

A290/A590 Android Application Interface Design and Programming Final Project – Spring 2016

[LAST MODIFIED: Monday, February 6, 2017]

DESIGN NOTE: For this project, you have control over the potential “target audience” for your application. Be sure to **EXPLICITLY** address this in Phase 1 if it is relevant to what you are proposing. A target audience of “IT professionals” would probably lead you to some very different design decisions than a target audience of “children K-6”.

DUE DATES

PHASE 1: Tuesday, February 14, 2017 in class (2:30pm)

PHASE 2: Tuesday, February 21, 2017, in class (2:30pm)

PHASE 3: Friday, March 3, 2017 at 11:59:00.00pm (**SHARP**)

[FAILURE TO MEET ANY OF THESE DEADLINES WILL RESULT IN A SCORE OF ZERO (0) FOR THAT PHASE]

General Description

The purpose of this final project is to take all the skills that you gained from the course and use them to create your own Android Application using Eclipse and the Android SDK.

The actual project that you develop will involve finding a process, task, service or other “deliverable” that you can address with an Android Application. It will also be crucial that your proposed application project is **feasible** in the time available. There are several steps to this process that you will need to follow:

1. Pick a task/process/service/”deliverable” that you can address with this particular programming and design/development environment and submit a proposal, outlining what your application project will do. Submit your initial proposal for approval.
2. Storyboard your entire application interface (every screen and every control within every screen) with a focus on design and usability.
3. Work out the logical and/or programming design of your application and all related activities and controls.
4. Submit #2 and #3 for approval before beginning any serious work on your application.
5. Actually create your application, including all proper commenting and other documentation.
6. Submit your Final Android Project Application by the prescribed deadline.

Phase 0 OVERVIEW: Brainstorm and then Pick a Task, Process, or Service

Brainstorm some ideas that you would like to pursue for this project. **Write them all down!** What is going to be the focus of your project? Is there a particular task or type of task you would like to address with your application/site? Is there an area of interest you have that suggests possible projects(s)? Do you want a application that creates, manipulates, displays, or some combination? **AGAIN, write down all the ideas you come up with or consider, but make sure your list includes at least five (5) ideas.**

Phase 1 OVERVIEW: Submit Your Proposal of your Chosen Project

Before you begin any serious work, you will need to submit a brief proposal for your project. Make sure you are aware of the deadline for this submission. What you need to do in your proposal is very basic:

- 1) List all the ideas, at least five (5), that you brainstormed for Phase 0,
- 2) Explain why and how you decided on the one (1) specific project you will be describing,
- 3) Describe your proposed project in sufficient detail that the reader gets a clear idea of your goal,
- 4) clearly explain why you think this would be a useful application, and,
- 5) clearly explain why you are confident that you can successfully complete this project in the time allowed.

Phase 2a OVERVIEW: Storyboard Your Application

Once your Phase 1 is approved, you can begin the actual design of your application. The first question you need to deal with here is how best to “deliver” the functionality of your chosen task, process, or service using an application, consistent with user expectations and experience. Based on this you can sketch out what web pages you will need, what Controls and/or other visible features you will want to include, as well as the manner in which they relate to each other. You **MUST** consider how XML will help you in your design. You should always keep in mind the basic principles of Design and Usability discussed at the beginning of (and throughout) this course. You will be asked to explain how your project addresses these principles as part of Phase 2 of this Project.

Phase 2b OVERVIEW: Programming/Logical Design

You must also clearly define what programming or logical elements you need to make your application a reality. What functions and/or methods and/or activities will you need to employ? What sorts of invisible objects/controls (if any) will you need to use? What “events” will you need to handle and how? What external resources (images, data, sounds, movies, etc.) will you need your application to access and how? You are encouraged to “experiment” with some of your proposed logical features, but only insofar as they establish a “proof-of-concept” in your own mind. While 2a is where you address the visual design of your controls and screens, 2b is where you address what it will take to make them **DO** what they need to do.

Phase 2a + 2b OVERVIEW: Submit your Formal Proposal

Your application storyboards together with your logical design will represent your Phase 2 “formal proposal” for the Final Project. You do not have to wait for approval on this phase to begin working on your web pages, controls, etc., but it is in **your own best interest** to complete Phase 2 before you begin any **serious** work on the final application.

Phase 3a OVERVIEW: Create your Application

Now you are ready to actually create the application. Make sure to pace yourself – you do not want to do this all the night before.

Phase 3b OVERVIEW: Submit your Final Project

Package your Final Project in a single file that can be submitted to Canvas. **BE SURE** that you include all appropriate comments in every *.xml and *.java file that is part of your application. **ALSO make sure to include two (2) files** in the root folder. One should be a **User’s Guide** that carefully describes what your application does and how it does it for someone who has no idea what it is or how it works. Second, include a **README.TXT** file where you tell us, the evaluators, whatever we need to know to build, run and evaluate it. This file will include the target AVD, any files we need to load, copy or otherwise manipulate, and anything else we need to know. We will read **BOTH** of these files **BEFORE** we build, run and evaluate your project.

Specific Requirements and Deadlines

We will be collecting these various parts of the project in phases. The phases will be similar to the written MINI and larger work-based Assignments that you have been doing. Keep in mind that each Phase may take you more than the time you may have spent on these other assignments as they should be more involved.

Phase 1 (including Phase 0) [30 points]

Due: Tuesday, February 14, 2017 **no later than 2:30 PM** (classtime)

This will be *Step 1* from the *General Description* above. You will need to turn in a short paper in **hardcopy only** with your name and email address. You should **include all the ideas, at least five (5), from Phase 0** that you thought of for this final project – with **ONE** of your ideas clearly indicated as the one you have selected as your proposed project. You want to include a clear description of the task, process, service, or “deliverable” that you want to address with your proposed application. Make sure that you clearly and specifically **DO ALL OF THE FOLLOWING** in your Phase 1 paper:

- 1) List all the ideas (**at least five (5)**) that you brainstormed for Phase 0,
- 2) Explain why and how you decided on the specific project you will be describing,
- 3) Describe your proposed task/process/service/”deliverable” and its application in sufficient detail that the reader gets a clear idea of your goal and what your application will “look like,”
- 4) Clearly explain why you think this would be a useful application,
- 5) Clearly explain why you are confident that you can successfully complete this project in the time allowed.

SUBMISSION NOTE: Submit Phase One in **hardcopy form only** during class time on Tuesday, February 14, 2017.

Phase 2a and 2b [70 points]

Due: Tuesday, February 21, 2017 **no later than 2:30PM** (classtime)

This will be *steps 2, 3, & 4* from the *General Description* above. You will need to create an complete/entire set of storyboards for the project you are doing. **Yes, this means you will actually draw or otherwise represent on paper the overall design and component relationships of your entire application, including every screen, every visible control, all navigational elements, etc.** If you have any interactivity, you must clearly show this in the storyboard as well. **ALSO**, you will need to turn in a written document component created electronically (**not hand-written**) with your name and email address that very clearly and precisely addresses the logic of how you intend to create the under-lying functionality of your entire project application using Java/XML/Android Studio/Android SDK. Again, be sure you discuss:

- 1) What functions and/or methods and/or activities will you need to employ for your controls to work?
- 2) What sorts of invisible “objects”/controls (if any) will you need to use?
- 3) What events will you need to handle and how?
- 4) What external resources (images, data, sounds, movies, etc.) will you need your application to access and how?, and
- 5) How will your Project Design address each and all of the following:
 - a. Consistency of Elements and Style.
 - b. Provide Clear Navigation.

- c. Logical Grouping of Tasks.
 - d. Prioritization of Visual Elements.
 - e. Care for the User.
- 6) Anything else you deem appropriate.

ALSO BE SURE TO CAREFULLY REVIEW THE PHASE 2 DESCRIPTION IN THIS DOCUMENT TO BE SURE YOU HAVE ADDRESSED ALL THE MAJOR REQUIREMENTS.

General Scoring Matrix: Storyboard/Design Component: **35** points, Logical/Technical Strategy Component: **35** points.

SUBMISSION NOTE: Submit Phase Two (both Part a, and Part b) in **hardcopy form only** during class time on Tuesday, February 21, 2017. **[IMPORTANT NOTE: If you want a copy of your storyboards to work from, you are responsible for making a copy. I will be keeping the copy you turn in for reference when grading the final submission.]**

Phase 3a and 3b [100 points]

Due: NO LATER than Friday, March 3, 2017 @ 11:59:00.00 PM (**SHARP**) EARLY SUBMISSIONS WELCOME.

This will be *steps 5 & 6* from the *General Description* above. You will submit your final completed project by the time above. BE SURE to submit your entire project folder/filesystem as a single ZIPPED file to Canvas. There is already a “Final Project” Assignment for each student to submit the project on Canvas. **NOTE: Be sure your submission file is created with a WinZip-compatible tool or is a self-extracting archive file. No “.tar”, “.rar”, or “.7z” files please. If we can’t open it, we can’t grade it.**

Overall Grading Criteria

This entire project counts for 50% of your final grade and will be evaluated on a 100-point scale.

The grading will be split into 70% for “the project” and 30% for “the design process.” Because the actual design and creation process you go through is very important to the final project I am including it as a major component of the overall score/grade. The design process score will be based upon the submissions you make for Phases 1 & 2. The project is what you will submit for Phase 3.

Phase 1 will be scored on a 30-point scale and Phase 2 will be scored on a 70-point scale and the two scores added together will create a % (out of 100 possible points) that will be used to calculate the 30-point “process” part of your score. [Note the potential impact on your overall score if you **fail** to submit Phase 1 or Phase 2, you submit them **late**, or give either of them a sub-standard effort.]

Project grading will be based on the individual. I will not be grading on an purely absolute scale, but will take into account what you have shown me from the beginning, as well as how well you realized your pre-stated goals and how much of an improvement you may have made since then for your final project submission. This is designed to take into consideration the fact different students bring different levels of experience with them to this course.

HOWEVER, here are the things that we **WILL BE** looking for and the point “weight” each will carry out of the 100 points for your actual submission.

Design Components (50)

Consistency of Elements and Style (fits with stated goal/plan). (15)
Provide Clear Navigation (fits with stated goal/plan). (10)

Logical Grouping of Tasks (fits with stated goal/plan). (5)
Prioritization of Visual Elements (fits with stated goal/plan). (5)
Care for the User (consistency with expectations and experience of average user). (15)

Programming Components (50)

Effective use of both available Mark-up (XML) and Programming (Java) objects/types (20)
Effective use of events, functions, and methods (10)
Clearly written mark-up and code (organization) (10)
Clearly and properly commented code/file (5)
Documentation (User's Guide **AND** README.TXT) (5)

SUMMARY of “How will my score be calculated?”:

Phase 1 (30 points) + **Phase 2** (70 points) = up to 30 points of your **OVERALL** Final Project Score.

Phase 3 (100 points) = up to 70 points of your **OVERALL** Final Project Score.

Your average out of this 100 points (30 + 70) = 50% of your A290/A590 Final Course Grade.