更多功能: 支持跨平台、聊天室墙纸自定义、消息提醒自定义和公众号服务等。

Also pay attention to the below DON'Ts.

- You should NOT use existing projects from other courses or from previous semesters. Once found, you'll get 0 point for the team project.
- You should NOT directly reuse an entire existing open-source project and claim it to be your team project. You could reuse 3rd-party libraries, frameworks, APIs, though, but the significant parts of your product should be implemented by your team members.

The course team may ask you to change/improve project if we found the proposed project unsuitable. Ask us if you're not sure about your project selection.

Techniques

The team project can be a stand-alone desktop application, a web application, a mobile app, a toolkit, etc. that satisfy clients' requirements.

Most projects will use Java, Python, or C++, on Unix, Windows, or Macintosh computers, but you are encouraged to use whatever that is right for your particular product.

Every project should use `git` to manage the source code, documentation, as well as other necessary artifacts.

Teams

At the beginning of this course, you will form project teams with 4 to 5 members. During the semester, the project team will work together through the full development cycle.

Please form a team based on the following requirements:

- The size of the team must be 4 or 5. A team of size less than 4 or larger than 5 is NOT accepted.
- Teams will make a series of project presentation during labs throughout the semester. EVERY team member needs to be there during the presentation. For this reason, we recommend you to **find team members from the same lab session**.
- If you have to team up with students from other lab sessions, **make sure that you are in the same lecture**. In this case, you should also choose which lab session will your team be presenting throughout the semester, and this lab session could not be changed later.

Please see our github-classroom tutorial for how to create a team.

Milestones & Deliverables

The team project has 3 milestones, in week 5, week 9, and week 16, respectively.

At each milestone, **each team** is required to:

- **Submit a written report**.
- **Submit a set of deliverables**. Typical deliverables include working code, documentation, training materials, test suites, etc.
- **Deliver a 10-minutes presentation** during the lab session.

At each milestone, **each individual** is required to:

- **Submit an individual progress report**, which describes what you have done for this milestone. The course team uses the individual report to monitor the progress of the projects and to understand the contributions made by each member of the team.

The three primary criteria for a successful project are: satisfying the client's needs, usability of the product, and maintainability over the life of the product. Please take these criteria in mind when developing your project.

Detailed grading scheme will be released later before each milestone.

Contribution

By default, we consider each team member has the same contribution (e.g., 1:1:1:1 for a team of size 4).

If team members have different contributions, you need to explicitly write it down in the team report and mention it in the presentation, with the following restrictions:

- Maximum contribution: 1.2
- Minimum contribution: 0.8
- The sum of members' contribution should equal to the size of the team.

For example, if a team of size 4 got 10 points for a milestone, and the contribution is 1.2 : 1.1 : 0.8 : 0.9, then the team members got 12, 11, 8, 9 points, respectively.

Finally, the rewarded overall scores for extra contribution should not exceed 2 points. That is, you'll got at most 52 points for the team project.