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Title: Quality Assurance/Tester Assignment

Instructor: eHealth 4 EVERYONE

Question 1.  
Automation Challenges in SQA Testing:

SQA teams face various hurdles when implementing and maintaining it. Here are some key challenges and solutions:

Challenge 1: Choosing the Right Tool:

* Problem: With an overabundance of tools available, selecting the right one that aligns with specific needs and testing types can be overwhelming.
* Solution:
  + Thorough research: Analyze project requirements, budget, and team skillset to shortlist suitable tools.
  + Free trials and demos: Utilize trial periods and demos to test drive the tools and assess their compatibility.
  + Community feedback: Seek recommendations and insights from online communities dedicated to automation testing.

Challenge 2: Test Script Maintenance:

* Problem: Automated tests can become brittle and prone to failure due to frequent UI changes or code updates. Maintaining and updating scripts can be time-consuming and resource-intensive.
* Solution:
  + Focus on reusable components: Design test scripts with modularity in mind, using reusable components that adapt to different testing scenarios.
  + Leverage Page Object Model (POM): Implement POM to isolate UI elements and minimize the impact of UI changes on test scripts.
  + Utilize data-driven testing: Employ data-driven testing frameworks to separate test data from test logic, simplifying script maintenance.

Challenge 3: Skill Gap and Training:

* Problem: Not all QA team members might possess the necessary programming skills or expertise to effectively write and maintain automated tests.
* Solution:
  + Invest in training: Provide training programs or workshops to equip team members with the required skills for automation tools and frameworks.
  + Hire skilled personnel: Consider recruiting individuals with specific automation expertise to complement your existing team.
  + Foster a culture of learning: Encourage knowledge sharing and peer-to-peer learning within the team to build collective expertise.

Challenge 4: Lack of Integration with CI/CD Pipelines:

* Problem: Siloed testing processes can hinder the efficiency and effectiveness of automation. Integrating testing with CI/CD pipelines allows for early defect detection and faster feedback loops.
* Solution:
  + Choose automation tools that offer CI/CD integrations: Select tools that seamlessly integrate with your existing CI/CD pipeline for smooth and efficient testing.
  + Automate deployment processes: Automate deployment tasks to minimize manual intervention and enable faster release cycles.
  + Establish clear communication channels: Ensure effective communication between development, QA, and operations teams to facilitate smooth integration of testing within the CI/CD pipeline.

Challenge 5: Measuring the ROI of Automation:

* Problem: Quantifying the return on investment (ROI) of automation efforts can be challenging, making it difficult to justify resource allocation and budget.
* Solution:
  + Define clear goals and metrics: Establish specific goals for automation, such as defect reduction, test coverage improvement, or cycle time reduction, and track relevant metrics to measure progress.
  + Conduct cost-benefit analysis: Evaluate the costs associated with automation tools, training, and maintenance against the benefits achieved in terms of efficiency, quality, and reduced risks.
  + Continuously refine your approach: Monitor the results of your automation efforts and adjust your strategies based on the data to optimize ROI

Question 2:

Test script for the [Health Outcomes and Service Coverage Dashboard](https://msdat2-staging.e4eweb.space/dashboard/Health_Outcomes_and_Service_Coverage) on the Msdat platform.

Objective: Verify the functionality and accuracy of the Health Outcomes and Service Coverage Dashboard on the Msdat platform.

Target Users: QA Testers, Analysts

Pre-requisites:

* Access to the Msdat platform with appropriate user credentials.
* Familiarity with the functionalities of the dashboard.
* Test data.

Tools:

* Automation framework
* Test reporting tool (optional)

Test Cases:

1. Dashboard Loading and Accessibility:

* TC1.1: Verify the dashboard loads correctly without any errors.
* TC1.2: Verify the dashboard elements are properly rendered and visually appealing.
* TC1.3: Verify the dashboard is accessible for users with disabilities (WCAG compliance).

2. Data Visualization:

* TC2.1: Verify all charts and graphs display data accurately and are visually clear.
* TC2.2: Verify legends and tooltips are present and provide relevant information.
* TC2.3: Verify the ability to interact with charts (e.g., zoom, filter).

3. Data Filters:

* TC3.1: Verify all available filter options are functional and display expected results.
* TC3.2: Verify the ability to combine multiple filters effectively.
* TC3.3: Verify filter selections are maintained when navigating within the dashboard.

4. Drill-down Functionality:

* TC4.1: Verify the ability to drill down to deeper levels of data for specific indicators.
* TC4.2: Verify drill-down paths lead to accurate and relevant information.
* TC4.3: Verify the ability to navigate back to previous levels easily.

5. Interactive Elements:

* TC5.1: Verify that hover-over information displays correctly and provides useful details.
* TC5.2: Verify map interactions (e.g., zooming, clicking on markers) function as expected.
* TC5.3: Verify any other interactive elements work properly and deliver intended functionalities.

6. Data Export:

* TC6.1: Verify the ability to export data from the dashboard in different formats (e.g., CSV, Excel).
* TC6.2: Verify that exported data matches the displayed information accurately.
* TC6.3: Verify data formatting and structure in exported files are as per requirements.

7. Additional Tests:

* Perform tests with different user roles and permissions (if applicable).
* Test the dashboard under different browser versions and screen resolutions.
* Include negative testing scenarios (e.g., invalid data, filter combinations).
* Consider performance testing (loading times, responsiveness).

Test Case Sheet Provided in named spreadsheet in Excel Spreadsheet in Repository.