CTF Nexus: Dominate the Digital Realm

CS6903: Network Security, 2024-25

Department of Computer Science and Engineering

Indian Institute of Technology Hyderabad

Lab Exam Start Time: February 25th, 2025, 6:00 PM

Lab Exam End Time: February 26th, 2025, 6:00 PM

Report Due Date: February 27th, 2025 06:00 PM

Late Submissions attract 10% per day penalty

Disclaimer: *This contest aims to familiarize you with some offensive techniques in computer security. You will be carrying out attacks with our permission in a controlled environment. Keep in mind that doing similar attacks on other machines without authorization is a legal offense. You may face disciplinary and legal action for unauthorized attacks.*

The online lab exam is in the format of a capture-the-flag web security contest. You will be required to solve web security-related problems, most of which are from topics covered in the class. When you complete a challenge, you will get a flag, which is a passphrase that you have to submit to get points for that challenge.

Here are the rules for the contest:

- **Contest Duration:** The contest will **start at 6:00 PM, Feb 25th, 2025**, and remain **active till 6:00 PM, Feb 26th, 2025**.
- **Platform Access:** We will share the platform access credentials 5 minutes before the scheduled start time via email along with your respective challenge IPs. ***(Accessible only through IITH-LAN/VPN/WiFi)***
- **Submission Platform:** The main contest (CTF) server is available at https://192.168.51.154/, where you have to submit your flags.
- **Dynamic Scoring:** Early solvers receive full marks. **Delayed submissions face up to a maximum of 30% deduction** from total marks.
- **Flag Format:** All flags are of the format **cs6903{<passphrase>}**. For example, if you see `cs6903{supersecret}` on solving a challenge, submit `cs6903{supersecret}` on the contest page. It is important that you submit the flags as you capture them. Don't delay the submission.
- **Submission Limit:** ***You have a maximum of 7 attempts (submissions) per challenge. Attempt count will not be increased if exhausted.***
- Wherever the team name, username, or roll number is asked for input, enter your IITH roll-number in it in lowercase format only (no space). For example, cs24mtechxxxxx or cs22btechxxxxx
- **Write-up submission is due by 06:00 PM, Feb 27th, 2025. No extension will be given.**
- **Teams/Collaboration are not allowed**, as this is an individual event and not group-based. *If any student is found to have shared their work with another student, both will receive **0 (zero)** for this lab, **followed by a one-grade reduction** for this course. For example, if the final grade for the course is B, it will be reduced to B-. There are several monitoring mechanisms in place to detect cheating.*
- If you feel lost and are looking for clarifications, feel free to ask the TAs and the Course Instructor.
- Any attempts to DoS the contest infrastructure will attract *penalties*.
- If you find any weakness in any of the challenges, let us know without trying to misuse it. You may be awarded bonus points for responsible disclosure.

Deliverables (Write-up Due Date: February 27th, 2025 06:00 PM):

Each participant must submit a single consolidated report (rollnumber_report.pdf) that includes:

- Student Name & Roll Number on Top
- Section 1: Challenge Solutions
  - For each challenge attempted, include:
    - Challenge Name
    - Approach Taken (Step-by-step explanation of how you solved or attempted it)
    - Technical Details (Commands, tools, scripts used)
    - Identified Weakness (Security flaw exploited)
    - Mitigation Measures (How to prevent such vulnerabilities)
    - Screenshot Proof (Mandatory – include screenshots of key steps & successful flag capture)
- Section 2: Legal & Ethical Considerations
  - Maximum Penalties under the Indian IT Act, 2000 for:
    - Web Defacement & Unauthorized Website Modification
    - Unauthorized Data Extraction (Scraping, SQL Injection, or Dumping Database Contents)
  - Responsible Disclosure & Ethics (Best practices in ethical hacking).
- **Anti-Plagiarism Statement**

Submission Format

- Submit a **tar-ball/zip** file named after your roll number **(e.g., csxxxtechxxxxx.tar.gz).**
- **The zip file must contain:**
  - yourrollnumber_report.pdf (single consolidated report)
  - exploit_code/ (if applicable, scripts used for challenges)
- **Upload your submission to Google Classroom before 11:59 PM, February 26th, 2025.**
- **Late Submission Policy: A 10% penalty per day will be applied for late submissions.**
- Upload your submission to the Classroom only. **Submissions via email or any other medium are strictly prohibited.**

All the best. Looking forward to the submissions !!.....PS: Start Early…

ANTI-PLAGIARISM STATEMENT <Include it in your report>

I certify that this assignment/report is my own work, based on my personal study and/or research and that I have acknowledged all material and sources used in its preparation, whether books, articles, packages, datasets, reports, lecture notes, or any other document, electronic or personal communication. I also certify that this assignment/report has not previously been submitted for assessment/project in any other course lab, except where specific permission has been granted from all course instructors involved, or at any other time in this course, and that I have not copied in part or whole or otherwise plagiarized the work of other students and/or persons. I pledge to uphold the principles of honesty and responsibility at CSE@IITH. In addition, I understand my responsibility to report honor violations by other students if I become aware of it.

Name:

Date:

Signature: *<keep your initials here>*