

# Using Scenarios to Gather Requirements

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This document describes personas and scenarios and provides guidance for using them during the requirements-gathering stage of product development.

## Personas

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A persona is a short description of a specific imaginary person. Usually, a product will have several user types. It is useful to develop a couple of personas for each type. Personas can be used in scenario-building exercises. Each persona should include the following elements:

- Biographical information about the imaginary person (name, age, occupation)
- Brief sketch of a typical day or other block of time
- Personality traits that affect how the person does work related to your product
- Information about his/her level of experience with the type of technology you are using

Personas are useful because they help focus our scenarios. As we work with personas, we become familiar with the background and experiences of each one, and we may think of them as actual people. As we write our scenarios we will begin to notice how the same activity may play out differently depending on who the user actually is.

Personas can be saved and re-used from project to project, so it is useful to keep a library of the ones you have developed.

## Scenarios

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A scenario is a description of an activity that takes place while someone is using a product or service. Scenarios can be as brief as one sentence or as long as several paragraphs. Each scenario should include the following elements:

- Prerequisites (what has happened prior to this particular scenario?)
- One or more personas (who is involved?)
- Activities (what is happening?)
- Results (what is the ending-state of the scenario?)

Scenarios are useful because they force us to think about how actual people will really use the product we are developing. At the scenario-writing stage, it's more important to focus on what the experience will actually be like from the point of view of the people in the scenario, rather than trying to pin down technical details of how the product will work.

## Deriving Requirements from Scenarios

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By reading between the lines of our scenarios we can start to compile a list of *assumptions* about our product, user and system *requirements* for our product, and *issues* that we will need to resolve. From this list we will develop our requirements specification.

Assumptions are basic facts or limitations that we know we have to work with. For example, some products assume that all access will be via a web browser. Issues are unresolved questions that arise as we work on scenarios; these questions will need to be answered, either by finding a solution or by deciding not to include something in the current version of the product. Both assumptions and issues should be noted in a finished requirements document.

Requirements are the basic functions that a system needs to be able to carry out in order to perform the task(s) for which it was designed. The meat of a requirements document is, of course, the list of requirements. *User requirements* are functions that someone using the system

will see or do. *System requirements* (also called technical requirements) are behind-the-scenes, technical functions that the system must be capable of doing in order to support the user requirements. You don't need to separate requirements by type in a requirements document, although you can if you wish.

To get requirements out of scenarios, ask yourself the following questions as you examine each scenario:

- What is the user trying to do?
- What part of that task is facilitated by the system or product?
- What part of that task is independent of the system or product?
- What has to happen "behind the scenes" while the user does this task?
- What does the user see on the screen while s/he is working on the task?

The answers to these questions will lead to statements of user and system requirements.

The list of issues will also be included in the requirements document so we can keep track of outstanding problems.

## Examples

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Here are some examples of personas and scenarios for using Pachyderm.

### User Personas

Our two key user types are *students* and *faculty*. Students work through the unit, ask questions, and complete assessment exercises. Instructors create the materials, answer questions, and evaluate student assessment exercises. A third user type is the *administrator/tech support person*, who has high-level access to the site and who assists in solving technical problems. Other user types are possible. It may also be helpful to divide our main user types into several subtypes, such as:

#### Faculty

- Early adopters
- Regular users of dependable technology
- Faculty who don't use technology much
- Faculty who are hostile to the idea of using technology at all
- Faculty from different disciplines

#### Students

- Especially technology-savvy students
- Regular users of dependable technology
- Students who don't use technology much
- Students who fear technology and avoid using it at all
- Students from different majors

*These personas are meant to be examples of possible users and are entirely fictitious. Any resemblance to any person(s), living or dead, is coincidental.*

### Sample Student Personas

*Kerry* is a third-year student at Hall University. She has been studying Art History for several years, including high school classes as well as university courses. She is especially interested in nineteenth-century French art. She lives on campus, has a computer of her own, and is familiar with using the web and email.

*Todd* has returned to school after several years to complete his undergraduate degree. He attended a community college when he graduated from high school, but after his second year

there he decided to live abroad for a while. After living and working in Italy for five years, he has enrolled at Book University to work towards a degree in art education. His love of Italian architecture has led him to focus his coursework in that area. Todd lives off-campus and has a modem and an older computer at home. He also works  $\frac{3}{4}$  time at a local winery.

### **What Our Personas Tell Us**

Our personas give us certain facts about Kerry and Todd that may influence the way they use Pachyderm. For instance, since Kerry lives on campus and has her own computer, we may assume that she has a reliable high-speed internet connection. Todd, on the other hand, lives off campus and has an older computer; he may have a slower connection. Since he works  $\frac{3}{4}$  time, he may spend less time online than Kerry.

### **Sample Instructor Personas**

Dr. Zauzig teaches Art History at Hall University. She is not very interested in technology, but she understands that her students are, and she is able to get some help from the IT department when she needs it. One of her graduate students knows how to make web pages and often helps her. Dr. Zauzig has been collaborating with Dr. Wilson, a professor at Book University, to create an online unit that they can both use in their courses.

Dr. Wilson is a professor of Art History at Book University. Last year, his IT department put on a series of workshops about digitizing images, and he began to scan his extensive collection of art and architecture photographs. He has quite a large library of scanned images now. Although he wouldn't describe himself as technologically savvy, he is able to pick things up if someone takes the time to show him, and now he has become the department expert on digitizing images.

### **What Our Personas Tell Us**

The faculty personas tell us that both professors have access to help from their IT departments. We also know that Dr. Wilson is familiar with digital images, while Dr. Zauzig probably is not.

### **Sample Scenarios**

These scenarios demonstrate some of the most common activities that we expect users (both students and faculty) to need to do. For the purpose of these scenarios, we will imagine that the unit we are building has been completed and is already in use. Some of the scenarios below are not possible with Pachyderm in its current form, but we are trying to identify what we would like to be able to do with it, not just what can already be done with it.

This is not a complete scenario document. There are many other scenarios that should be created before we write requirements.

#### *Scenario 1: Learning About Renoir*

*Persona:* Kerry

*Pre-requisites:* Kerry has enrolled in the class and has a URL for the online course materials.

Sitting down at her computer in the dorm to work on this week's lesson, Kerry checks the course syllabus and finds that this lesson focuses on a particular artist, Renoir. She launches the module provided by her teacher and reads a short biography of the artist (the historical and social climate during his lifetime, etc). Kerry sees that there are little thumbnails of several of his artworks on the screen. She selects one and it zooms to a larger size, while the others fade away. While the large artwork image is still visible, she can read descriptions of the piece by an art historian, an art critic, and by the artist himself. She explores several artworks in this way.

#### *Scenario 2: Completing an Online Assignment*

*Persona:* Todd

*Pre-requisites:* Todd can log on to the course and access online materials and has already explored the section on Renoir several times.

Logging on from home over his modem, Ted finds that this week's lesson includes an online assignment. He reads the instructions; he is asked to compare two works of art and critique both. There is a form in the module. When he accesses it, he finds spaces to record his name and his responses. The names of the two pieces he is to compare and critique are already filled in. He can also see images of both artworks while he works. When he finishes his assignment, he submits the form.

### *Scenario 3: Adding Material to a Module*

*Persona:* Dr. Wilson

*Pre-requisites:* Dr. Wilson has created a module.

Dr. Wilson has gathered four more paintings by Renoir as well as contextual information about each which he wishes to add to the module his class will be using. He goes to a certain website and identifies himself (for instance, with a login and password). A list of all the modules he has authored appears. He selects the Renoir module and goes into editing mode, where he can upload the new images and text. He selects display screens for each and indicates where on each screen to put the image and where to put the text. He is able to add links to supplemental materials and assignment questions. When he is finished, he saves the module and publishes it; the old one is replaced by the new one.

### **Other Possible Scenario Topics**

In order to complete a useful requirements document, more scenarios should be developed. More instructor scenarios might include demonstrating a module in class or creating an assignment. Student scenarios might include reading instructor comments on an assignment or preparing a module of their own as a team project.

Of course, the potential uses described here are very complex. It might not be necessary to allow students to fill out assignments online, or for instructors to create custom assignments. You could choose to assume that the modules will be entirely display-oriented, and any assignments would have to be created separately (either simple instructions, or printable templates). In that case, simply list those decisions under "assumptions" in your requirements document. By creating personas and writing scenarios, you can define the scope of your project in clear, easy-to-understand language.

### **Reference**

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For more information on scenario-based development, I recommend the following book:  
Carroll, John M. [Making Use: Scenario-Based Design of Human-Computer Interactions](#). Morgan Kaufmann Publishers, San Francisco, CA: 2002.