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Research Interests

My interests lie in strengthen the digital realm, aiming to contribute to the ongoing enhancement of digital security practices. Research revolves around cybersecurity, particularly in the exploration and exploitation of vulnerabilities embedded within Operating Systems.

Education

Punjab University College of Information Technology
October, 2020 – Present
Bachelor of Science - Information Technology
Lahore, Punjab, Pakistan
- Expected graduation: July 2024
- GPA: 3.10/4.0

Superior College Burewala
September, 2018 – July, 2020
FSC - Pre Engineering
Burewala, Punjab, Pakistan
- Grade: A+

Professional Experience

Teaching Assistant (Operating System)
August, 2023 – present
PUCIT - University of the Punjab
Lahore, Punjab, Pakistan
- Designed exam papers for the lab.
- Designed material and coursework for the newly introduced lab component of the subject.
- Assisted students in the lab + other TA responsibilities.

Teaching Assistent (Object Oriented Programming)
January, 2023 – May, 2023
PUCIT - University of the Punjab
Lahore, Punjab, Pakistan
- Assisted students in the lab + other TA responsibilities.

Skills

Programming Languages: C/C++, Java, Javascript, Python, x86-64 Assembly
Secuirty: Reverse Engineering, Binary Exploitation
Tools: GDB, IDA, Radare Cutter
OS: GNU/Linux, Windows
Cloud: AWS, EC2, IAM, Azure Fundamentals

Final Year Project

Linux Kernel Exploitation & Docker Escape (Continue...)
C, Python, x86-64 Assembly
PUCIT - University of the Punjab
August, 2023 – Present
- Supervisor: Dr. Muhammad Arif Butt
- Formulated the idea and initiated the research project
- Worked on problems related to memory errors in binaries
- Worked on reversing binaries using IDA Freeware
- Will analyze CVE-2022-0185 (Heap based Buffer Overflow in Linux Kernel files system)

Projects

Exploits Scripts   Python, x86-64 Assembly
https://github.com/meharehsaan/bufferoverflow
- Basic Buffer Overflow
- Buffer Overflow with Mitigations
- Basic scripts that I have written while learning how to solve exploitation challenges.

Linux Utilities   C
https://github.com/meharehsaan/linux-utilities
- ls utility
- more utility
- An attempt to write initial versions of utilities to deep dive in working of them.

Socket Programming   Python, Java
https://github.com/meharehsaan/socketprogramming
- In java sockets Simple java sockets are implemented using streams in java.
- In Python sockets File Transfer Protocol (FTP), Stop and Wait and Go-back-N protocols are implemented in UDP sockets.

Basic Andriod App   Java, XML
https://github.com/meharehsaan/android-dev
- Its a term project implmenting basic app features including recyclerView, retrofit Api, roomdb, fragments,View Binding, Data Binding, Dialog Box, Notifications.

Student Feedback System   Php, Mysql
https://github.com/meharehsaan/feedbacksystem
- Its a secure feedback system for the college faculty and students. All records are properly managed in database. All entites login on the same space.

Mini Projects   Python, Java
https://github.com/meharehsaan/miniprojects
- Survlet State Managemnet in java
- Spam Mail Prediction Using Python
- Pandas Data Manipulation (Internet Movie Database)
- Each project focuses on a specific topic or problem and has its own set of files and resources.

Extracurriculars & Volunteering

Study Coordinator   PUCIT - University of the Punjab
Helping Hands - unofficial PUCIT Society   December, 2023 – Present
- Organized Study Sessions and webinars
- E.g. Problem Solving and FYP guidence etc

Collaborative Workshop Organizer   PUCIT - University of the Punjab
with GDSC (Google Developer Student Club)   December, 2023 – Present
- Organized tech workshops
- E.g. Memory Corruption and Buffer Overflows etc
- https://github.com/meharehsaan/cybersec-workshop