Module 6: Hands-On Team Lab - Building a Secure Repository for VA Digital Procurement System

Introduction to the Lab:

Welcome to the practical application phase of your training! In this module, you'll be applying everything you've learned so far by participating in a team-based lab exercise. Your mission is to collaboratively create a secure and efficient GitHub repository for a new digital procurement system for the Department of Veterans Affairs. This system aims to enhance the management of medical equipment contracts, ensuring transparency, efficiency, and compliance with federal standards.

Pre-Lab Briefing:

- Each team will designate one member as the **Repository Owner**. This person will be responsible for creating the repository and inviting other team members as collaborators.
- Make sure every team member is logged in to their GitHub account before starting the lab.

Assigning Roles:

Within your team, assign the following roles. Think about each member's strengths and how they can best contribute to the project:

- **Repository Owner**: This person will create the repository and manage access. They're responsible for the overall integrity and organization of the project in addition to sharing the primary screen in the breakout session.
- **Project Manager**: Keeps the project on track, coordinates tasks, and ensures the team is communicating effectively.
- **Security Analyst**: Focuses on implementing and maintaining security measures within the repository, ensuring all actions comply with necessary regulations.
- **Developer/Contract Specialist**: Responsible for the technical aspects and content of the project, such as code or contract documents.
- **Documentation Specialist**: Ensures all changes, decisions, and processes are well-documented and clear.

Section 1: Team Formation and Role Assignment

1. **Confirming Team Roles**:

- Quickly review and confirm the roles within your team: Repository Owner, Project Manager, Security Analyst, Developer/Contract Specialist, and Documentation Specialist.
- Ensure each team member understands their role and responsibilities.

2. **Initial Team Meeting**:

- Have a quick huddle to outline your strategy for the lab exercise. Make sure everyone knows the scenario: building a digital procurement system for the Department of Veterans Affairs.
- Repository Owner should be ready to create the repository and later add all team members as collaborators.

Section 2: Repository Setup and Configuration

1. **Creating the Repository (Repository Owner)**:

- Go to your GitHub homepage.
- Click the "+" icon at the top right corner and select "New repository."
- Name your repository "VA-Digital-Procurement-System."
- Choose "Private" as the repository visibility to ensure the confidentiality of the project.
- Initialize the repository with a README file. This file will later be edited to include project details.
- Click "Create repository."

2. **Adding Team Members as Collaborators (Repository Owner)**:

- Once the repository is created, click on the "Settings" tab of the repository.
- On the left sidebar, click "Manage access."
- Click on the "Invite a collaborator" button.
- Enter the GitHub usernames of your team members and select them from the dropdown.
- Choose "Write" access for all team members and send the invitations.

Section 3: Building the Repository Structure

1. **Discussing and Planning the Structure (All Team Members)**:

   - Have a brief discussion about how you will structure your repository. Create, at minimum, folders for contracts, documentation, and project management.

2. **Creating Folders and Files (Repository Owner with Input from All Team Members)**:

   - Go back to the main page of your repository.
   - Click on "Add file" > "Create new file."
   - To create a folder, type the folder name followed by '/'. For example, create a folder named "Contracts" by typing "Contracts/".
   - Inside each folder, you can also create a README.md file by typing "Contracts/README.md". Write a brief description or leave it to be edited later by the Documentation Specialist.
   - Repeat this process to create all necessary folders and files as per your team's discussion.

Section 4: Implementing Security and Compliance Measures

1. **Setting Up Branch Protection Rules (Security Analyst)**:

   - Go to the "Settings" tab of your repository and then to "Branches" in the sidebar.
   - Under "Branch protection rules," click "Add rule."
   - Apply the rule to the "main" branch.
   - Check "Require pull request reviews before merging" and "Require status checks to pass before merging."
   - Save the changes.

2. **Reviewing Access and Permissions (Security Analyst and Repository Owner)**:

   - Ensure that the access levels of all collaborators are appropriate.
   - Discuss any additional encryption or secrets management needed for sensitive data and plan to implement them.

Section 5: Collaborative Features in Action

1. **Using Issues for Task Management (All Team Members)**:

- Go to the "Issues" tab of your repository and click "New issue."
- Create an issue for a task you're assigned. Title it appropriately and add a description.
- Assign the issue to yourself and add labels like "documentation" or "development" to categorize the issue.
- Once you've completed your task, mark the issue as closed.

2. **Practicing Pull Requests and Code Reviews (Developer/Contract Specialist and All Team Members)**:

- Make a change in a file or add a new file to the project.
- Go to the "Pull requests" tab and click "New pull request."
- Select your branch and the main branch to compare changes.
- Title your pull request and describe the changes you've made.
- Assign team members to review the pull request.
- Once reviewed and approved, merge the pull request into the main branch.

3. **Setting Up Project Boards for Workflow Management (Project Manager)**:

- Go to the "Projects" tab of your repository and create a new project board.
- Name it "Procurement Workflow" and select a template like "Basic kanban."
- Add cards for each task or issue and move them across columns like "To do," "In progress," and "Done" as work progresses.

Section 6: Final Review and Presentation

1. **Conducting Final Review (Repository Owner and Security Analyst)**:

- Ensure all tasks are completed, issues are closed, and pull requests are merged.
- Conduct a final security check and ensure compliance documentation is in order.

2. **Preparing for Presentation (All Team Members)**:

- Organize your repository so that it's presentable.
- Prepare to showcase your repository's structure, security measures, collaboration strategies, and any challenges or successes you encountered.

Section 7: Lab Conclusion and Feedback

Reflect on the lab experience and how the practical application of modules 1-4 helped in completing the lab exercise. Consider what strategies worked well, what challenges you faced, and how you overcame them.

1. **Team Reflection (All Team Members)**:

- Gather as a team and discuss each member's contributions and the overall workflow.
- Reflect on how effectively you used GitHub's features to manage the digital procurement system.
- Discuss any difficulties you encountered with the repository setup, security implementation, or collaboration and how you resolved them.

2. **Repository Owner Final Actions**:

- Make sure that all branches are merged, and all issues are closed.
- Ensure that the repository's README file clearly documents the purpose of the project, the team members, and a summary of the tasks completed.
- Confirm that all necessary security and compliance measures are documented and in place.

3. **Preparing for Feedback (All Team Members)**:

- Be ready to present your repository setup and the collaborative process to the instructor and other teams.
- Prepare to receive constructive feedback on your repository's structure, security measures, and collaborative approach.
- Think about questions you might have for other teams or the instructor about different approaches or solutions.

Section 8: Presentation and Feedback Session

1. **Team Presentation**:

- Each team will have a set amount of time to present their repository and discuss their approach, challenges, and successes.
- Showcase the structure of your repository, the security measures you implemented, and how you collaborated using GitHub's features.
- Highlight any unique strategies or solutions your team used to complete the lab exercise.

2. **Receiving Feedback**:

- Listen to feedback from the instructor and other teams. Take notes on what aspects were well-received and any areas for improvement.
- Engage in a constructive discussion, asking questions and providing your perspectives on the lab exercise.

3. **Providing Feedback to Peers**:

- Offer constructive feedback to other teams on their repository setups and collaborative processes.
- Share any tips or strategies that your team found particularly effective.

Section 9: Lab Wrap-Up

1. **Individual and Team Reflection**:

- Take a moment to individually reflect on what you learned during the lab and how you can apply this knowledge to real-world scenarios.
- As a team, discuss how this exercise might impact your approach to future projects, especially those related to federal contracting and procurement.

2. **Documentation and Reporting**:

- Ensure that all work completed during the lab is well-documented within the repository. This includes finalizing any pending documentation, closing out issues, and ensuring the README file is up to date.
- The Repository Owner should ensure that a final report or summary of the lab exercise is included in the repository, detailing the objectives, process, outcomes, and any lessons learned.

3. **Lab Closure**:

- Confirm that all team members have completed their tasks and that the repository reflects the collective effort of the team.
- The Repository Owner should make a final commit to signal the end of the lab exercise, including any last-minute changes or updates.
- Teams can then submit their repository URL to the instructor for review and evaluation.