Week 3.2: Agile Requirements Specification

**Week**: 3 **Day**: Friday

**Objective**:

* Analyse and Specify Software Requirements in Agile.
* Develop User Roles, Personas, and Scenarios.
* Write User Stories.

# Task 1: Define User roles (30 minutes)

**Goal:** To define user roles for the assessment project

**Instructions:**

* + In your assessment group, analyse the case study for the inventory management system.
  + Write a list of user roles using the following template:
  + Monitor inventory levels in warehouses to ensure efficient stocking and order fulfilment.

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| Role | Description |
| Store Manager | **Oversees The daily operation of QuickBuy store**  **Responsibilities *→***   * Search certain products * Analyse certain product category * Can monitor stock levels in real time so that they can avoid understocking or overstocking * They would be able to reorder products based on demand and sales * They would be able to track which products are doing well and poorly * They would be able to identify products that are selling well or poorly so that they can optimize sale and stock space. |
| Warehouse manager | **Manages the distribution centre before products are shipped out to QuickBuy store**  **Responsibilities *→***   * Search for categories such as frozen foods, fruits, vegetables, meat etc * Can track product from warehouse to store. * Track stock levels to prevent understocking at the warehouse or overstocking. * Monitor inventory levels in warehouse to ensure efficient order fulfilment. |
| Category manager | **Oversees specific product categories across all QuickBuy stores.**  ***Responsibilities →***   * Analyse sales trends within their category * Identify new product opportunities * Negotiate with suppliers for better terms * Develop pricing strategies - Ensure product quality and consistency across stores * Collaborate with store managers to optimize category performance |

# Task 2: Define Personas and Scenarios (40 minutes)

**Goal:** To define user personas for the assessment project

**Instructions:**

* + In your assessment group, select the key three user roles in the system.
  + Check: <https://aserg.codeberg.page/shu-dev-process/en/modelling/analysis/user-stories-and-personas/#personas>
  + Create two personas for each of the selected roles.
  + Minimum of two personas must include accessibility requirements
  + For simplicity, you may follow the following template:

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| **Sarah Taylor - Store Manager** | |
| * Age: 34 * Occupation: Store manager at QuickBuy store * Location: Manchester, UK * Role: Store Manager * Disability: Mild hearing loss * Quote: "I need a system that helps me manage inventory efficiently and creates clear visual reports." | |
| **Background** | Sarah has been managing QuickBuy stores for 5 years. She excels at team management and customer service but struggles with complex inventory systems due to her hearing impairment. Sarah relies on visual cues and written communication in her daily work. |
| **Goals** | * Efficiently manage store inventory, create easy-to-understand reports, and improve store performance. |
| **Frustrations** | * Audio-based alerts in current systems, complex inventory management interfaces, and difficulty in quickly accessing real-time stock information. |
| **Technology** | **Devices →**   * Laptop (with visual alert software), tablet for on-the-floor management.   **Assistive Technology →**   * Visual alert software for notifications, closed captioning for video calls. |
| **Scenario** | Sarah logs into the inventory management system using her laptop. She navigates to the dashboard, which displays a clear visual overview of current stock levels across different product categories. Sarah notices that the fresh produce section is running low on certain items. She clicks on the produce category to view detailed stock information. Using the system's visual reordering tool, she quickly selects the items that need restocking and sets the required quantities. The system provides immediate visual feedback, showing the updated stock projections. Sarah then generates a visual report of weekly sales trends, which she can easily interpret without relying on audio cues. She uses this information to adjust the store layout, moving high-performing products to more prominent positions. Throughout this process, Sarah receives important notifications as visual pop-ups on her screen, ensuring she doesn't miss any critical information due to her hearing impairment. |

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| **Mark Johnson - Store Manager** | |
| * Age: 42 * Occupation: Store manager at QuickBuy store * Location: Birmingham, UK * Role: Store Manager * Disability: Colour blindness * Quote: "A system with customizable colour schemes would help me interpret data more easily.” | |
| **Background** | Mark has over 15 years of retail experience. His colour blindness makes it challenging to interpret color-coded charts and graphs, which are common in inventory management systems. |
| **Goals** | * Accurately analyse product performance, optimize store layout based on sales data, and efficiently manage stock levels. |
| **Frustrations** | * Colour-dependent data visualizations, complex menu structures, and difficulty in quickly identifying trending products or low stock items. |
| **Technology** | **Devices →**   * Laptop (with visual alert software), tablet for on-the-floor management.   **Assistive Technology →**   * Visual alert software for notifications, closed captioning for video calls. |
| **Scenario** | Mark logs into the inventory management system, which immediately presents him with a customized colour scheme optimized for his colour blindness. He navigates to the product performance dashboard, where sales trends are displayed using patterns and shapes in addition to colours, allowing him to easily interpret the data. Mark uses the system's advanced search function to quickly locate specific products, with results presented in a clear, high-contrast format. He then reviews the store layout optimization tool, which uses size and position rather than just colour to indicate high-performing product locations. Throughout his work, Mark relies on text labels and numerical data alongside visual representations to ensure accurate interpretation of all information. When generating reports, he selects from a range of accessible templates that present data in formats he can easily read and analyse. The system also provides audio descriptions of complex charts or graphs at Mark's request, further enhancing his ability to make informed decisions about stock management and store layout. |

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| **Emily Chen - Warehouse Manager** | |
| * Age: 38 * Occupation: Warehouse manager at QuickBuy distribution centre * Location: Leeds, UK * Role: Warehouse Manager * Disability: Mobility issues (uses a wheelchair) * Quote: "I need a system that's fully navigable by keyboard for efficient warehouse management.” | |
| **Background** | Emily has been managing warehouses for 10 years. Her mobility issues require her to use a wheelchair, making it essential for her to have a fully accessible inventory management system. |
| **Goals** | * Streamline warehouse operations, ensure accurate and timely order fulfilment, and maintain optimal stock levels. |
| **Frustrations** | * Systems that require extensive mouse use, lack of keyboard shortcuts for common tasks, and difficulty in accessing all areas of the warehouse physically. |
| **Technology** | **Devices →**   * Laptop with ergonomic keyboard, tablet mounted on wheelchair.   **Assistive Technology →**   * Voice recognition software, keyboard-only navigation tools. |
| **Scenario** | Emily accesses the warehouse management system using her laptop with an ergonomic keyboard. She navigates through the interface entirely using keyboard shortcuts, efficiently moving between different sections. Emily checks the incoming shipments schedule and uses the system's voice command feature to assign storage locations for new stock. She then reviews the order fulfilment queue, using keyboard controls to prioritize urgent orders. Emily generates a report on stock movement trends, which the system presents in an accessible format with clear, high-contrast charts and the option for text descriptions. She uses this information to optimize the warehouse layout, inputting changes through a series of keyboard commands. Throughout her tasks, Emily relies on the system's audio feedback and screen reader compatibility to confirm her actions and review important data without the need for extensive mouse use. |

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| **David Okonkwo - Warehouse Manager** | |
| * Age: 45 * Occupation: Warehouse manager at QuickBuy distribution centre * Location: Glasgow, UK * Role: Warehouse Manager * Disability: Dyslexia * Quote: "A system with clear, simple language and the option for text-to-speech would be incredibly helpful.” | |
| **Background** | David has extensive experience in logistics and warehouse management. His dyslexia make it challenging to quickly read and interpret complex text-based information. |
| **Goals** | * Efficiently manage warehouse inventory, coordinate seamless product movement, and ensure accurate order processing. |
| **Frustrations** | * Dense text-heavy interfaces, complex jargon in system messages, and lack of audio support for important notifications. |
| **Technology** | **Devices →**   * Desktop computer, smartphone for mobile access   **Assistive Technology →**   * Text-to-speech software, dyslexia-friendly fonts and colour schemes |
| **Scenario** | David logs into the warehouse management system, which greets him with a clean, uncluttered interface using simple language and clear icons. He navigates to the inventory overview section, where the system presents information in short, easy-to-read bullet points. David uses the text-to-speech feature to have the system read out complex product codes and detailed shipment information, ensuring accuracy in his work. He then moves to the order processing queue, where the system uses color-coding and symbols to indicate order priority, making it easier for David to quickly assess and manage tasks. When inputting data for a new shipment, David uses the system's autocomplete feature, which helps him avoid spelling errors. Throughout his shift, David relies on the system's audio alerts for important notifications, allowing him to stay informed without constantly reading text on the screen. |

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| **Rachel Patel - Category Manager** | |
| * Age: 36 * Occupation: Category manager for fresh produce at QuickBuy * Location: London, UK • Role: Category Manager * Disability: Visual impairment (low vision) * Quote: "I need a system with high contrast options and the ability to zoom in on charts and graphs.” | |
| **Background** | Rachel has been managing the fresh produce category for QuickBuy for 7 years. Her low vision requires her to use screen magnification software and high contrast settings. |
| **Goals** | * Analyse sales trends effectively, identify new product opportunities, and optimize pricing strategies for fresh produce. |
| **Frustrations** | * Small text in reports, low contrast interfaces, and inability to easily zoom into detailed charts and graphs. |
| **Technology** | **Devices →**   * Laptop (with screen reader software), smartphone (with screen magnification features)   **Assistive Technology →**   * JAWS (Job Access with Speech) screen reader, built-in magnification on her phone and desktop |
| **Scenario** | Rachel logs into the category management system using her high-contrast display settings. She navigates to the sales analysis dashboard, where she can easily zoom in on charts and graphs using her screen magnification software. The system's interface automatically adjusts to her zoom level, ensuring all information remains visible and properly formatted. Rachel reviews the weekly sales trends for fresh produce, with the data presented in large, clear fonts and high-contrast colours. She uses the voice command feature to generate a report on top-selling items and potential new product opportunities. When negotiating with a supplier via the system's integrated communication tool, Rachel activates the live transcription feature, which displays the conversation in real-time in a large, easy-to-read format. Throughout her work, Rachel relies on the system's keyboard shortcuts and audio cues to navigate efficiently, reducing eye strain from constant screen viewing. |

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| **Tom Wilson - Category Manager** | |
| * Age: 41 * Occupation: Category manager for dairy products at QuickBuy * Location: Bristol, UK • Role: Category Manager * Disability: Repetitive strain injury in wrists * Quote: "Voice command features would make it easier for me to navigate the system and input data.” | |
| **Background** | Tom has been managing the dairy category for 5 years. His repetitive strain injury makes prolonged use of a mouse and keyboard painful. |
| **Goals** | * Develop effective pricing strategies, negotiate with suppliers efficiently, and ensure consistent product quality across stores. |
| **Frustrations** | * Systems requiring extensive typing or mouse use, lack of voice input options, and difficulty in navigating complex menu structures without aggravating his injury. |
| **Technology** | **Devices →**   * Ergonomic desktop setup, tablet for mobile work   **Assistive Technology →**   * Voice recognition software, ergonomic input devices (vertical mouse, split keyboard) |
| **Scenario** | Tom starts his day by logging into the category management system using voice commands. He navigates to the pricing strategy tool, where he reviews current dairy product prices across all stores. Using voice input, Tom adjusts prices for several items based on market trends and competitor analysis. He then moves to the supplier management section, where he uses voice commands to schedule a virtual meeting with a key milk supplier. During the meeting, Tom uses the system's voice-to-text feature to take notes and create action items. Afterwards, he reviews the quality control reports for dairy products, using voice commands to filter and sort the data. The system reads out key metrics and alerts, allowing Tom to identify any quality issues without extensive typing or mouse use. Throughout the day, Tom relies on the system's voice-activated features to perform his tasks efficiently, minimizing strain on his wrists. |

# Task 3: Define User Stories (40 minutes)

**Goal:** To define user stories for the assessment project

**Instructions:**

* + In your assessment group, define four user stories for the assessment project
  + Discuss your user stories with tutors to get formative feedback, then refine your user stories.
  + Follow this template:

Table 1: User Story 01 - Title

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| **Title**: New User | **Priority**: High | **Estimate:** .. |
| As a new user, I need a registration form with clear, simple fields, so that I can easily sign up for the system. | | |
| **Acceptance Criteria**  ***Scenario 1 - Successful Registration***  A. User enters valid details in all fields and submits the form.  B. System confirms registration and redirects to the login page.  ***Failure Scenario 1 - Invalid Details***  A. User submits form with an invalid email or password mismatch.  B. System displays error message. | | |
| **Stage of Implementation**  Make a Sign-Up Page including a registration form with mandatory fields like username, email, and password. Include validation checks for email format and password strength. | | |

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| **Title**: Warehouse manager | **Priority**: High | **Estimate:** .. |
| As Warehouse Manager, I need a secure login feature with username and password, so that I can access the system safely. | | |
| **Acceptance Criteria**  ***Scenario 1 - Successful Login***  A. Manager enters valid details in all fields and submits the form.  B. System authenticates and grants access to homepage.  ***Failure Scenario - Incorrect Login Details***  A. Manager enters wrong credentials.  B. System shows an error message. | | |
| **Stage of Implementation**  Make a Login Page with the required field like Username / Email and Password. Also implement error handling for innocent passwords. We can also implement a “Remember me” option for added convenience. | | |

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| **Title**: Warehouse Manager | **Priority**: High | **Estimate:** .. |
| As a Warehouse Manager, I need a password recovery option, so that I can reset my password if I forget it. | | |
| **Acceptance Criteria**  ***Scenario 1 - Successful Password Recovery***  A. Manager requests password recovery, receives email, and successfully resets password.  B. System confirms the password reset.  ***Failure Scenario - Incorrect Email***  A. Manager enters an unregistered email.  B. System shows an error message. | | |
| **Stage of Implementation**  Include "Forgot Password" link on the login page, directing users to a recovery form to input their email. Provide an email with a reset link. | | |

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| **Title**: Store manager | **Priority**: High | **Estimate:** .. |
| As a Store Manager, I need a dashboard to monitor real-time stock levels, so that I can prevent understocking or overstocking. | | |
| **Acceptance Criteria**  ***Scenario 1 - Accurate Stock Display***  A. Dashboard shows up-to-date stock levels, with low-stock items highlighted.  B. Alerts or visuals indicate low levels.  ***Failure Scenario - Incorrect Stock Data***  A. System shows incorrect stock levels.   * B. Low-stock indicators fail to highlight critical items. | | |
| **Stage of Implementation**  Make a Dashboard / Home Page with visual cues for low-stock or overstocked items. Include a color-coded indicator system. | | |

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| **Title**: Store manager | **Priority**: High | **Estimate:** .. |
| As a Store Manager or warehouse manager, I need search functionality for products, so that I can quickly locate specific items in the inventory. | | |
| **Acceptance Criteria**  ***Scenario 1 - Successful Product Search***  A. Manager searches for an item and relevant products appear.  B. Search results include product name and stock status.  ***Failure Scenario - No Results or Errors***  A. Manager searches for an existing item but no results show.  B. System displays error message. | | |
| **Stage of Implementation**  Add a search bar with autocomplete for efficient product lookup by name, SKU, or category. | | |

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| **Title**: Warehouse manager | **Priority**: High | **Estimate:** .. |
| As a Warehouse Manager, I need a filter to view products by category (e.g., frozen foods, fruits), so that I can quickly locate items in a specific section. | | |
| **Acceptance Criteria**  ***Scenario 1 - Successful Filter by Category***  A. Manager selects a category and system displays relevant products.  B. Category filter works consistently across inventory data.  ***Failure Scenario - Inaccurate Results***  A. Manager selects a category, but irrelevant products appear.  B. System fails to apply category filter accurately. | | |
| **Stage of Implementation**  Make a dropdown filter for categories. Ensure the filter displays only products within the selected category. | | |

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| **Title**: Store manager | **Priority**: High | **Estimate:** .. |
| As a Store Manager, I need to filter products based on sales performance (e.g., top-selling, low-selling), so that I can optimize the store layout accordingly | | |
| **Acceptance Criteria**  ***Scenario 1 - Accurate Sales Performance Filter***  A. Manager applies “Top Selling” filter, and system shows relevant products.  B. Filter results reflect accurate sales data.  ***Failure Scenario - Incorrect Performance Data***  A. System displays wrong products under selected filter.  B. Data fails to load or display properly. | | |
| **Stage of Implementation**  Make a filter for sales performance that displays products by top-selling or low-selling status. | | |

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| **Title**: Store manager | **Priority**: High | **Estimate:** .. |
| As a Store Manager, I need to filter products by stock levels (e.g., low stock, high stock), so that I can prioritize reordering for low-stock items. | | |
| **Acceptance Criteria**  ***Scenario 1 - Successful Stock Level Filter***  A. Manager applies “Low Stock” filter and system shows item matching criteria.  B. Filter accurately displays products by stock levels.  ***Failure Scenario - Filter Malfunction***  A. Filter does not display correct stock levels.  B. Irrelevant products appear in the filtered list. | | |
| **Stage of Implementation**  Make filters by stock level, allowing users to view only low or high-stock items. | | |

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| **Title**: Store manager | **Priority**: High | **Estimate:** .. |
| As a Store Manager, I need to quickly create and issue invoices for in-store/over-the-counter sales, so that she can provide customers with a seamless and professional checkout experience. | | |
| **Acceptance Criteria**  ***Scenario 1 - Successful Invoice Generation***  A. Manager enters details and generates an accurate invoice.  B. Invoice prints or emails without errors.  ***Failure Scenario - Invoice Errors***  A. System miscalculates totals or fails to generate invoice.  B. Errors occur during printing or emailing. | | |
| **Stage of Implementation**  Make an invoice creation tool with fields for item details, quantity, price, and tax. Allow quick printing and email options. | | |

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| **Title**: Store manager | **Priority**: High | **Estimate:** .. |
| As a Store Manager, I need a system that lets me generate visually clear sales reports, so that I can analyse trends and adjust the store layout to highlight high-performing products. | | |
| **Acceptance Criteria**  ***Scenario 1 - Successful Report Generation***  A. Manager generates a report, and system presents it with accurate data.  B. Visuals are clear and easy to interpret.  ***Failure Scenario - Report Inaccuracy***  A. Systems shows incorrect or incomplete data in report.  B. Visuals do not display properly or lack clarity. | | |
| **Stage of Implementation**  Make a sales-report page including a reporting tool that generates sales reports with visual charts and graphs, suitable for quick analysis. | | |

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| **Title**: Store manager | **Priority**: High | **Estimate:**  .. |
| As a Store Manager, I need colour-blind-friendly visualizations, so that I can interpret data without relying on colour alone. | | |
| **Acceptance Criteria**  ***Scenario 1 - Accessible Visualization***  A. Data visualization displays with colour-blind-friendly elements.  B. Patterns or shape accurately represent data  ***Failure Scenario - Colour-Only Dependence***  A. System relies solely on colour, making data hard to interpret.  B. Accessibility settings fail to work. | | |
| **Stage of Implementation**  Provide colour-blind friendly options like patterns and text indicators for visualizations. | | |

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| **Title**: Warehouse manager | **Priority**: High | **Estimate:**  .. |
| As a Warehouse Manager, I need text-to-speech functionality, so that I can listen to product codes and shipment information. | | |
| **Acceptance Criteria**  ***Scenario 1 - Successful Text-to-Speech Activation***  A. Manager selects text and system reads it aloud.  B. Audio is clear and correctly pronounced.  ***Failure Scenario - Audio Errors***  A. System fails to provide audio for selected text. | | |
| **Stage of Implementation**  Integrate text-to-speech for product codes, names, and shipment details on hover or select. | | |

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| **Title**: Category manager | **Priority**: High | **Estimate:**  .. |
| As a Category Manager, I need the ability to zoom in on charts, so that I can analyse sales trends accurately. | | |
| ***Scenario 1 - Successful Zoom Functionality***  A. Manager zooms in on chart and data scales accurately.  B. Chart remains readable and clear at all zoom levels.  ***Failure Scenario - Chart Scaling Issues***  A. Chart distorts or data is obscured when zoomed.  B. System does not allow zooming. | | |
| **Stage of Implementation**  Enable a zoom function on all data visualizations, especially sales charts, with smooth scaling. | | |

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| **Title**: Warehouse manager | **Priority**: High | **Estimate:**  .. |
| As a Warehouse Manager, I need keyboard-only navigation options, so that I can access features without a mouse. | | |
| **Acceptance Criteria**  ***Scenario 1 - Full Keyboard Accessibility***  A. Manager navigates entire system using keyboard shortcuts.  B. System correctly shifts focus to each interactive element with visible focus indicators.  ***Failure Scenario - Incomplete Navigation Path***  A. Certain elements (i.e. dropdowns, modal windows, buttons etc.) are inaccessible via keyboard.  B. Focus indicators are unclear or missing, making navigation difficult. | | |
| **Stage of Implementation**  Ensure all features are accessible via keyboard shortcuts, with a visual focus indicator. | | |