

CS 371L
Summer 2024
Semester Project

For your semester project, you must design and develop an iOS application. While the project has a minimum set of required features, you are welcome to focus on the areas of app development that are most relevant to your personal interests. The application you build must be worthy of the amount of time available to design and build it.

This will be a group project. You will work in teams of 4. Pay close attention to the items in italics in the basic application requirements below.

Basic application requirements:

- You cannot enhance an existing product or something that you have already written. Your code for this project must be original.
- Your application must include *at least three screens / View Controllers per team member*.
- Your design must include a “Settings” screen. Define at least two behaviors in your app that the user can modify through this screen, such as “dark mode”, font style, color scheme, sound on/off, etc. The app should have default settings for these.
- Your application must use Core Data to store settings data AND some other persistent data between app launches.
- Your application must use *at least four additional frameworks*. “Frameworks” include Firebase, Multithreading, Core Location, Core Motion, Animation, Core Graphics, Local Notifications, Gesture Recognition, Core Audio, Camera, Calendar, Networking, and ARKit. You may propose others, subject to the instructor’s approval.

Phase 1: Design

Due: Friday, July 5, 2021, 11:59 pm

Description:

Create a design document that describes the application you intend to design and build.

Required paper sections:

- List of Group Members
- Application Name: the name you will use for your application.
- General Description: a general high-level description of your application. Don't get into too many details here. Generally, 2-3 paragraphs, with each paragraph 4-8 lines long.
- Framework List: a list of frameworks you plan to use in your application.
- Mockups: a visual representation of each screen in your application, as well as at least one representation of all of your screens with arrows between them to show the flow through the screens. You can also include screens in various states of usage, to make it clear what the expected visual behavior is as the user interacts with the application.
- Operational Descriptions: descriptions of how the user makes use of the interface to perform each of the available operations in the application.

Grading of the Design Document:

- Submit your design document to Canvas as a .PDF.
- Use the same mechanism to turn this in as you did for your homework assignments: **ONE** person on your team should attach your team's design document to the "Design" assignment in Canvas. **Late work will not be accepted**, so plan for contingency!
- In addition to a numeric grade, I will give you feedback on your design; this might include additional features I want implemented, features I want removed, options I want a user to be able to configure, etc.

Phase 2: Code

Due: Friday, August 16, 2021, 11:59 pm

Description:

Deliver the application you proposed.

Required deliverables:

- A .zip file of the final version of your project folder.
- A README file in your project folder containing:
 - List of team members, and name of project
 - A list of dependencies (Swift version? Xcode version? Any pods or frameworks to install first?)
 - Any special instructions your instructor will need to know in order to test your app
 - A table. Each row should contain one major feature of your project. The columns of the table are:
 - Short description of feature
 - Who worked on what percentage of it (not required for individual projects, only teams)
- A presentation / demo of your project during the last week of class. All team members will be expected to participate. We will discuss the specific requirements later in the semester.

Grading of the Project:

- Use the same mechanism to turn this in as you did for your homework assignments: **ONE** person on your team should attach your team's code to the "Final" assignment in Canvas. **Late work will not be accepted**, so plan for contingency!

General comments about your project:

There will probably be changes to a given deliverable as you develop your app. This is normal. If the changes are relatively minor, this will not impact your grade, but if the changes are significant, this may be viewed as a late deliverable, and your grade will be affected by it. **If you expect to digress significantly from your original design, make sure you discuss it with your instructor in advance to see if it will affect your grade!**

Your final release will also be graded on the quality of the implementation, both in the code and the user interface. I will be looking for clean, well-structured code, as well as a reasonably well-defined and designed UI.

Sample README file:

Team members: Cersei Lannister, Jon Snow, Danaerys Targaryen

Name of project: Dragon War Game

Dependencies: Xcode 10.2, Swift 4

Special Instructions:

- You have to open the file DragonWar.xcworkspace (as opposed to the file DragonWar.xcodeproj).
- Use an iPhone 8+ Simulator
- Before running the app, run "pod install" inside the DragonWar folder where the podfile is located
- To login with Facebook, use this test account:
email: DragonWarTest@gmail.com
password: DragonWar
- To test the connection between two players, you need to set two player mode on, and you need to run it on an iPhone and a simulator at the same time (or 2 simulators)

Feature	Description	Who/Percentage worked on
Login (including Facebook login)	Allows user to create account and login	Cersei (100%)
UI	Colors, buttons, navigation, compatibility across various phones	Cersei (50%) Dani (25%) Jon (25%)
Draw	Allow users to draw pictures	Dani (100%)

Settings	Screen to change between one/two player mode, saving lib, add photo to account, logout and delete account	Jon (100%)
Instructions	Instructions on how to play the game	Cersei (100%)
One player mode	Allows one player to create a dragon and play against AI	Cersei (90%) Jon (5%) Dani (5%)
Connect two players	Allow 2 players to setup a network connection	Dani (100%)
Two player create new scenario	Implement most UI screens, and all navigation, logic, server integration for 2 players interacting to create a scenario together	Dani (90%) Cersei (10%) (Setup for UI/ container view, Eureka integration)

Sketch

Any student who wants to use Sketch for free on one of the basement lab Macs will need to do the following:

- Run Applications->Sketch on one of the machines.
- Click the button to start a trial account.
- Enter an email address, and create a password for that trial account.
- Wait until you receive an email (sent to that email address) with a link to click to confirm the account creation.
- Once you have clicked that link, send a note to help@cs.utexas.edu to let them know what email address they used. They will send that to the Sketch folks, and they can approve that email address/account for use on the lab macs for longer than just a trial.