Assignment 1: Vulnerability Labs

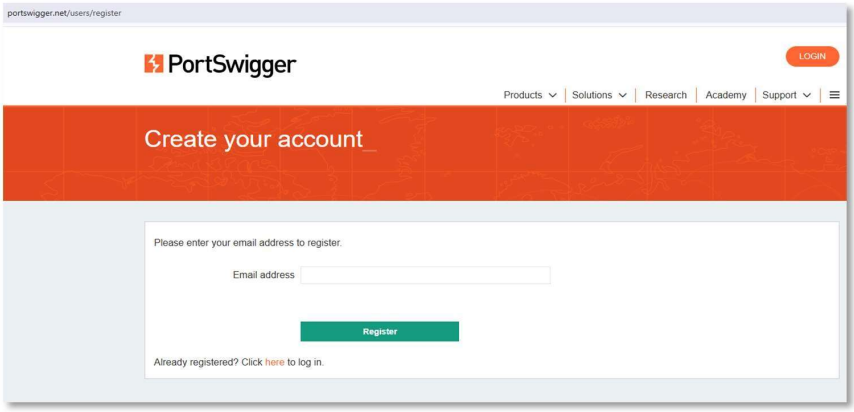
Version: February 17, 2026

COSC 3371
Spring 2026

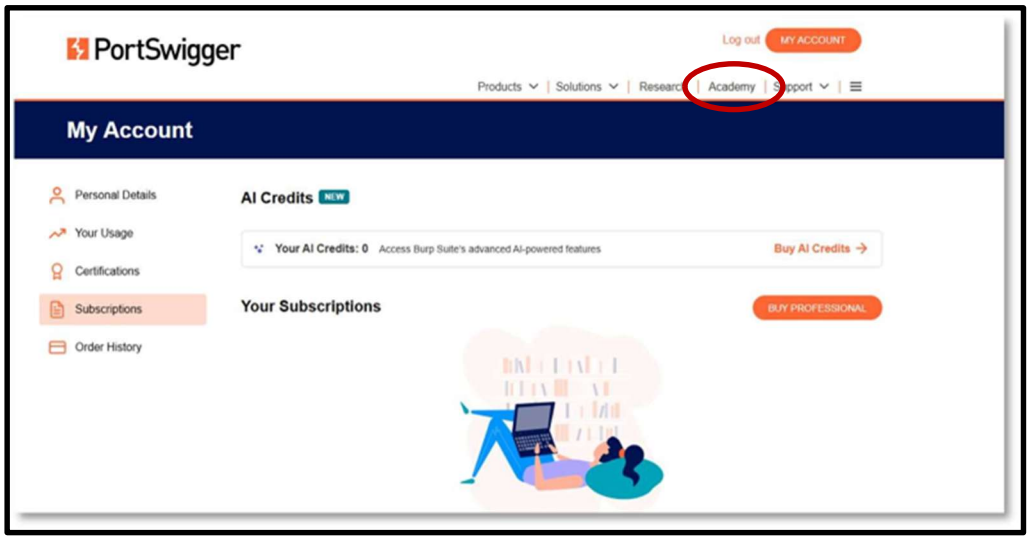
[1] Objectives: The goal of this assignment is to build your practical understanding of common web application vulnerabilities by working through guided labs on the PortSwigger Web Security Academy platform. The best way to learn about vulnerabilities is by trying them. These safe, structured exercises will help you recognize insecure coding patterns, understand how attackers exploit them, and strengthen your ability to design and implement more secure systems.

[2] Description: Follow the instructions below. The website will provide plenty of help.

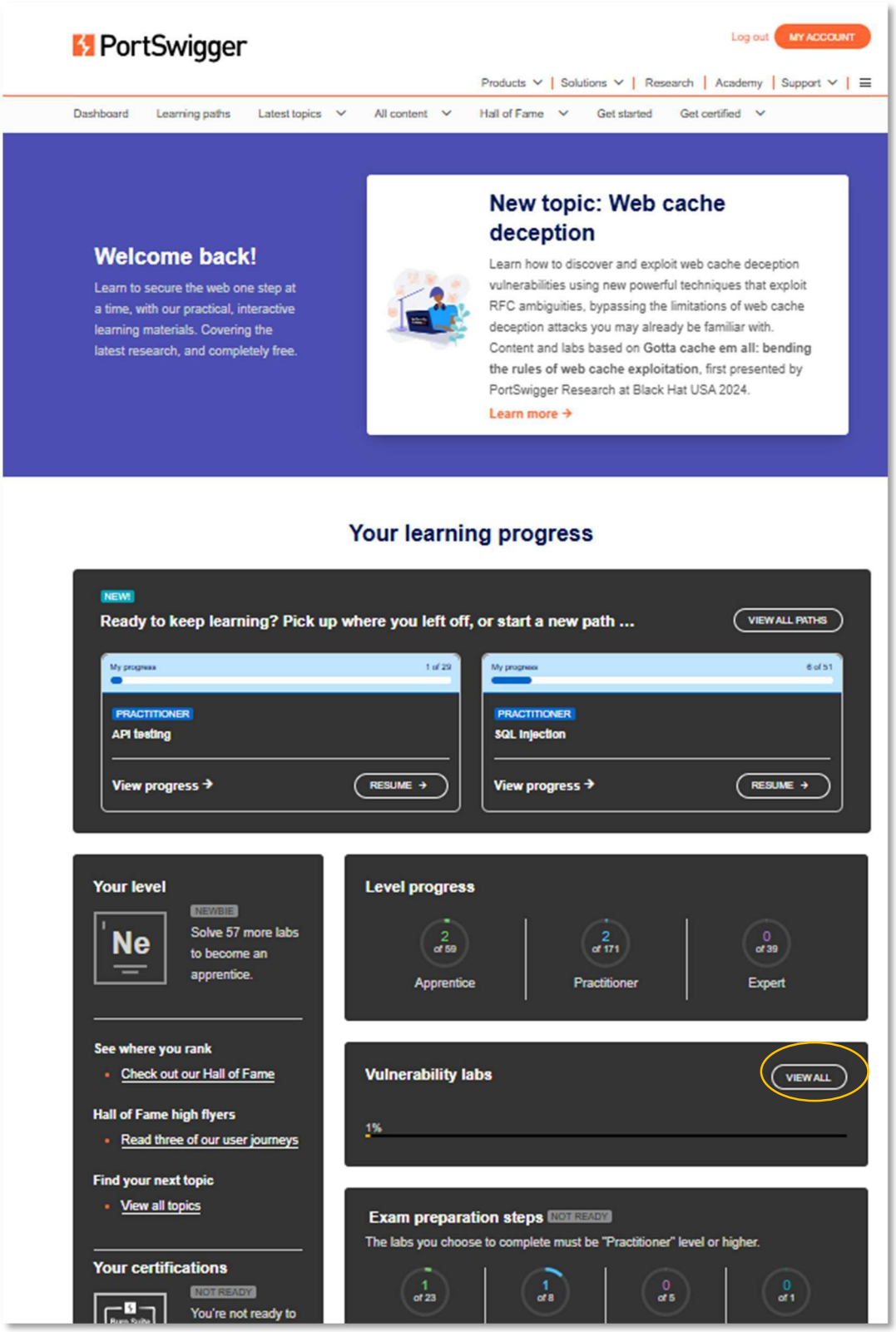
1. Register an account at https://portswigger.net/users/register.



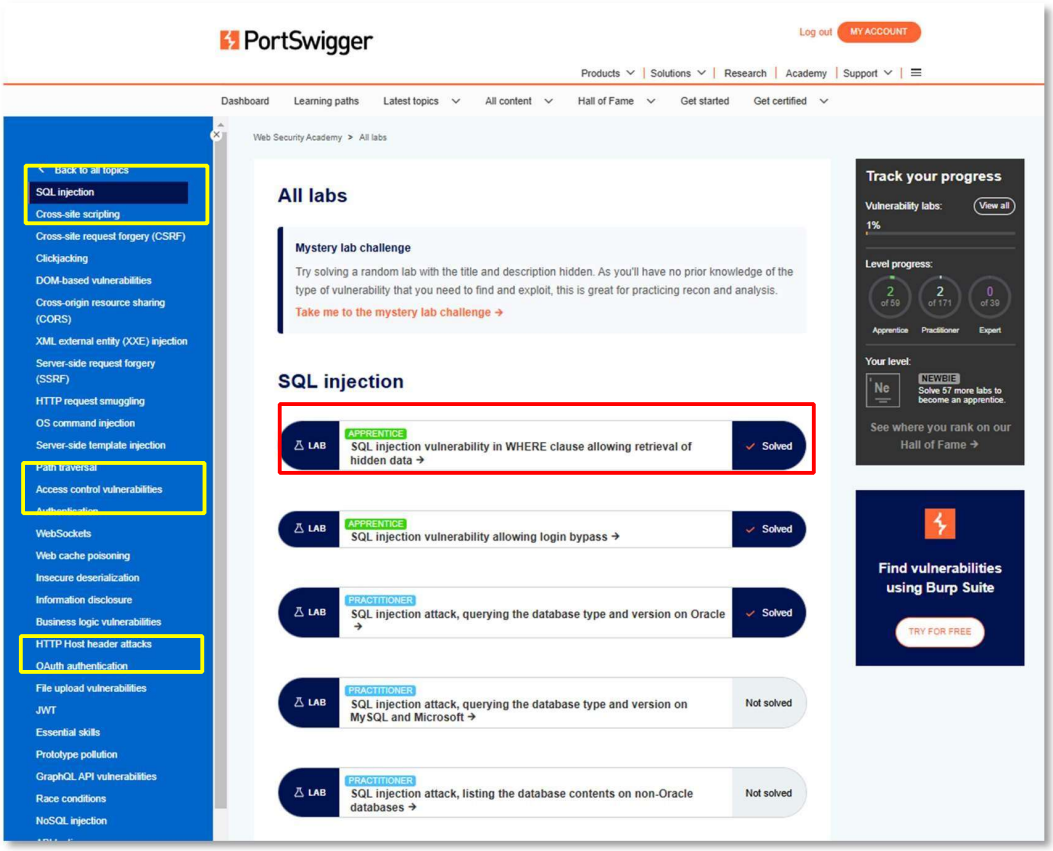
2. Use your UH email to register.
3. Log in using your credentials.



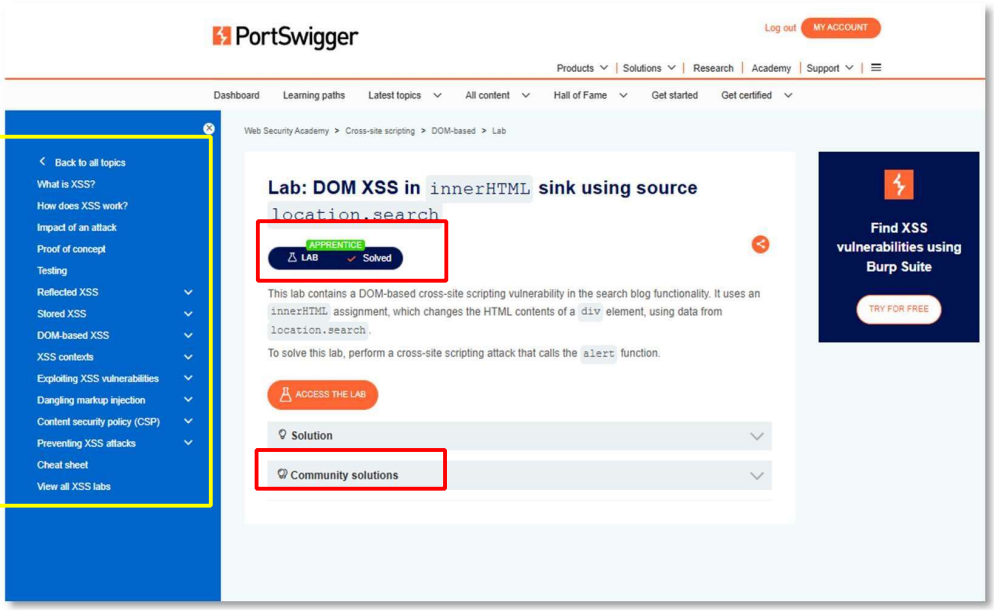
4. Click on "Academy" in the top right corner. You will see your dashboard.



5. Find "Vulnerability labs" on your dashboard and click the "VIEW ALL" button.



6. All the labs are on the left side of the topic list. You're encouraged to practice with all of them. Each topic's labs have different difficulty levels, so you can start with the easiest.
7. You will find information about this lab and explanations of the key concepts in each lab. If you are stuck somewhere, don't panic! You can always find community support.



8. We pick up the following topics. Here are the required labs:

	Lab topics	
1	SQL injection	Top 2
2	Cross-site Scripting	Top 6
3	Cross-site request forgery (CSRF)	Top 1
4	Clickjacking	Top 3
5	HTTP request smuggling	Top 1
6	OS command injection	Top 1
7	Access Control Vulnerabilities	Top 5
8	Authentication	Top 3
9	File upload vulnerabilities	Top 2
10	Information Disclosure	Top 3 (optional)
11	OAuth Authentication	Top 1 (optional)
12	Web LLM attacks	Top 1 (optional)
	Total	**29 labs**

9. If you find these labs too easy, try more advanced blue-labeled "Practitioner" or purple-labeled "Expert" labs. Have fun! !

[3] Submission: Write a report summarizing the work you did for each lab topic. You are welcome to do more than what is required. In that case, please include a description of the work you completed. You are encouraged to suggest labs you find important or interesting. The instructor is seeking input for future classes. Please submit a short report (about one page), screenshots of your completed required lab topics, and your dashboard showing your progress bar. Save all your screenshots in a single file, convert it to a PDF, and upload it to Canvas. The upload instructions will be posted on the class website. The instructor may ask you to show your work on the website. Have fun!un!

[4] Deadline: 11:59 pm, Monday, April 27, 2026.