Exercises in Programming2

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1. Course Description

The aim of this course is that the learners could develop practical programs.
At first, the learners overview what kinds of programs have been submitted in the former programming contests and what kinds of programs we can develop by Processing.
Second, the learners select an interesting program from sample programs and exercise the program. Then the learners discuss about the program they want to implement and present their idea.
The learner or learners whose idea is passed can start to explore the program.
The learner who can not think of his or her original idea, can develop program similar to sample programs.
The learners go toward to participate in the programming contest held in our university.
The learners can use not only Processing but also any other languages.
The theme of the program is free.
The learners are recommended to form each team consisting of around three people and collaborate with them as PBL(Problem/Project Based Learning)
After the 4th class, the learners are requested a daily report.
This course is related to DP4C and DP4M.

2. Course Objectives

The learners can do followings:
(a) plan practical programs,
(b) explain required functions for the program,
(c) implement required functions for the program,
(d) plan the schedule to go for the goal,
(e) and modify the schedule depending on the progress.
The learners must attain (b)(c)(d)(e) and somehow attain (a).

3. Grading Policy

The learners are assessed by the followings: planning of program 15%, scheduling 15%, midterm presentation 15%, final presentation 15%, and developed program 30%. The learners who get over 60% can get credits. The learners who can get over 60% can get credits.
The learners can get feedback at work progress, mid-term and final presentations and giving back reports.

4. Textbook and Reference

Textbook
Textbook:
Casey Reas and Ben Fry, Translator Takumi Funada, "Getting Started with Processing (2nd version)," O'Reilly Japan, 2016, ISBN-13: 978-4873117737.
Reference books:
(1) Jyunichiro Tawara, "Introduction to Processing programming -opensource developing environment based on Jave," CUTT system, 2010, ISBN 978-4-87783-247-6.
(2) Sunao Hashimoto, "AR programming —recipe of augmented reality by Processing," Ohmsha, 2012, ISBN-13: 9784274211744.
(3) Ryouji Hayashi, "Introduction to image processing with OpenCV based on Processing2," Kougakusya, 2015, ISBN978-4-7775-1888-3.
and so on.

5. Requirements(Assignments)

The learners review what kinds of practical program they can implement using Processing from the 1st to 3rd class.
The learners should execute programs in which they are interested before or after the class.
Let's consider carefully what kind of programs you want to develop in the course.
The learners must explore program after the 4th class.
Let's think deeply about what kinds of function the program has and how to implement the functions.
At the midterm presentation, the learners should consider and express what kind of information other learners require and want to be shared.
During the last two classes, the learners do the final presentation and report writing.The learners think about how clearly they express by speech and writing as well.
The learner must prepare and follow after and before the class. It takes about 1.5 hours.

6. Note

Before this course, the learners must take some courses such as Programming 1, Programming 2, Group Project Practice and Exercises in Programming 1.
Simultaneously with this course. the learners must study Data Structures and Algorithm and Programming Language Theory.
After this course, the learners should study programming-related classes such as Laboratory in Fundamental Computer Science and Laboratory in Computer Science
The learners can get learning materials from LMS for preparation and review.

7. Schedule

[1]	Overview of practical programs implemented by Processing and programs submitted in previous programming contests
[2]	Programming exercises
[3]	Programming exercises and submitting plan for this course
[4]	Deciding a program the learner explore in the course, submitting a master plan and schedule for the course
[5]	Developing the program
[6]	Developing the program
[7]	Developing the program
[8]	Developing the program
[9]	Developing the program and mid-term presentation
[10]	Developing the program
[11]	Developing the program
[12]	Developing the program
[13]	Developing the program
[14]	Final presentation and evaluation for each project team
[15]	Writing specification and manual for the developed program