Introduction to Algorithms and Data Structures

2019, January 28–February 1

Lecturer: Prof. Ryuhei UEHARA (`uehara@jaist.ac.jp`)

Lessons:

- Uehara will use white board and PowerPoint.

- You have to submit 5 reports in total.

Time: 13:00-16:00

Supplemental Web page:

`http://www.jaist.ac.jp/~uehara/course/2019/myanmar/`
(I sometimes update this page; especially, please check the schedule which might be changed.)

Evaluation: Evaluations will be made by the following rate;

- Small reports from Monday to Thursday: 10 points × 4 make 40 points in total.

- One big report: 60 points.

Schedule:

Date	Contents
Monday	0. Intruduction to Introduction to Algorithms
Monday	1. Foundation of Algorithms (1): Basic model
Monday	2. Foundation of Algorithms (2): Simple basic algorithms
Tuesday	3. Searching (1): Sequential search
Tuesday	4. Searching (2): Block search
Tuesday	5. Searching (3): Binary Search and Hash method
Wednesday	6. Fundation of Algorithms (3): Big-O notation
Wednesday	7. Data Structure (1): Data structures for search algorithms
Wednesday	8. Data Structure (2): Operations on linked lists
Thursday	9. Data Structure (3): Stack, Queue, and Heap
Thursday	10. Sorting (1): Bubble sort and Insertion sort
Thursday	11. Sorting (2): Heap sort and Merge Sort
Thursday	12. Sorting (3): Quick sort, complexity of sort algorithms, and counting sort
Friday	13. Data Structure (4): Data structures for graphs
Friday	14. Graph Algorithms (1): Breadth-first search and Depth-first search
Friday	15. Data Structure (5): Dynamic Search Tree and its balancing
Friday (?)	16. Super Apllication: Computational Origami

Reports:

From Monday to Thursday, I will give some reports. Each report makes 10 points. The deadline is the next day (that is, for example, the deadline of the report on Monday is Tuesday). On Friday, I will leave the final report that makes 60 points. In total, you can have up to 100 points. The deadline of the final report is February 8 (Friday). Please submit the final report to Ms. Yu May Paing (`yumaypaing@uit.edu.mm`). Checked reports will be returned to you.