

# Cloud Computing (CS5224) – Group Project

## An Awesome Cloud SaaS ☺

The idea of this group project is to apply all that you have learnt in this module and develop a useful cloud service of general interest that offers value-added services of relevance in Singapore. Interested groups may choose to use this prototype as a stepping stone and take it forward ☺.

The *main focus* is to

- (a) Develop a business case for a cloud service in an area of interest that is relevant to Singapore
- (b) Design, implement and compare the cost of hosting the service on-premise and on the cloud

Your implementation must include a working prototype and a web-interface from which the cloud service is accessible (a necessity for a SaaS). As a general guide, your service need not be complex and overloaded with many functionalities. Go for a simple but useful service which solves *a problem*. You are **not allowed** to use an existing SaaS off the shelf and just customise it!

### Things to Consider

- A good resource for this project is Singapore's **open data portal**, which is accessible via <https://data.gov.sg/>. Search the datasets to identify a good problem. You are of course free to come up with ideas using other sources too.
- Credit will be given to new cloud services that solves a problem well, ease of use, and good evaluation, among others.
- **Avoid** redoing services that are already available unless you can do it significantly better ☺.

**Examples** of previous projects from the 2020/21 cohort have been uploaded to Canvas – this was when posters were needed to be submitted but you **do not** have to worry about it. The list of project topics from the 2024/25 Semester 2 cohort has also been uploaded. These should give you a broad idea on the scope of the project.

### Submission

All submissions will be via *Canvas*.

Activity	Deadline
Team formation	08/09/25 at 18:00
Preliminary report	06/10/25 at 18:00
Final report	16/11/25 at 23:59
Video presentation	16/11/25 at 23:59

- (i) **Team formation** – please agree amongst yourselves and sign in to the pre-existing groups by the deadline. A **penalty of 1 mark** will be applied to any students not doing so by the deadline.
- (ii) **Preliminary report (10 marks)** – should be a **maximum of 5 pages** (including cover page, table of contents, references, figures, etc.). The preliminary report should contain information on the selected theme, business model, cloud service to be developed, preliminary design, and implementation plan.  
The report can be submitted by any one of the team members. It should be named as *<group nickname>.pdf*, so if your group nickname is 'BrilliantSaaS', the submission file would be *BrilliantSaaS-Preliminary.pdf*.
- (iii) **Final report (20 marks)** – should be a **maximum of 10 pages** (including cover page, table of contents, references, figures, etc.). The structure can be as follows:

- (1) *Motivation/Business Case* – problem statement and formulation, purpose and target users of your service, comparison with other services, etc.
- (2) *Business Model* – will this be free or revenue generating? If so, how? Compare and justify your SaaS with an on-premise implementation of the same.
- (3) *Architecture & Implementation* – discuss your SaaS in more detail, such as, design, algorithms, implementation, requirements, user journey, etc.
- (4) *Conclusion & Future work* (if any).
- (5) *Code Explanation (required)* – similar to a README, this contains information on your code base. It should also include a public URL which links to your code base. This URL should be accessible until at-least the time your marks and feedback are released.

Please make sure to state any assumptions you have made. The use of diagrams and images to enhance the narrative in the report and convey the design, architecture, workflow, etc. is highly encouraged.

The report can be submitted by any one of the team members. The naming convention is the same as with the preliminary report, except this time it would be named as *BrilliantSaaS-Final.pdf*.

- (iv) **Video presentation (5 marks)** – should be a **maximum of 15 minutes**. The video should be you presenting your project and also showing a clear demo of how your SaaS works. It is expected that each member of the team presents a small element during the presentation.

Please upload your video to an online platform, such as YouTube and submit the URL on Canvas. This can be submitted by any one of the team members. Do make sure the URL is accessible until at-least the time your marks and feedback are released.

**Note:** Do not worry if Canvas automatically adds a version number to any resubmission.

## Important Points

**Teamwork** – all team members are expected to participate equally. It is your responsibility to manage the team dynamics. In order to help monitor this, we will be using *peer assessment*. Two stages of peer assessment will be used with one at the preliminary stage and one at the final stage. Each team member will be asked to review the contribution of each of the other team members on a scale from 0 (almost no contribution) . . . 5 (contributed very well). These scores will then be averaged and based on the average, the following marking scale will be adopted. If you do not fill in the peer assessment, you will get an automatic 0.

Peer Assessment Range	Marks awarded
$4 \leq 5$	100%
$3 \leq 3.9$	80%
$2 \leq 2.9$	60%
$1 \leq 1.9$	40%
$0 \leq 0.9$	0

As an example, if a student were to get 9 on the preliminary report and 4.5 in the peer assessment, their final mark would be 9. However, if they got 2.5 in the peer assessment, their final mark would be 5.4 (60% of 9).

In order to do the peer assessment, we will use either Google Forms or MS forms. More details on this will be provided after the group project teams are finalised.

**Plagiarism** – standard NUS policies on plagiarism applies, including for the use of AI. This is also detailed in the slides for the introductory lecture of this module. For example, you can use AI generated code/content, but you have to **ensure** that you have cited this appropriately.