

Rubric

What makes a good Android smartphone application?

Throughout the course we will be referring to the following rubric to evaluate the project milestones up to the final project deliverable. The rubric will help you identify what makes a project more or less successful, and why. It will help you to self-assess your own work and enable your peers to provide you more constructive feedback.

Don't worry if some criteria are unclear for now, you will gain understanding and familiarize with them as you progress through the course.

	levels of mastery ► dimensions/criteria ▼	doesn't meet expectation / below proficient / needs improvements	meets expectation / proficient	exceeds expectation / above proficient / sophisticated / exemplary
1.1	workflow, navigation within the application	unnatural, confusing, inconsistent	natural, easy to grasp	in addition: contextual help, help menu, hints in text input areas
1.2		requires a lot of user's actions to get to a particular, frequently used point <i>for instance, the most frequent action is to add an item from the toddler toys department into the shopping cart, but the user needs to click “add item”, then “chose dpt”, then “toys”, then “toddlers”</i>	the most common/frequent path in the application workflow requires as few clicks/actions as possible <i>for instance, there are a “add item from toddler toys dpt.” and a “add item from other dpt.” buttons, the second button leading to the choice of dpt.</i>	the path most frequently chosen by the user gets associated with a short- cut <i>for instance, if unlike other persons the user visits the “music dpt.” more often than the “toddler toys dpt.”, the short-cut button will be customized to link to the music dpt. Instead</i>
1.3		provides no feedback to confirm to the user his commands have been interpreted	lets the user know if his actions where successful or not <i>for instance, uses pop-up messages, bip or buzz sounds</i>	
1.4		obscure or easy to miss error	error messages are clearly visible	the application tries to fix the

		<p>messages</p> <p><i>for instance: “bad name”, written in the same color as the the user input</i></p>	<p>and explain what is wrong and how the user can fix the problem</p> <p><i>for instance: “bad name: names start with a capital letter and contain only letters and single quote character”, written in red under the problematic text area</i></p>	<p>problem for the user</p> <p><i>for instance: if the user types “jOhn” for his name, the application proposes to replace by “John”</i></p>
1.5		<p>the same information is asked twice</p> <p><i>for instance, the user is asked for his zip code when he wants to find the closest shop and he is asked again in another page when he places an order</i></p>	<p>information is transferred from one part of the application to the next and not asked twice</p> <p><i>for instance, when the user is asked to provide an address to process his order, the zip code field is automatically filled using information provided in a previous page</i></p>	<p>whenever possible, the application “guesses” informations to avoid that the user types them</p> <p><i>for instance, if the user provided his city, look up the zip code in a data base instead of asking it to the user</i></p>
1.6		<p>perform destructive actions without asking confirmation</p>	<p>displays confirmation dialog before performing important actions (such as deleting all data, or placing a shopping order)</p>	<p>in addition: provide a way to restore deleted data</p>
2	respect of GUI standard practices	<p>does not respect standard GUI</p> <p><i>for instance:</i></p> <ul style="list-style-type: none"> - vertical scrollbars are located on the left side - confirmation button is called “affirm” (and pairs with “annul”) - has components that look like GUI controls but aren't: 	<p>conforms to standard GUI practices</p> <p><i>for instance:</i></p> <ul style="list-style-type: none"> - vertical scrollbars are located on the right side - confirmation button is called “OK” (and pairs with “cancel”) - <u>colored</u> or <u>underlined</u> text is a clickable link 	<p>in addition: adapt to user's country usages</p>

		<ul style="list-style-type: none"> - <i>colored</i> or <i>underlined</i> text is not a clickable link - something looks like a button but doesn't initiate an action - something looks like a radio button but isn't a choice 	- buttons initiate actions	
3	accessibility	<ul style="list-style-type: none"> - color choices or font sizes don't allow for good readability - clickable areas are too small or too close to each others to allow precise clicking without zooming in 	<ul style="list-style-type: none"> - reasonable font size and contrast - at least 57 px wide X 45 px high clickable areas 	in addition: option to allow the user to configure colors and fonts
4	layout	<p>does not adapt well to some display size</p> <p><i>for instance, there is no scrollbar to reach a button at the bottom</i></p>	adapt to different display sizes	in addition: adapt to both portrait and landscape orientation
5	data input	<ul style="list-style-type: none"> - the user needs to enter data letter by letter or digit by digit at each run - display the default a-z soft keyboard when the user clicks an EditText supposed to start with a number 	<ul style="list-style-type: none"> - provides automatic completion or lists of pre-entered data to choose from - provides default values 	<p>in addition:</p> <ul style="list-style-type: none"> - save and propose previously entered data - display the appropriate soft keyboard depending on the expected kind of input
6	pauses or interruptions handling	<p>not considered:</p> <ul style="list-style-type: none"> - when incoming call is picked up or the back button is hit, music keeps playing, or data is not saved - phone rotation gives uncontrolled results 	when incoming call is picked up, music pauses and data is saved	in addition: phone rotation is handled gracefully: the user does not restart from a fresh screen with empty EditText or unchecked radio buttons, instead the screen displays the same information as before the rotation
7	bug	insufficiently tested, there are bugs which cause the application to stop even with valid user inputs	no bug under normal condition (valid user inputs)	user inputs are checked for correctness

				<i>for instance, the date Feb. 29th, 2015 will be detected as non valid and the user will be asked to correct it</i>
8	code maintainability, ease of future evolution by a different developer	<ul style="list-style-type: none"> - non or poorly indented code - no comment in the code - obscure names for methods, activities or objects... 	<ul style="list-style-type: none"> - code is indented according to conventions - code is commented - objects have meaningful names/ids 	in addition: external documentation with mockups, flowmap and textual descriptions, classes and sequence diagrams, tests suite
9	performances (not covered in this course)	<p>the app wastes battery power, or storage space, or is not responsive enough</p> <p><i>for instance:</i></p> <ul style="list-style-type: none"> - it makes a lot of useless computations - it requests localization in all its activities even though it is only really necessary in a particular one - operations which take a while to complete freeze the user interface until they are accomplished 	<p>the app is careful with power and storage resources and with responsiveness</p> <p><i>for instance:</i></p> <ul style="list-style-type: none"> - it lets the user remove some stored information (for instance the user can decide to delete the profile picture he provided at first) - time-consuming operations (such as network transfers) are performed in the background and the GUI keeps responsive 	
10	security (not covered in this course)			

Additional resources:

- **Material Design: Google's Guidelines to design for Android devices:** <https://www.google.com/design/spec/material-design/introduction.html>
- A Checklist for Designing Mobile Input Fields: <https://www.nngroup.com/articles/mobile-input-checklist/>
- Bruce Tognazzini's First Principles of Interaction Design: <http://asktog.com/atc/principles-of-interaction-design/>

- Finger-Friendly Design: Ideal Mobile Touchscreen Target Sizes: <http://www.smashingmagazine.com/2012/02/finger-friendly-design-ideal-mobile-touchscreen-target-sizes/>