Assignment 4
iPhone Invader (1): Views

Design presentation: Dec. 1th, 2014 in the lab   **Group size:** 2 (for A04–05)
Project due: Dec. 8th, 2014. 9:00 AM
Project presentation: Dec. 8th, 2014 in the lab

Description
This assignment is the first part of a two-week mini project to create your own iPhone version of [Space Invaders](#):

A04: Design the game and implement supporting UIs using [view controllers](#)
A05: Implement main game screen with [Sprite Kit](#)

Task
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1. *Think:* Brainstorm your game concepts. Include all following elements in your game:

   • Basic single-player Space Invaders game elements: cannon shooting aliens
   • The game has at least three levels with different difficulties
   • The player can purchase upgrades for the cannon and/or shields after each level using the score acquired in the level.
   • The game can be paused and resumed when the app goes to background or manually closed by the user.
   • The app records and show high scores.

   You have freedom for other elements of the game, e.g., visual design[*], level difficulty parameters (more enemies, faster enemies, etc.), scoring and bonuses.

2. *Prototype:* Create a low-fidelity prototype to communicate the design ([see S08 of DIS1 last year](#)). Sketches or paper prototypes to communicate your game concepts [†]. Your prototype must illustrate game input, output, and all planned screens. Prepare to present your prototype to the class in the lab on Dec. 1th (max. 5 mins/group).

Part 2: Supporting UIs
Implement the following screens in a Storyboard.

1. *High score screen:* Use `UITableViewController` to show high scores. Implement MVC with dummy high scores. Choose appropriate location to store the high scores.

2. *Power upgrade screen:* Use [Auto Layout](#) to control the geometry of at least three separate `UIViews` on the screen to show the ship, the cannon power ups, and the shield power ups. This layout must adapt appropriately in **all** screen orientations.

3. *Screens and segues:* Add placeholder view controllers for other screens of your game. Link them with segues and provide buttons to allow navigation among them.

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[*] Don't worry about visual design. Many successful iPhone games, e.g., [Doodle Jump](#) uses hand sketches.

[†] The prototype is not binding. I.e., you may change your design during the course of the assignments. The prototype does not have to be polished. As long as it communicates the concepts, it's fine.

Submission

Create a zip archive including the following items

- ❏ Snapshots of your prototype (e.g., photos, slides in PDFs, or a video showing the concepts of the game)

- ❏ The current version of your code

- ❏ `Members.txt` — Modify the template to match your information (Note an additional field about the device request)

Email your submission to iphone@cs.rwth-aachen.de

Grading

The project will be graded as a whole (A04–05).

- 1.0 — A game that clearly went above and beyond what was assigned in usability, features, or performance.

- 2.0 — A game that satisfies all programming requirements, compiles and run without any compilation errors or warnings.

- 5.0 — Late submission, submission that doesn't compile and run on Xcode 6 + iOS 8 Simulator.

Looking forward

You should try Sprite Kit tutorial to explore its capability. We recommend you to start using git for version control and collaboration.

Appendix: An example sketch of a game screen