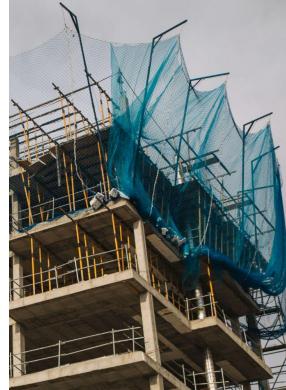


Agile Software Engineering

Software Engineering Course – 2
2024-2025



Agenda

01

Requirements

02

User Personas

03

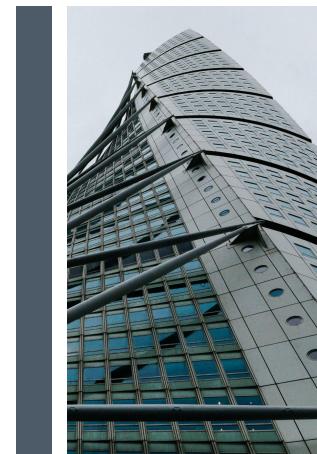
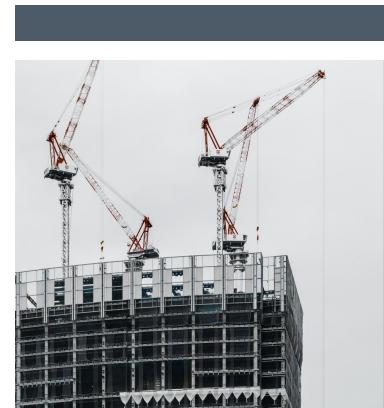
Features

04

Product Backlog

05

Managing technical risk



Requirements Gathering

Informal Requirements
Gathering

Personal Experience

Empirical Evidence

Business Analysis

Formal Requirements
Gathering

Survey

Market Research

Business Analysis

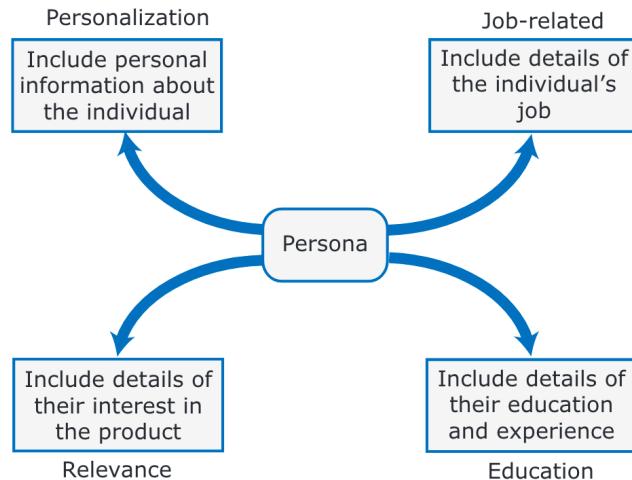
Agile

FACEMASH

User Personas

Who are we building this for?

Figure 3.4 Persona descriptions



User Personas

Who are we building this for?

Figure 3.4 Persona descriptions

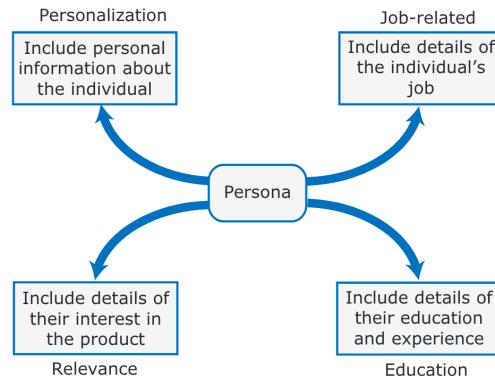


Table 3.4 A persona for an IT technician

Elena, a school IT technician

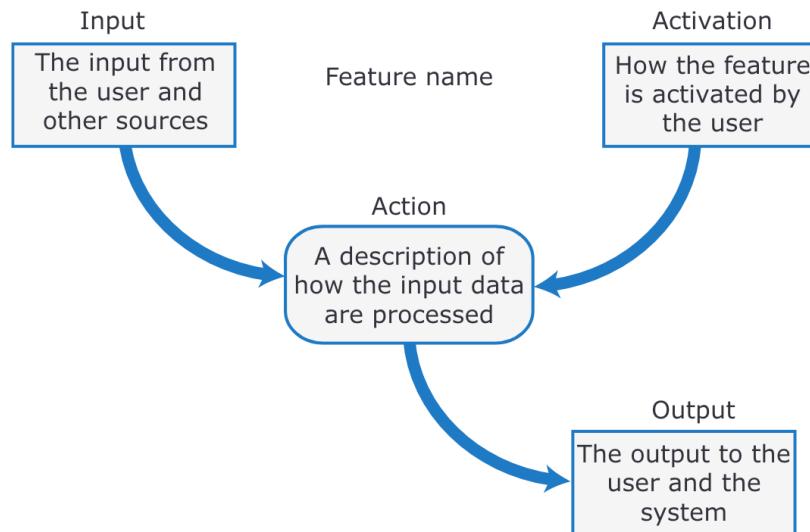
Elena, age 28, is a senior IT technician in a large secondary school (high school) in Glasgow with over 2000 students. Originally from Poland, she has a diploma in electronics from Potsdam University. She moved to Scotland in 2011 after being unemployed for a year after graduation. She has a Scottish partner, no children, and hopes to develop her career in Scotland. She was originally appointed as a junior technician but was promoted, in 2014, to a senior post responsible for all the school computers.

Although not involved directly in teaching, Elena is often called on to help in computer science classes. She is a competent Python programmer and is a “power user” of digital technologies. She has a long-term career goal of becoming a technical expert in digital learning technologies and being involved in their development. She wants to become an expert in the iLearn system and sees it as an experimental platform for supporting new uses for digital learning.

Derive scenarios from User Personas (ESP p.69 - 75)

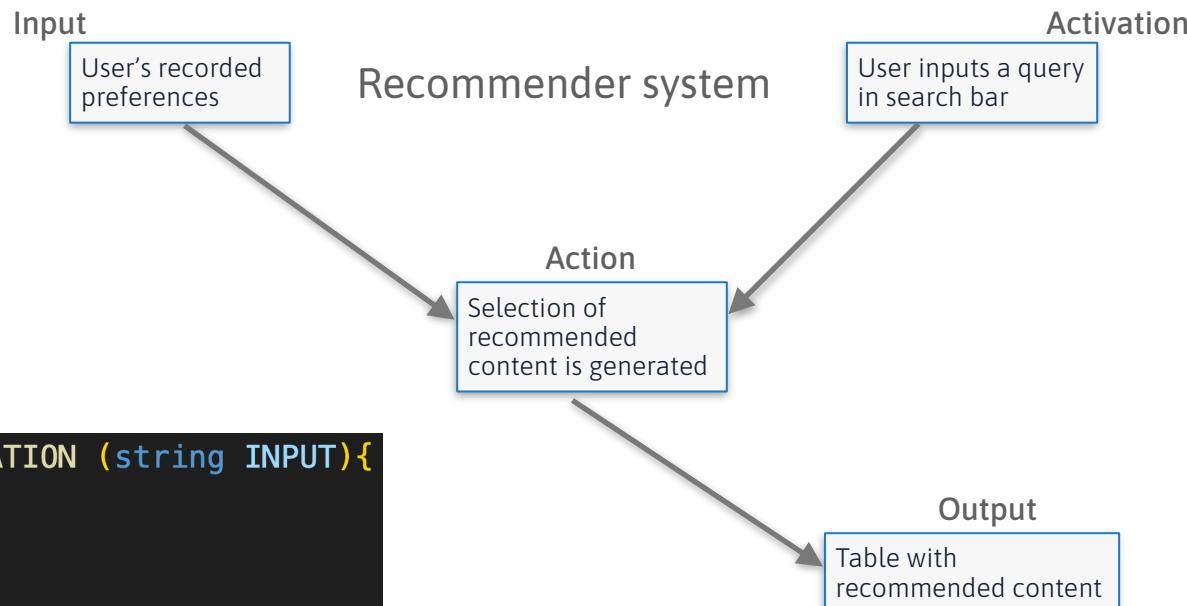
Thinking in Features

Figure 3.2 Feature description



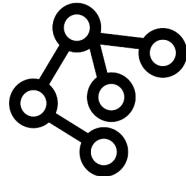


Thinking in Features



```
function ACTIVATION (string INPUT){  
    //...  
    //ACTION  
    //...  
    return OUTPUT;  
}
```

Anatomy of a User Story



As a <*type of user*> I want <*some feature, capability of the system*> so that <*I achieve some goal*>

A specific type of user with a specific, identifiable job

A capability, function or feature that is required for the system to support the user

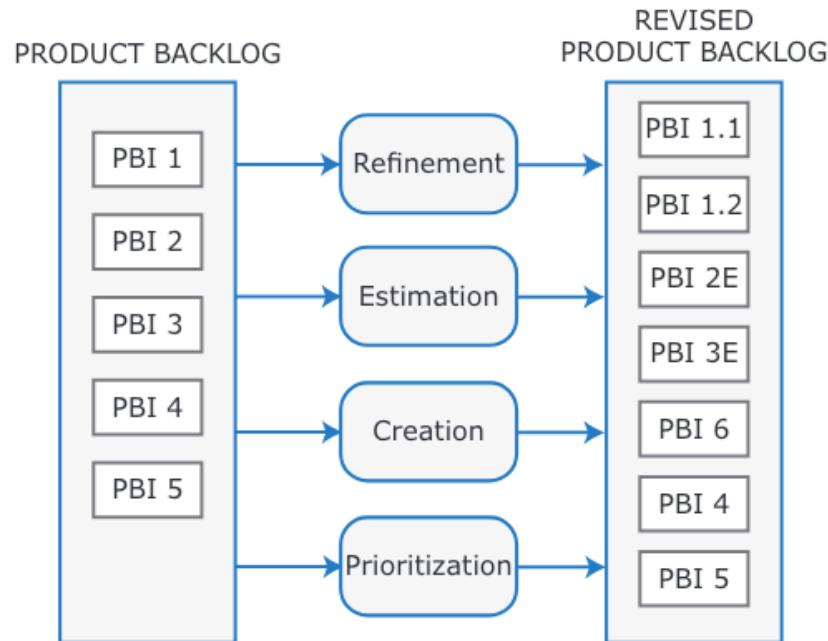
The goal the user is looking to achieve, or the value they are looking to derive using the system

Product Backlog

Backlog (665 issues)		0	0	0	Create sprint
<input checked="" type="checkbox"/>	EX-1 As a user, I want a sleek and intuitive user interface				
<input checked="" type="checkbox"/>	EX-2 As a user, I want a built-in photo editor with advanced filters an...				
<input checked="" type="checkbox"/>	EX-3 As a user, I want seamless integration with all social media platforms				
<input checked="" type="checkbox"/>	EX-4 As a user, I want real-time notifications for all activities on the platform				
<input checked="" type="checkbox"/>	EX-5 As a user, I want an AI-powered recommendation engine for per...				
<input checked="" type="checkbox"/>	EX-6 As a user, I want offline access to all features and content				
<input checked="" type="checkbox"/>	EX-7 As a user, I want the ability to customize every aspect of the application				
<input checked="" type="checkbox"/>	EX-8 As a user, I want a built-in video editor with professional-grade features				
<input checked="" type="checkbox"/>	EX-9 As a user, I want a comprehensive analytics dashboard with adva...				
<input checked="" type="checkbox"/>	EX-10 As a user, I want support for multiple languages and localization				
<input checked="" type="checkbox"/>	EX-11 As a user, I want a chatbot for instant customer support				

<https://theproductmanager.com/topics/product-backlog-examples/>

Product Backlog



Product Backlog

The image shows a product backlog interface with the following sections:

- Sprint 1**: Contains 3 issues:
 - EX-666: As a new user, I want to sign up for a Spotify account.
 - EX-667: As a user, I want to log in to my Spotify account.
 - EX-668: As a user, I want to search for songs and artists.
- Sprint 2**: Contains 3 issues:
 - EX-669: As a user, I want to create and manage playlists.
 - EX-670: As a user, I want to play songs from my library.
 - EX-671: As a user, I want to discover new music based on my preferences.
- Near Future**: Contains 3 issues:
 - EX-672: As a user, I want to follow and unfollow artists.
 - EX-673: As a user, I want to view and edit my profile information.
 - EX-674: As a user, I want to share songs or playlists with my friends.
- Backlog**: Contains 4 issues:
 - EX-675: As a user, I want to like and comment on songs.
 - EX-676: As a user, I want to explore curated playlists and recommendations.
 - EX-677: As a user, I want to create and manage collaborative playlists.
 - EX-678: As a user, I want to personalize my home screen with favorite artists or art...

Each issue item includes a checkbox, a description, a "TO DO" dropdown, and a user icon. Buttons for "Start sprint", "Create sprint", and "Create issue" are also present.

Product Backlog

Backlog 10 issues

Create sprint

...

- As a user, I want to have a spell-checking feature that highlights misspelled words 1.0.0 Basic Text Editing EX2-5 Web Editor
- As a user, I want Grammarly to provide advanced grammar suggestions 1.0.0 Advanced Editing EX2-6 Web Editor
- As a user, I want Grammarly to detect potential instances of plagiarism 1.1.0 Advanced Editing EX2-7 Web Editor
- As a user, I want Grammarly to provide suggestions for improving the readability of my text 1.2.0 Advanced Editing EX2-8 Web Editor
- As a user, I want Grammarly to ensure consistency in my writing by 1.2.0 Advanced Editing EX2-9 Web Editor
- As a user, I want Grammarly to analyze the readability of my text 1.3.0 Readability Analysis EX2-10 Web Editor
- As a user, I want Grammarly to help me improve the structure and flow of my writing 1.3.0 Readability Analysis EX2-11 Web Editor
- As a user, I want Grammarly to suggest alternative word choices 1.3.0 Readability Analysis EX2-12 Web Editor
- As a user, I want Grammarly to provide real-time writing assistance 1.0.0 Real-time Writing Assis... EX2-13 Browser Extension

Product Backlog

User Story: As a user, I want to sign up for a new account.

Requirements:

- Implement a registration form with the following fields:
 - Username: Allow the user to enter a unique username for their account.
 - Email: Provide a field for the user to input their email address.
 - Password: Include a password field for the user to set their account password.
- Implement password validation rules to ensure security:
 - Minimum password length of 8 characters.
 - Requirement for a combination of uppercase and lowercase letters, numbers, and special characters.
- Email Verification:
 - Integrate an email verification process for account activation.
 - Send an email to the provided email address with a verification link.
 - Upon clicking the verification link, verify the email and activate the user's account.
- Handle Error Cases:
 - Implement error handling for scenarios such as duplicate usernames or invalid email addresses.
 - Display appropriate error messages to the user and prompt them to correct the information.

User Story: As a user, I want to integrate my images with Social Media Platforms.

Requirements: We want the user to be able to directly post images to social media. We're currently looking at integrating with Instagram and Twitter.

Product Backlog



Product Backlog Template
This is a Hustle Badger template. Get more practical how-to guides, templates and case studies [HERE](#).
How to use this sheet: make a copy for your private use & edit there - so that others can continue to use this master

OBJECTIVE	Increase annual recurring revenue (ARR) by 1% (\$1.2m) by 30th April 2023										
Name	Theme	Description	PRD	Jira	every win	Reach	Impact	Confidence	Effort		
Google sign in "Free" -> "Basic"	Account creation	Allow users to sign up with Google account	Notion	Jira	23-Mar	40%	\$740,776	30%	5		
	Pricing options	Reposition "free" membership as "basic" membership	Notion	Jira	25-Mar	100%	\$90,000	30%	2		
Magic link	Account creation	Allow users to sign up with email address	Notion	Jira	05-Apr	60%	\$250,000	30%	8		
Monthly payment	Pricing options	Allow users to purchase paid membership	Notion	Jira	25-Apr	100%	\$150,000	30%	14		
Trust signals	Check out	Add trust signals to check out	Notion	Jira	Early May	100%	\$123,000	5%	3		
Streamline check out	Check out	Remove unnecessary fields from check out	Notion	Jira	Early May	100%	\$123,000	5%	3		
Rate limit basic	Pricing options	Allow basic members to access one lesson	Notion	Jira	Late May	100%	\$123,000	5%	15		
Paypal payments	Check out	Accept PayPal payments in check out	Notion	Jira	Early Jun	20%	\$123,000	5%	15		
Geo pricing	Check out	Allow users from major markets (DE, FR, IT, ES)	Notion	Jira	Q3	40%	TBD	0.5%	TBD		
Free trial	Pricing options	Give users 7 days free premium access before billing	Notion	Jira	Q3	100%	TBD	0.5%	TBD		
Remove ad hoc payments	Pricing options	Remove ability for users to purchase lessons individually	Notion	Jira	Q3	100%	TBD	0.5%	TBD		
SMS sign up	Account creation	Allow users to sign up with SMS instead of email	Notion	Jira	Q3	20%	TBD	0.5%	TBD		

<https://www.hustlebadger.com/what-do-i-need-to-build-a-product-backlog/>

Formulating a task

<action> the <result> <by|for|of|to> <object>

Product Backlog

Table 2.9 Code completeness checklist

State	Description
Reviewed	The code has been reviewed by another team member who has checked that it meets agreed coding standards, is understandable, includes appropriate comments, and has been refactored if necessary.
Unit tested	All unit tests have been run automatically and all tests have executed successfully.
Integrated	The code has been integrated with the project codebase and no integration errors have been reported.
Integration tested	All integration tests have been run automatically and all tests have been executed successfully.
Accepted	Acceptance tests have been run if appropriate and the Product Owner or the development team has confirmed that the product backlog item has been completed.

Kahoot!

Joining GitHub Classroom

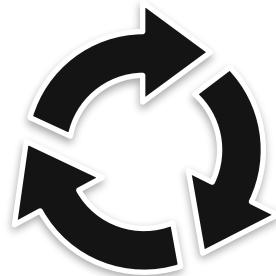
<https://classroom.github.com/a/GqkA5iUB>

<https://forms.office.com/e/R7cs9MT57K>

Managing technical risks



People

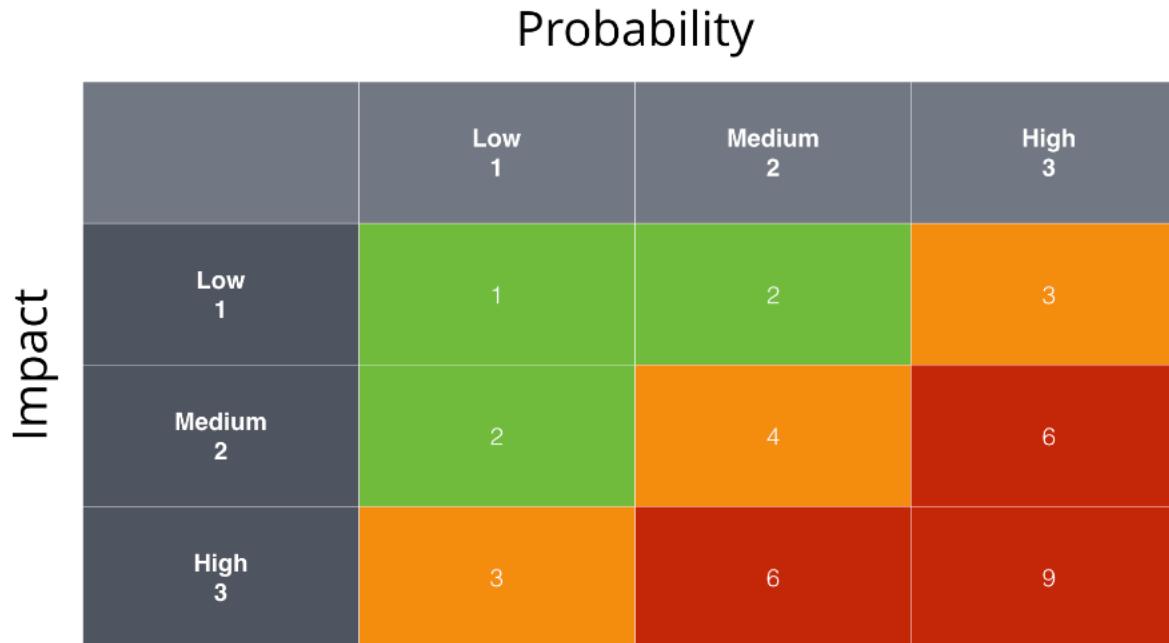


Process



Technology

Managing technical risks



A probability/impact matrix for quantifying risk

Actionable points

Identify main functional Software Requirements

Create User Personas

Build Features

Build some User Stories

Build the Backlog

Next time on ...

Finish onboarding Form and GitHub Classroom

Course 3

Please read from *Engineering Software Products* (Sommerville):

- Chapter 4 – Software Architecture (p.92-104)

Please read from *Software Architecture for Developers* (Brown):

- Chapter 4 - What is “software architecture”? (p.6-11)

