INTORDUCTION TO INFORMATICS

Course Introduction (01MB406)

SARCAR Sayan

Faculty of Library, Information, and Media Science

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Self Introduction

- Name:

- Nationality:

- Degree: PhD/Master (year?):

- Educational Background:

- Expertise in topics:

- Hobbies:

- Any interesting fact that you learned after coming to Tsukuba or Japan:

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Course Homepage

Everything can be found here

https://sayansarcar.github.io/courses.html

Course Objectives

- Develop a basic understanding to the fundamental topics in Information Technology

- Understand the role of IT and its use for real world problem solving

- Learn how to create, test, evaluate, and debug IT applications through a case study

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Teaching Method

- We will focus mainly on classroom activities.
- Students will study the topics in depth outside the class.
- **Students are strongly recommended to study the learning materials (PPT) before coming to the class**.

The class structure is as follows:

- Brief introduction of the topic (First 15 -25 minutes of the class by instructor)
- Classroom activities (rest of the time)

Course Evaluation

Project (60%)

- Novelty (10%)
- Design prototype (10%)
- Final app (10%)
- Final presentation (20%)
- Final Report (10%)

Classroom activities (30%)

Assignments (10%)

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Course Topics

- Introduction to Informatics
- Data, information, knowledge
- Number systems, data representation (Binary, Octal, Hexadecimal, bit, byte, etc.), encoding and information theory
- Introduction to Hardware (CPU, memory, storage, etc.)
- Introduction to logic and its application in IT
- Introduction to problem solving, algorithms, flow charts
- Sets, its operation and its relationship to relational databases
- Introduction to programming
- Introduction to networking, distributed computing, WWW

Most important: **project presentations (mid-term and end-term)**

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Class Schedule

Class	Date	Topics
1	Oct 3	Course Introduction and Grouping, Introduction to Informatics
2	Oct 10	Data, information, knowledge
3	Oct 17	Number systems, data representation, Information Theory
4	Oct 24 (tentative)	Introduction to Hardware
5	Nov 7	Introduction to logic and its application in IT
6	Nov 14	Introduction to problem solving, algorithms, flow charts
7	Nov 21	Mid-term presentation
8	Dec 5	Sets, its operation and its relationship to relational databases
9	Dec 12	Introduction to programming
10	Dec 19	Introduction to networking, distributed computing, WWW
11	Dec 26	Final presentation

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Grading

- <u>AA</u> – A competed & excellent app, excellent experiment & analysis, and excellent report

- <u>A</u> – A completed working prototype, excellent experiment & analysis, and excellent report

- <u>B</u> – A completed working prototype, satisfactory experiment & analysis, and satisfactory report

- <u>C</u> – Partially completed work

- <u>F</u> – No work

Progress report and presentation

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How to submit report?

- Make docs to pdf, and apps in zip

- Submit to sayans@slis.tsukuba.ac.jp (Subject: <u>Informatics class - report</u>)

- Strict deadline

- Follow report template (download from course homepage)

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Presentation

- In Japanese and/or English

- Extra credit if in English

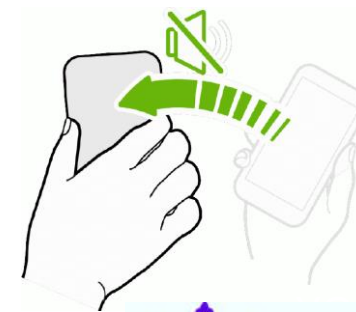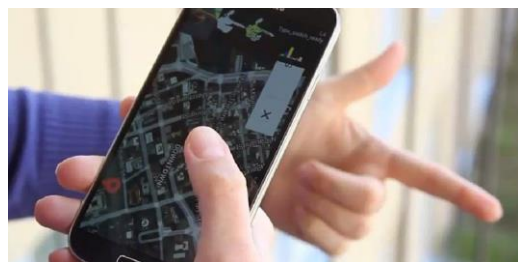- Slides can be bilingual (Japanese + English) or in English
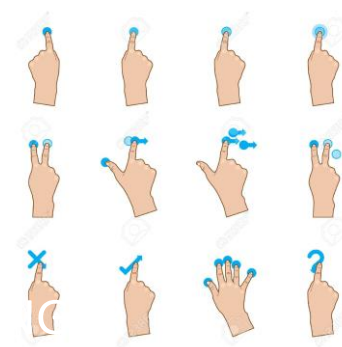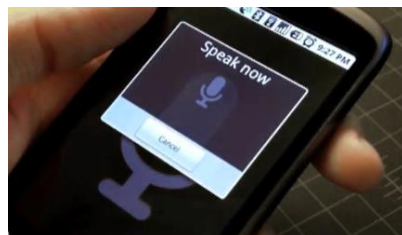
- 30 minutes for each group

Sample Projects

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Sample Project Topic 1

## Topic: Designing *novel* smartphone interfaces for older adults or blind people

Sample Project Topic 2

Topic: Designing *novel* mid-air hand gesture interfaces and interactions

Open/Close[*]
"Tap in mid-air"

Play/Pause
"Open/Close Palm"
Play
Pause

Volume Up/Down[*]
"Palm up/down"

Change Channel
"Rotate Channel Dial"

TV Guide[*]
"Draw a Circle"

Favorite Channel
"Clap Hand"

Menu
"Open Book"

No
"Cross Fingers"

Yes[*]
"OK Gesture"

Previous / Next[*]
"Swipe Hand to Left/Right"

Voice Guide[*]
"Hands by Ears"

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Sample Project Topic 3

Topic: Designing and evaluating of *novel* eye gaze based text entry systems
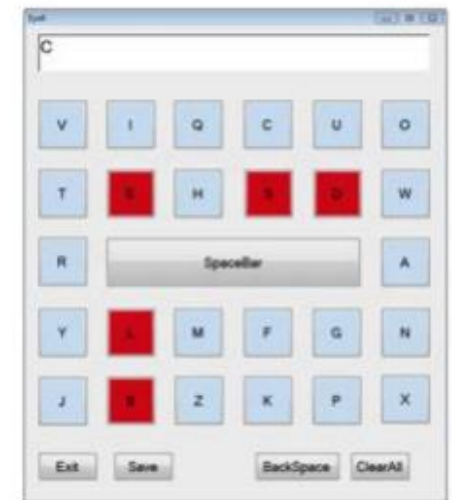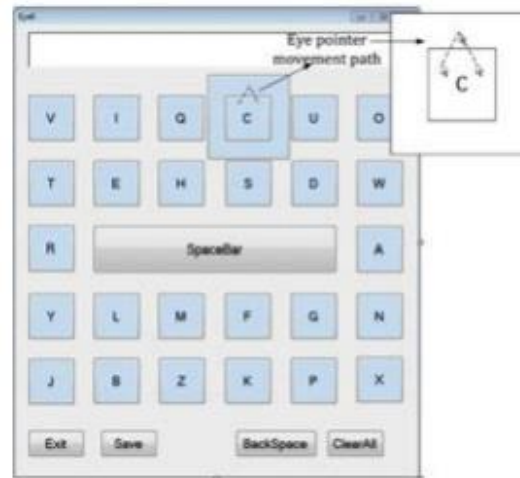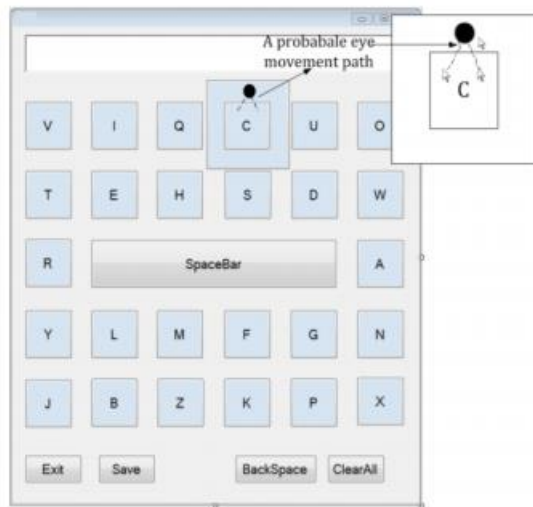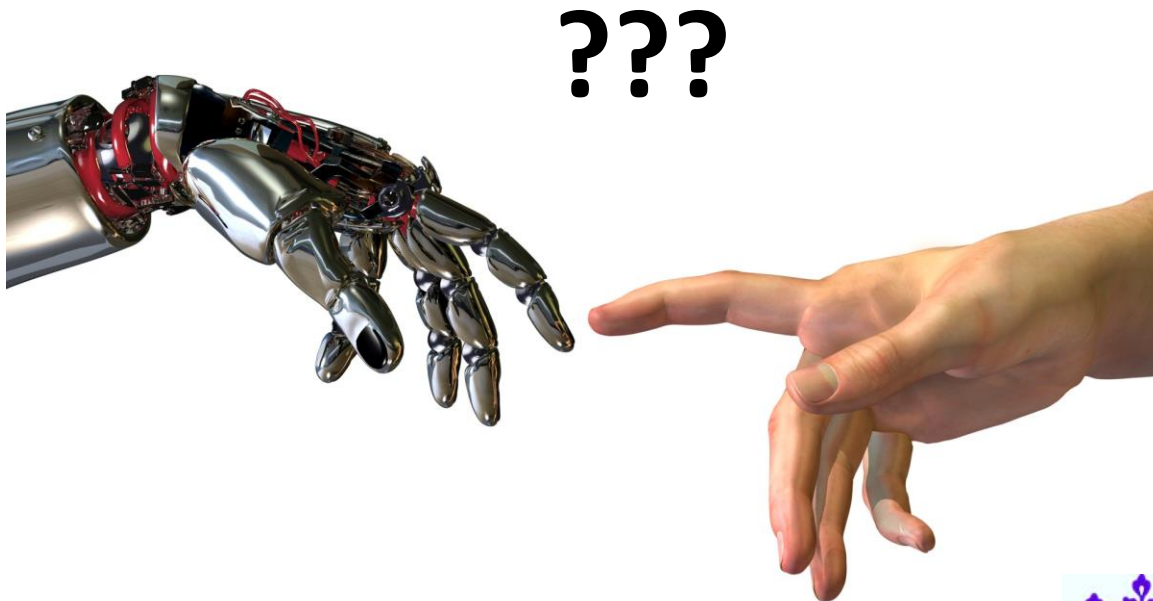
Sample Project Topic 4

Topic: Smartphone game design suitable for older adults

Sample Project Topic 5

Topic: Future relationship between humans and computers (technologies)

???

Project Setup

- Arrange group of 3-4 members (tentative)

- Decide topics (based on your own field expertise)

- Submit an A4 of your members and topic to me on <u>Oct 10 class</u>
  - Subject: <u>Informatics class – members and topics</u>
  - Brief description on what you are going to achieve
  - Member(s) list (name, email, phone)

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The project will be conducted using Software Engineering development process

Q & A

Please write any feedback regarding class to
sayans@slis.tsukuba.ac.jp
Sub: Informatics class feedback

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