

COMP2S01 (23/24)



LECTURE I _ INTRODUCTION

9 SEPT 2023

TODAY'S AGENDA

1. Introduction
2. Lecture: Digital Divide
3. Housekeeping

Teaching Team

Dr. Grace Ngai (COMP2S01)

- Associate Professor, COMP
- ScB Engineering, PhD Computer Science



Teaching Team

Tutors (SLLO)

Kenneth Lo 	Sizza Chan 	Dawit Kahsay Debesai 
Sean Leung 	Anna Kwok 	Renee Leung 
Angel Luo 	Emily Ng 	Sunnie Lo 
Eugene Cheung 	Anson Wong 	A.I. 

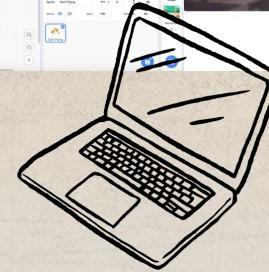
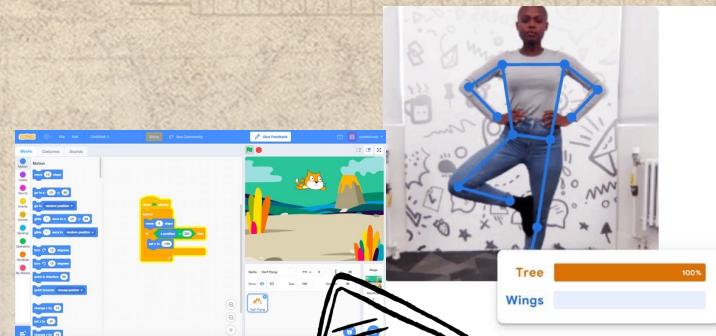
INTENDED LEARNING OUTCOMES (UPON COMPLETION OF THE SUBJECT, YOU WILL BE ABLE TO)

- Demonstrate an awareness of the **impact of the information/digital divide**, and the linkage between social disadvantages and the availability of appropriate technology.
- Demonstrate an awareness of the **impact of social status, culture and/or ethnicity**, and **empathy for the preconceptions, concerns and needs** faced by disadvantaged individuals or community groups.
- Articulate the **needs of the underprivileged in society**, analyze complex issues in the service setting and design, implement or deploy appropriate and ethical technological solutions to meet the needs of the target recipients.
- **Work effectively in teams** to solve problems encountered in planning and delivering the service
- **Communicate effectively** with clients and/or other stakeholders
- **Reflect on the relationship between their service-learning activities and experiences with the academic content of the subject**, in particular the needs of the underprivileged in society and their own discipline and sense of civic responsibility, especially pertaining to use and deployment of technological solutions.

What will you do for the service this year?



Deliver a STEM education workshop for children to build awareness in IT/AI

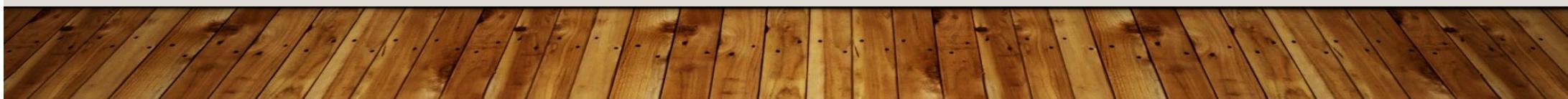
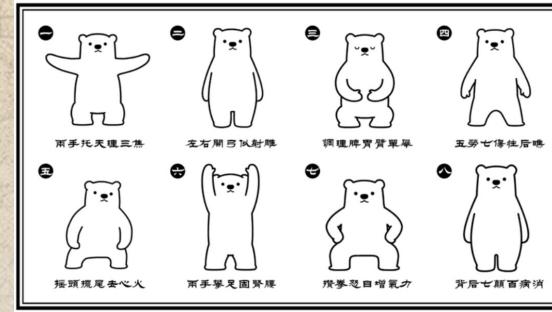


Topic: Programming and AI body posture recognition

MORE PROJECT DETAILS



- Location: China, Philippines, South Africa, Tanzania, Vietnam
- Service recipients: Primary / middle school students
- Theme: Artificial intelligence / pose recognition
 - 8 poses from Baduanjin (八段錦)
- General Idea:
 - Design a workshop that will teach children to write a program to recognize the poses
 - The end of the workshop will be a competition



The programme



- Platform: Scratch (drag-n-drop), Google Teachable Machine (also drag-n-drop)
- Teach children to:
 - Train the AI platform to recognize 8 Baduanjin poses
 - Write a programme that maps the 8 recognized poses to 8 directions on the compass, and
 - Moves the Scratch sprite in that direction that the human is directing it do (via the pose)

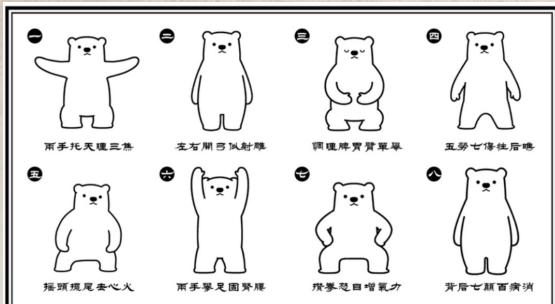


Photos: Tencent QQ family

Competition



- General idea: guide your Scratch sprite through a maze using the 8 Baduanjin poses
- The destination will correspond to a certain country's flag, which will be determined at the time of the competition by lucky draw

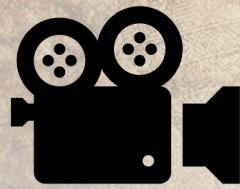


Which country is it?

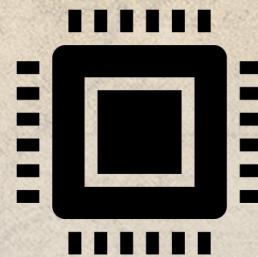
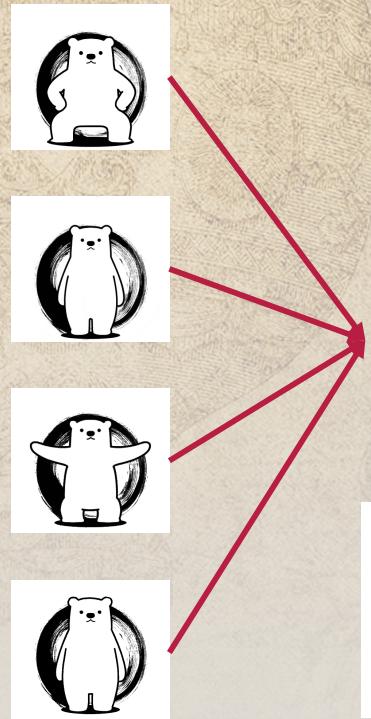
How do we get there?
What's the best route?



Example run: Your team is given a picture of a panda



Perform the
correct Bajuanjin
pose (the children,
I mean)



Program
recognizes the
pose and maps to a
direction



Guide the cat to
the correct
location

Photos: Tencent QQ family

Project Arrangement



One group of
PolyU students

Group A



Will teach two
identical workshops to
two groups of
primary/secondary
students

Implication: You only need to prepare ~15 hours of teaching content

I know nothing about coding



Would it be a problem?

No



```
when green flag clicked
set [Direction v] to [0]
set [Penalty v] to [0]
go to x: -181 y: -183
wait (1) seconds
when green flag clicked
forever
  wait (0.2) seconds
  next costume
AI when I receive [Pose 1 v] > [0.9]
  set [Direction v] to [North]
AI when I receive [Pose 2 v] > [0.9]
  set [Direction v] to [East]
AI when I receive [Pose 3 v] > [0.9]
  set [Direction v] to [South]
when space key pressed
if [Direction = North] then
  point in direction [0 v]
  move (30) steps
  wait (0.3) seconds
  move (30) steps
else
  if [Direction = East] then
    point in direction [90 v]
    move (30) steps
    wait (0.3) seconds
    move (30) steps
```

SOME HELPFUL APPS

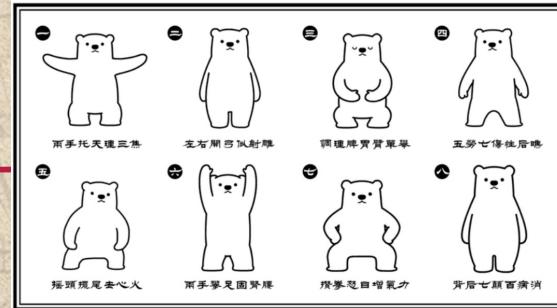
- IOS / Android App (Cantonese version only)

“智能八段錦” by Animoca Brands



- For English version

<https://www.youtube.com/watch?v=bZhlLAoDzPA>



Form 2 Draw The Bow To Hunt The Eagle

Improves the following symptom :
Stuffy Chest, urinary and constipation Problems
Hunching backs, soothes tired muscles
Strengthens leg muscles



Photos: Tencent QQ family



Class schedule (Tentative)

Week	Date	Time	Content
1	Sept 9	0930 – 1220	Lecture
2	Sept 16		Lecture
3	Sept 23		Lecture
4	Sept 30		Public Holiday (No class)
5	Oct 7		Lecture
6	Oct 14		Lecture
7	Oct 21		Undergraduate Info Day (No class)
8	Oct 28		Lecture
9	Nov 4		Lecture
10	Nov 11		Tutorial
11	Nov 18		Tutorial
12	Nov 25		Tutorial
13	Dec 2		Tutorial

Service schedule



Country	Service period	Language used in the service	Quota	Fee payable (HKD)
China	23 – 31 December	Mandarin	30	1,500
Philippines	2-14 January	English (with some support into Filipino)	30	1,500
South Africa	2-14 January	English	30	6,000
Tanzania	2-14 January	English	30	4,000
Vietnam	2-14 January	English (translated into Vietnamese)	30	2,000

Semester 2 starts on 15 January, 2023

What will be covered?

- Roundtrip transportation to and from Hong Kong
- Group travel insurance
- Accommodation and food during the service period
- Daily transportation
- UHS Travel Health Consultation (Vaccination & Medicine) – up to HK\$1500
- VISA fee (if needed)

How will you be graded ?

Preparation (30%)	E-Learning (Individual)	Pass/Fail
	Workshop Proposal (Team)	15%
	Learning Materials Design (Team)	15%
Service Delivery (40%)	Service performance (Individual)	40%
Reflection (30%)	Empathy Map (Team)	5%
	Reflective Journal (Individual)	25%
Teamwork	Peer Review (Individual)	+/-

E-LEARNING MODULE (PASS/FAIL)

- Covers some basic concepts about Service-Learning
 - What is Service-Learning? / Benefits of Service-Learning / Responsibilities, Attitudes and Ethics in Service-Learning / Reflecting on your Service-Learning Experience
- Evaluation:
 - End-of-Course Test (Passing Grade: 50% or above)
 - Grade deduction for failing the test or for incompletion (deadline: October 8, 23:59)
 - Instructions will be on Blackboard as an assignment

PREPARATION (30%)

- Learn and practice the skills you will be using on the projects**

- Designing and developing educational materials

- Evaluation:

1. Workshop Proposal – Team (15%)

- Template with example:** Intended learning outcomes, detailed lesson plan for the workshop and evaluation

2. Teaching Materials – Team (15%)

- All Teaching Materials (e.g. ppts, worksheets, etc)

- Grade deduction for late submission

Workshop Proposal

This is a template for CIMP25015 students to prepare workshop proposal (max. 10 pages).

(1) Team Members

Sub-Team No. (e.g. 1x)	Full Name	Nickname	Department	WhatsApp no.#	Your Recent Bio-Head Photo (should be taken within 3 months)

(2) Intended Learning Outcomes for Your Service Recipients (By the end of the workshop, learners will be able to...

- A) Understand the concept of A.I., machine learning and their applications in daily life
- B) Understand the challenges faced by the visually impaired through a gamified learning experience
- C) Understand how A.I. object recognition technology can improve the lives of the visually impaired
- D) Understand the issues related to data bias in machine learning
- E) Use Teachable Machine & Scratch to develop a simple A.I.-based recognition system

(3) Detailed Lesson Plan (10-hour workshop)

* A well developed lesson plan allows third parties to easily prepare for and execute your plan.

The Day 1 activities listed here serve as a reference for you to prepare a lesson plan.

You are expected to revise Day 1 lesson plan below as you see fit.

Date	Topic	Learning Activities	ILOs	Duration	Materials Needed	Evaluation Plan
Day 1	Ice-breaking	1) Two truths and a lie 2) Blind-folded game	/	15 mins	Blind folds, stationery, pencil case	We should be able to name ALL learners
	Workshop & Competition Overview	1) Introduction to the workshop & competition - Workshop content, schedule Competition date, game rules 2) Kahoot! to check understanding	/	25 mins	PPT, Kahoot!, IPad	Based on Kahoot!, all students should be clear with the workshop & competition schedule, with a 100% correct rate.

3) Pre survey To understand how well students know about A.I. and programming		
Introduction to Artificial Intelligence 1) YouTube Video - What is Artificial Intelligence? A in 5 minutes https://www.youtube.com/watch?v=2eP9ru1AO 2) True or False: Is it an example of A/I? On PPT, show students 10 scenarios and ask them whether it is an example of A/I.	Video, PPT	All learners should be able to answer the I/I questions with a 90% correct rate.

10 mins break		
3) Quick Draw https://quick-draw.withgoogle.com - Let students feel how a machine learns (how we can teach it better)	A, D	40 mins
2) Manual Identification of Cat V.S. Dog - Identify unique characteristics of objects - By observing picture of a dog and a cat, students are going to write some characteristics to differentiate cats and dogs on blackboard		
3) Cat V.S. Dog Exercise with Teachable Machine Introducing how to use Teachable Machine (including how to connect USB webcam, rename classes, capture/delete images, train model, save and load files) Introducing the idea of data bias https://teachablemachine.withgoogle.com/		
4) Examples of data bias in real world - Some bias-based discussion		
Wrap-up	1. Exit Quiz & Evaluation	A, D
Day 2		5-10 mins
Day 3		
Day 4		
Day 5		

EXECUTION (40%)

- Evaluation:
- Quality of service – Individual evaluation (40%)
- Responsibility, Contribution, Teamwork, Adaptability/Flexibility, Empathy, Attitude to your service clients, your teammates, and your teachers
- The results of the children's projects in the competition will NOT influence your grade, but how you help them to handle winning or losing will!

One group of PolyU students



Will teach the same workshop twice to two groups of primary / secondary students

Group A1
(e.g. 930am – 1pm)



Group A2
(e.g. 2pm – 530pm)



Implication: You only need to prepare ~15 hours of teaching content

REFLECTION (30%)

- Evaluate the impacts of your service projects
- Reflect on your service experience
- Evaluation:
 - I. Empathy Map – Team (5%)
 - Help you to analyze your performance early on, and improve for the rest of the service
 2. Reflective Journal – Individual (25%)
 - Summative account of learning
- Grade deduction for late submission

Empathy Map			
Service Location:		Age/ Study Level of Service Recipients:	
Team:		Name of Your Service Recipients' School:	
Motivation <i>Why do your service recipients join this training and workshop? What is their area of interests?</i>	(A) Before the workshop	(B) During the workshop	(C) Adjustment
Gain <i>What will your recipients learn from this training and workshop? What do your recipients gain from interacting with you and/or their peers?</i>			
Pain <i>What are the frustrations, obstacles, worries or concern your recipients will face?</i>			
Learning Behaviours <i>What are the learning attitudes of your recipients? How would your recipients behave in class? Will they respond to you actively?</i>			
Any other observations of your recipients?			

REFLECTION JOURNAL

YOUR FULL NAME

STUDENT ID 1234567D (TEAM XX)

This is a template for COMP2S015 reflective journal (max. 4 pages). Use the format and font size set in this template. You may type in bold or underline any key points. Please support your answers with adequate elaboration, evidence or examples.

RJ1 -The Impact of Your Service on the Recipients and Community

- Our era of technological advancements also brought about information/digital divide in society.
- The social issue: How did your understanding of information/digital divide change because of this service-learning subject? (Be specific and explain with detail.)
 - Your service: To what extent do you think your workshop helped address information/digital divide?
 - The recipients & community: Did you observe any changes in your service recipients, including secondary school students and primary school students, before and after the service? To what extent do you think the changes are important to your service recipients? What long term consequences do you think the experience will have on them?

RJ2- Learning from Your Experience

Think critically about your positive and negative experiences from service-learning.*

- What was the most challenging or memorable incident during this service-learning journey? What did/can you learn from it? How do/does the learning gain(s) benefit your future development (e.g. study and/or career)?

*For each question, identify a concrete experience and go through the following steps: first, **DESCRIBE** what happened (what/who/where/when); then, **EVALUATE & ANALYSE** your reaction (what did you feel/think when it happened? why did you react that way? what does your reaction say about you?); finally, **LEARN** (what did you learn? what would you do in a similar situation in the future?).

PEER REVIEW

- Used for reference purposes during grading
- Evaluate the contribution of work in your group
 - Grade deduction for free rider, grade addition for hard-working students

Peer Review (Individual)

Team:

Every team member will need to submit softcopy of this Peer Review Form via Blackboard. You will need to indicate how much yourself and your teammates have contributed to the team during the preparation stage. Under “Justification”, you **MUST** indicate the role and **every team member’s contribution**.

	Team member’s name	Contribution %	Justification (adjust the size of the boxes if necessary)
1	(Your name)	(Nickname)	(Your contribution)
2			
3			
4			
5			
Total		100%	

(Confidential – do not share this with your team members)

6

PROJECT SELECTION PROCESS



When will my service location be confirmed?

5 Sept, 23:59	Deadline for preference indication for first round of service project allocations
8 Sept	First round of service project allocations released on Blackboard
9 Sept	Lecture 1
11 Sept, 23:59	Acceptance (or not) of Round 1 project allocations Students who do not accept their project allocation and still want to stay in the class, please fill in the form for Round 2 If you do not like your project allocation and your (only) preferred project is full, please drop the subject so that other people can have a chance!
14 Sept, 23:59	Preference indication deadline for second round of service project allocations
15 Sept	Second round of service project allocations released on Blackboard
16 Sept	Lecture 2
16 Sept, 23:59	Acceptance (or not) of Round 2 project allocations Students who do not accept their project allocations should drop the subject

CURRENT PROJECT SITUATION

*AS OF 8:30AM 9/9/2023

Team	# students	# vacancies
Chinese mainland	30	0
Philippines	25	5
South Africa	23	7
Tanzania	24	6
Vietnam	27	3

131 students allocated, 108 students got their “very preferred” choice

4 students are very flexible and said “ok” to everything – basically a random allocation

Only 20 students did not get their “very preferred” choice.

~20 students did not bother to submit the allocation form

As of 8:30am 9/9/2023, 2 students have rejected their first round allocation offer

NEXT STEPS FOR YOU

- Check your project allocation on Blackboard
- Decide whether you want to accept the offer before the deadline (Monday 11 Sept 23:59, on BB)
 - If we do not get your project acceptance indication, we will assume that you reject the offer and your place will be released for other students to compete over in Round 2
- Round 2 allocation deadline on Thursday, 14 September, 23:59
- <https://forms.office.com/r/h9T0G11grU> (we will also create an “assignment” on BB with the link)

that we can accommodate everybody. **You will be randomly allocated if you do not submit a justification.**

#The following will NOT be considered as justifications:

- "My English is not good enough to deliver the service"

Reason: English is the medium of instruction at PolyU and thus all students should be competent in English.

- "I am very familiar with location X/I was born and raised in location X and therefore I am the perfect candidate to serve at location X"

Reason: the purpose of non-local learning experience is to broaden your horizons. *

The Service	Where to Serve (City, Country)	Who to Serve	Medium of Service	Trip date Departure from Hong Kong (To be Confirmed)	Trip date Arrival in Hong Kong (To be Confirmed)	Fee to pay (HKD)	Quota
To design and deliver a STEM workshop about A.I., machine-learning, and basic computer programming to targeted service recipients.	Tanga, Tanzania	Primary school students	English	2-Jan-24	14-Jan-24	4000	30
	Pretoria, South Africa	Township students	English	2-Jan-24	14-Jan-24	6000	30
	Da Nang, Vietnam	Primary school students	English (supported by Vietnamese translation provided by local university students)	2-Jan-24	14-Jan-24	2000	30
	Manila, The Philippines	Primary school students	English	2-Jan-24	14-Jan-24	1500	30
	Shaoguan, China	Primary school students	Mandarin	23-Dec-23	31-Dec-23	1500	30

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	Manila, The Philippines	Primary school students	English	2-Jan-24	14-Jan-24	1500	30
	Shaoguan, China	Primary school students	Mandarin	23-Dec-23	31-Dec-23	1500	30

	very preferred	preferred	OK	I cannot go there
Tanzania	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
South Africa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vietnam	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2

Which department are you from?

Note: this question will help us create interdisciplinary teams. *

Enter your answer

3

The service in China requires using Mandarin as the medium of service delivery, I *

CAN speak Mandarin

CANNOT speak Mandarin

5

Please upload your justification together with any supporting document(s) needed.

Note: you may ignore this if you have chosen "OK" for all options in Question 4

Upload file

File number limit: 1 Single file size limit: 10MB Allowed file types: Word, Excel, PPT, PDF, Image, Video, Audio

6

Your mobile number

The teaching team may contact you via WhatsApp if further information is needed

Note: please include the country code if it is not a Hong Kong number (e.g. +86)

*

Tanga, Tanzania



With over 120 ethnic groups and more than 125 indigenous languages in the country, the Tanzania team will delve into a journey of cultural exploration. By emphasizing **cultural awareness, respect for diversity**, and self-reflection through different workshops and visits, one of the focuses of this team will empower students to **cultivate a deep appreciation for various cultures** and embark on an **introspective exploration of their own cultural identities**.



Pretoria, South Africa



In the country (in)famous for a past headlit by **structured racial inequality** and the **resistance movement** against it in the 20th century, this team will learn **how history shapes the society of South Africa today**. Students will coach township students on computer programming – a field of knowledge that is less accessible in their school curriculum – and reflect on **how socio-historical factors shape the future of local youths in 21st-century South Africa**.



Da Nang, Vietnam



Vietnam has a rich multi-ethnic **history and heritage**, which has been enriched by various influences, **Chinese, French, and American**, and particularly shows itself in its appetizing food culture. After suffering through **a long-running, devastating civil war** in the 20th century, today, Vietnam is rebuilding itself into one of the **fastest-growing countries** in South-East Asia. Students will experience how the country is reinventing itself into a pivotal roleplayer in the South-East Asia region.



Manila, The Philippines



“Bayanihan” and “Pakikisama” encapsulates the core Filipino value of **communal unity, cooperation, helping one another, and harmonious social relationships.**

They contribute to the strong sense of community & social cohesion of Filipino culture. Through different interactive learning activities, students who join the Philippines team will develop competence and cultivate the ability to work in diverse teams with **a sense of unity & shared responsibility.**



Shaoguan, China



Situated at the northernmost part of Guangdong province, bordering Hunan to the northwest and Jiangxi to the northeast, Shaoguan has been **part of the important north-south trade routes throughout history**. Deeply influenced by Hakka traditions, Shaoguan offers students **a unique experience of Chinese customs and practices**. At the same time, Shaoguan's industrial development **showcases China's modern industrial processes and economic development**. Students will get opportunities to interact with the local Hakka community, culture and Shaoguan's history, natural resources, and industrial development.



Q1: How will we be allocated to our service teams?

6

- We target that each team will have a balance of students from different backgrounds (nationality or region of origin), discipline, and gender.
- We will try to accommodate students' preferences, but we will most likely not be able to give everybody their preferred project.

Q2: Is it possible that I can't get into any team?

6

- The preference form asks you to indicate your preferred locations, and to indicate project sites that you **CANNOT** be placed into.
- If you are only willing to consider a few possibilities, and they are all very popular, there is a chance that we will not be able to allocate you to a project at all.
- This is why we want to let you know as soon as possible, so you still have time within add/drop to find another SL subject!

Q3: Will first year / final year students have priority?

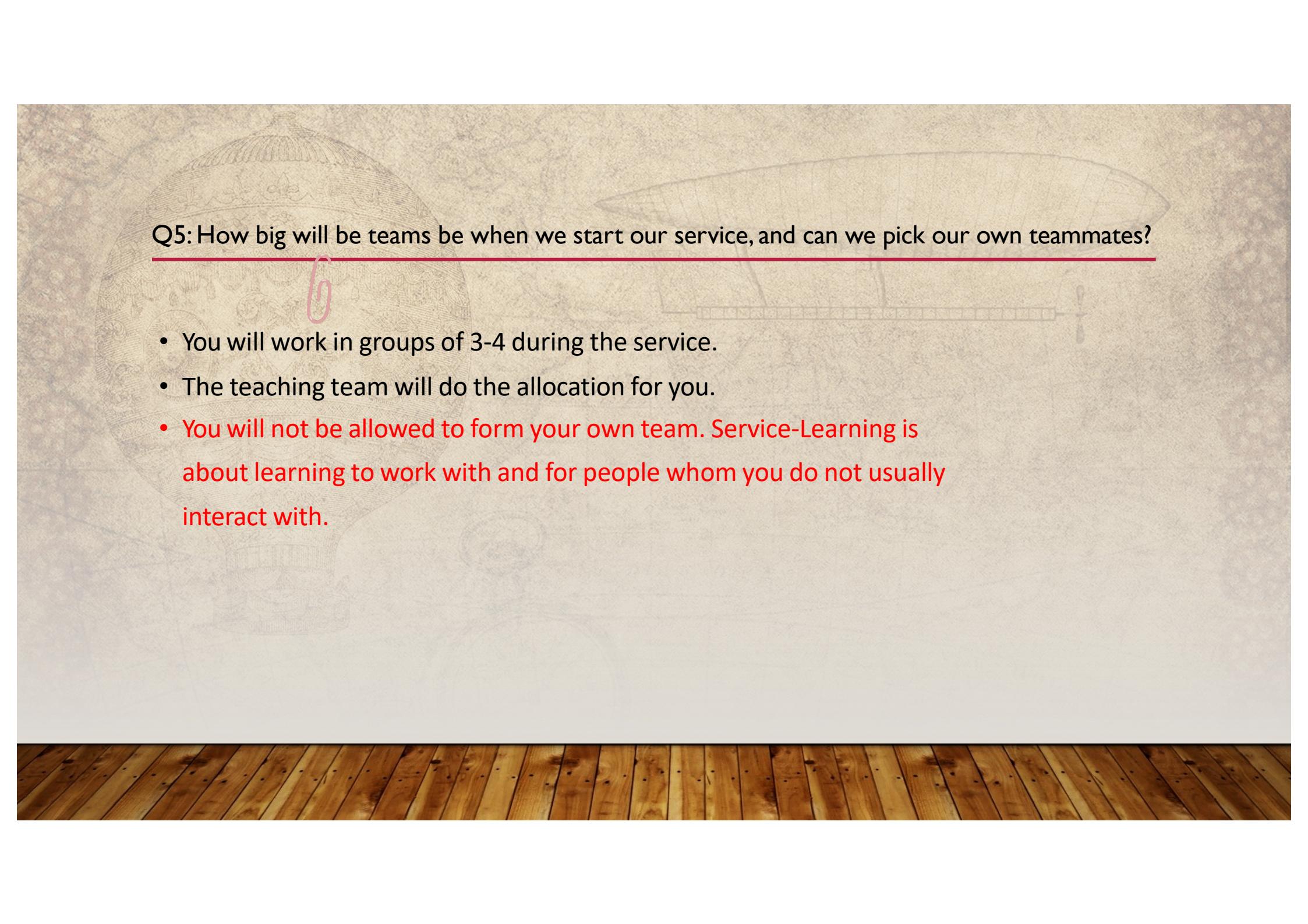
6

- More senior students will have priority as they need to finish their service-learning before they graduate
- This is similar to how they get an earlier time-slot in subject registration
- However, if you have already fulfilled your service-learning requirement, and especially if you have already done a non-local SL, or non-local CAR, you will be placed at a lower priority.

Q4: How can I increase my chances of getting the project location that I want?

6

- You have to write a short essay explaining your preferences.
- Things that we will NOT consider:
 - I can't speak English well so I can't serve in [some location]
 - [Some location] is my home (or I have visited before)
- Non-local Service-Learning is about enhancing your cross-cultural competencies and trying something new



Q5: How big will be teams be when we start our service, and can we pick our own teammates?

6

- You will work in groups of 3-4 during the service.
- The teaching team will do the allocation for you.
- You will not be allowed to form your own team. Service-Learning is about learning to work with and for people whom you do not usually interact with.

Q6. IS ATTENDANCE NECESSARY? CAN I STAY BEHIND AT THE LOCATION AFTER THE SERVICE PROJECT?

- Attendance is necessary for all sessions. COMP2S01 is very hands-on and interactive, and if you do not attend class, you will not be able to learn effectively (even if you do watch the recordings afterwards)
- You may not stay behind at the location after the service project. PolyU risk management requires that we bring all students to the service project, and bring them back together
- We are working on enrichment activities for each of the sites and the details will be announced later.

Q&A



Photos: Tencent QQ family