JSPM's Rajarshi Shahu College of Engineering
An Empowered Autonomous Institute Affiliated to Savitribai Phule Pune University, Approved by AICTE,
Accredited by NBA (UG Programs), Accredited by NAAC With "A" Grade
MHRD-NIRF Rank:151-200

Cybersecurity Workshop Phase 1 Report

Organized By

Microsoft CyberShikshaa

Institution: JSPM's Rajarshi Shahu College of Engineering

Trainer: 1.Prof Dipali Chhatrikar(E&TC)

2. Prof. Vaishali Suryawanshi(MCA)

3.Prof.Swati Paralkar(CSBS)

4.Prof.Apoorva Kulkarni(IT)

Workshop Duration: 4 Days (30 Hours)

23th Sept to 27th Sept 2024

9 am to 5 pm

Students Count:78

Workshop Report on Cybersecurity Training (Stage 2)

1. Introduction The cybersecurity training workshop (Stage 2) was conducted as part of the Microsoft Cyber Shikshaa initiative at JSPMS Rajarshi Shahu College of Engineering. This workshop aimed to provide in-depth knowledge and hands-on experience in various cybersecurity concepts, techniques, and tools. The training was structured into multiple sessions, each covering critical aspects of cybersecurity, such as system fundamentals, need for cybersecurity, introduction of Threats, Attack Categories and Hacking Process, different types of the security .

2. Objectives of the Workshop The primary objectives of this workshop were:

- To familiarize participants with various cybersecurity threats and vulnerabilities.
- To introduce network security measures, including different types of firewalls.
- To enhance participants' skills in implementing cybersecurity practices through hands-on exercises.
- To provide insights into best practices for securing information systems.

3. Workshop Structure and Methodology The workshop was designed to provide a mix of theoretical concepts and practical exposure. The following methodologies were employed:

- **Lectures:** Detailed explanations of cybersecurity concepts.
- **Demonstrations:** Live demonstrations of security tools and techniques.
- **Hands-on Sessions:** Practical exercises to reinforce learning.
- **Case Studies:** Real-world examples to highlight best practices.
- **Interactive Discussions:** Q&A sessions to address participants' queries.

4. Session Breakdown The workshop was divided into multiple sessions, each focusing on specific cybersecurity topics. Some key sessions included:

- **Module 1: System Fundamentals**
    - **Enterprise Architecture- 0:** Introduction to Digital data, its types and information; Introduction to information system, Introduction to management information systems (MIS) and its functions;
    - **Enterprise Architecture - 1:** Introduction to Data Centre and its infrastructure; Security at Google data centre; Facebook data centre. Assignment : Green Data Canter
    - **Virtualization and its Components- 0:** Introduction to virtualization, its benefits and virtual machines; Components of Virtual Machines, its hardware and its benefits;
    - **Virtualization and its Components – 1:** Application and Desktop Virtualization and their techniques; Assignment: Creating Virtual Machine on Oracle Virtual box;

- **Module 2: Need for Cyber Security**
    - **Overview of Cyber Security- 0:** First Cyber Attack; Importance of Cyber Security; Human Firewal: An answer to your Cyber Security problem
    - **Overview of Cyber Security - 1:** Scope of Cyber Security; 5 laws of Cyber Security. **Types of cyber attacks:** Types of cyber attacks
    - **Ecosytem of Cyber Security:** Cyber Security Framework; Attack Matrix and its features; Introduction of network security and recent developments; Types of Networks.
- **Module 3: Introduction to Cyber Security**
    - **Fundamentals of Information Security -0:** Introduction to Information Security and its policies; CIA Triad-3 pillars of information security architecture;
    - **Fundamentals of Information Security - 1 :** CIA components and its importance; Cyber security threats and best practices; Access controls and its types;
    - **Fundamentals of Information Security - 2:** Discretionary access control; Mandatory access control; Role based access control; Arbitrary based access control
    - **Understanding Threats, Attack Categories and Hacking Process- 0:** Active Reconnaissance; Types of Reconnaissance; Passive Reconnaissance; Types of Cyber Attack;
    - **Understanding Threats, Attack Categories and Hacking Process- 1:** Vulnerability Assessment and its features; Concept and types of Scanning Methodology; Penetration Tests.
    - **Understanding the Network Security- 0:** Network Security Devices; Types of Network Securities; Network Access Control; Characteristics of Network Access Control;
    - **Understanding the Network Security - 1** : Application Security; Application Security Tools; Firewalls and its types; Introduce you virtual private network,
    - **Understanding the Network Security - 2** : Tunnelling protocol and types; IDS vs. IPS; IDS, IPS and their Types
    - **Fundamentals of Web/Mobile Application Security- 0:** Introduction to Web Application Vulnerabilities; Basic Practices of Web Application Security; Common Cyberattacks on Web Applications; Mobile Application Vulnerabilities;
    - **Fundamentals of Web/Mobile Application Security – 1:** I Mobile Security Threats; Mobile Application Security; Fundamentals of Mobile Device Mangement; Overview of Mobile Device Management

- **Data Centre Security, Cloud Computing and Data Security- 0:** Introduction to Cloud Computing and its types; Basics of Cloud Computing; cloud computing, its types, benefits and other considerations;
- **Data Centre Security, Cloud Computing and Data Security- 1: T**ypes of Clouds and its different services; Cloud Computing Threats and Solutions; Clouds Computing – Threats and Vulnerabilities;
- **Data Centre Security, Cloud Computing and Data Security- 2:** Cloud Computing Risks and Threats; Introduction to Cloud Security; Cloud Security and its Practices; Google Data Centre.

Stage 2 Final Assessment

A comprehensive assessment was conducted to evaluate participants' knowledge and practical skills gained during the workshop.

5. Key Takeaways Participants gained significant knowledge and skills, including:

- Identifying and mitigating network security threats and countermeasures
- Hands-on experience with firewalls, IDS, and IPS.
- Practical knowledge of ethical hacking techniques.
- Configuring and managing firewalls.
- Implementing intrusion detection and prevention mechanisms.
- Secure web development practices to prevent cyber attacks
- Incident response and cybersecurity operations management.
- Applying secure network protocols to enhance communication security.

6. Challenges Faced

Some challenges encountered during the workshop included:

- Participants' varying levels of prior knowledge in cybersecurity.
- Technical difficulties in hands-on exercises due to software compatibility issues.
- Limited time to cover advanced topics in detail.

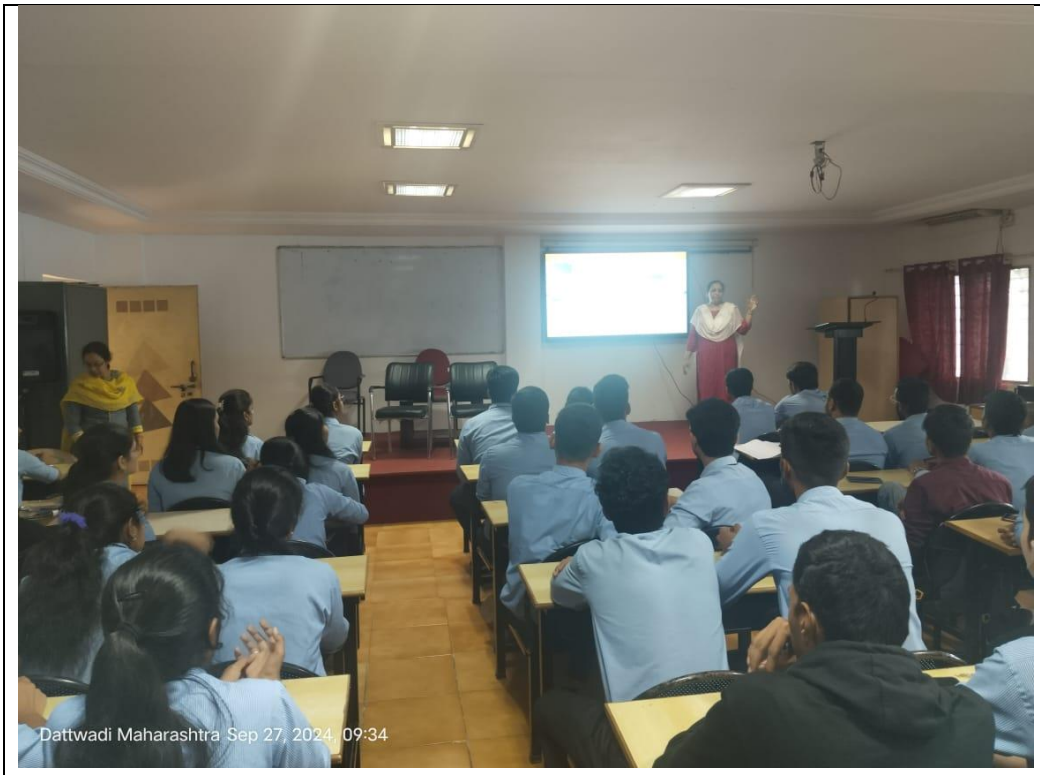
7. Feedback and Suggestions Feedback from participants was generally positive. Some suggested improvements include:

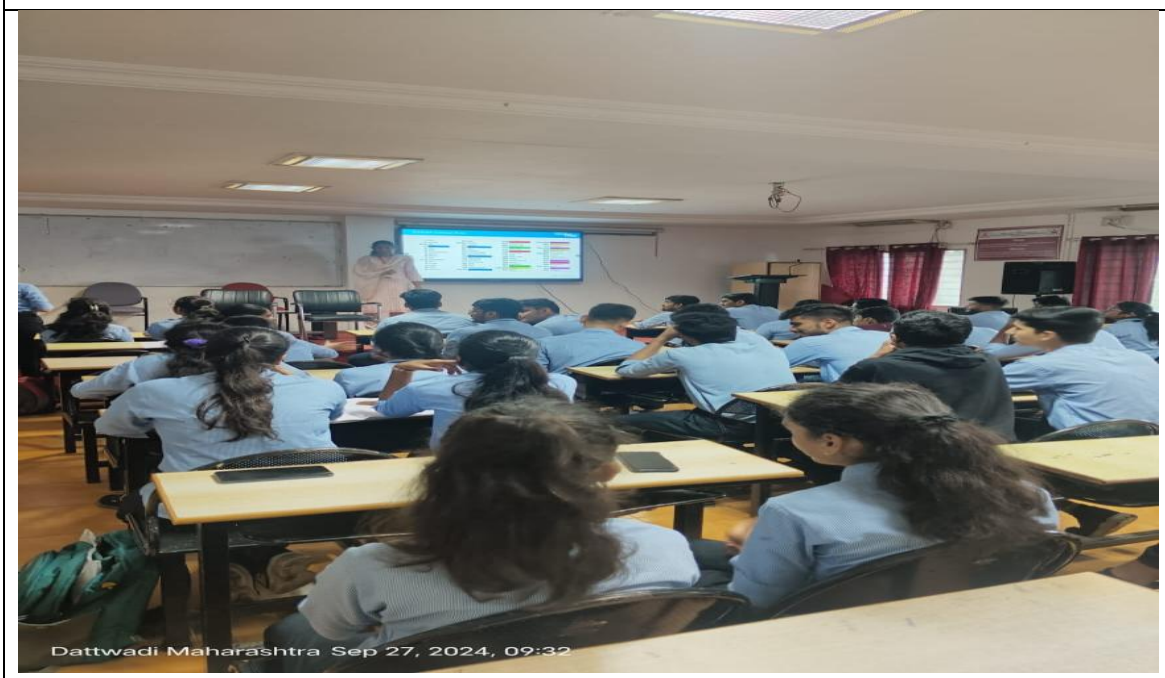
- Increasing the duration of hands-on sessions for better practical exposure.
- Providing additional resources for self-study.
- Organizing follow-up sessions for advanced cybersecurity topics.

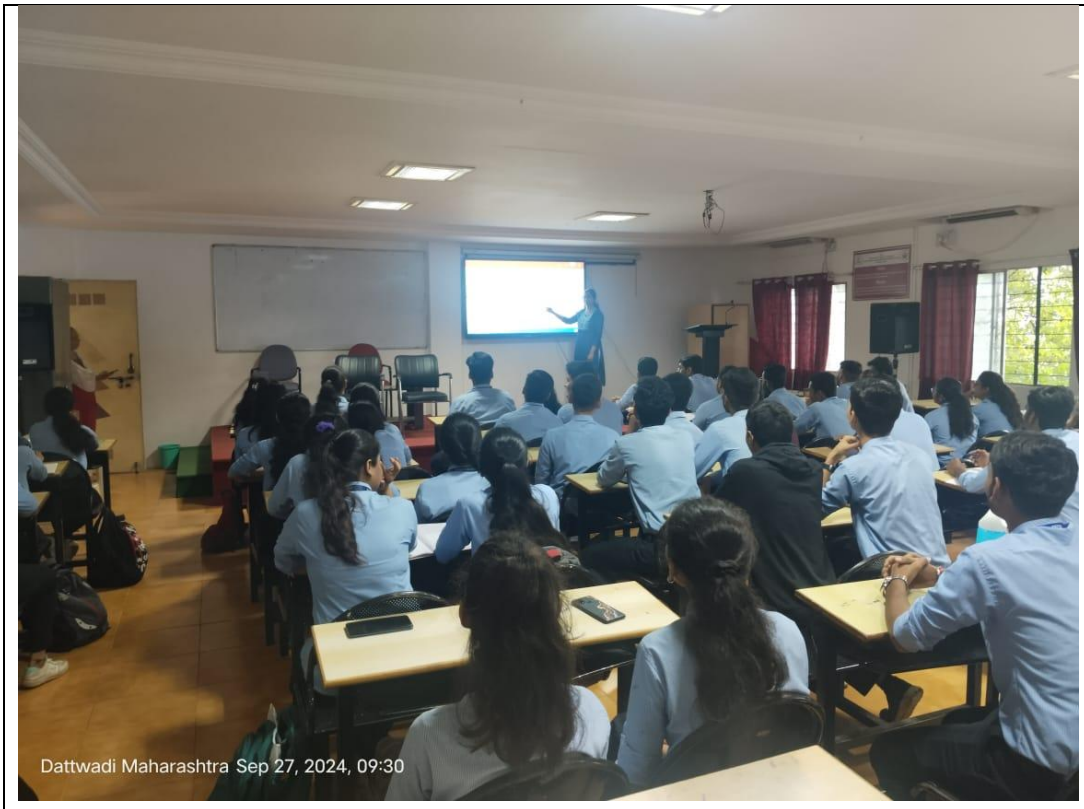
8. Conclusion The cybersecurity training workshop (Stage 2) successfully equipped participants with essential cybersecurity skills and knowledge. By blending theoretical instruction with practical exercises, the workshop enhanced participants' ability to secure

networks and mitigate cyber threats. Future sessions could focus on deeper engagement with emerging cybersecurity trends and advanced security measures.

Photo’s



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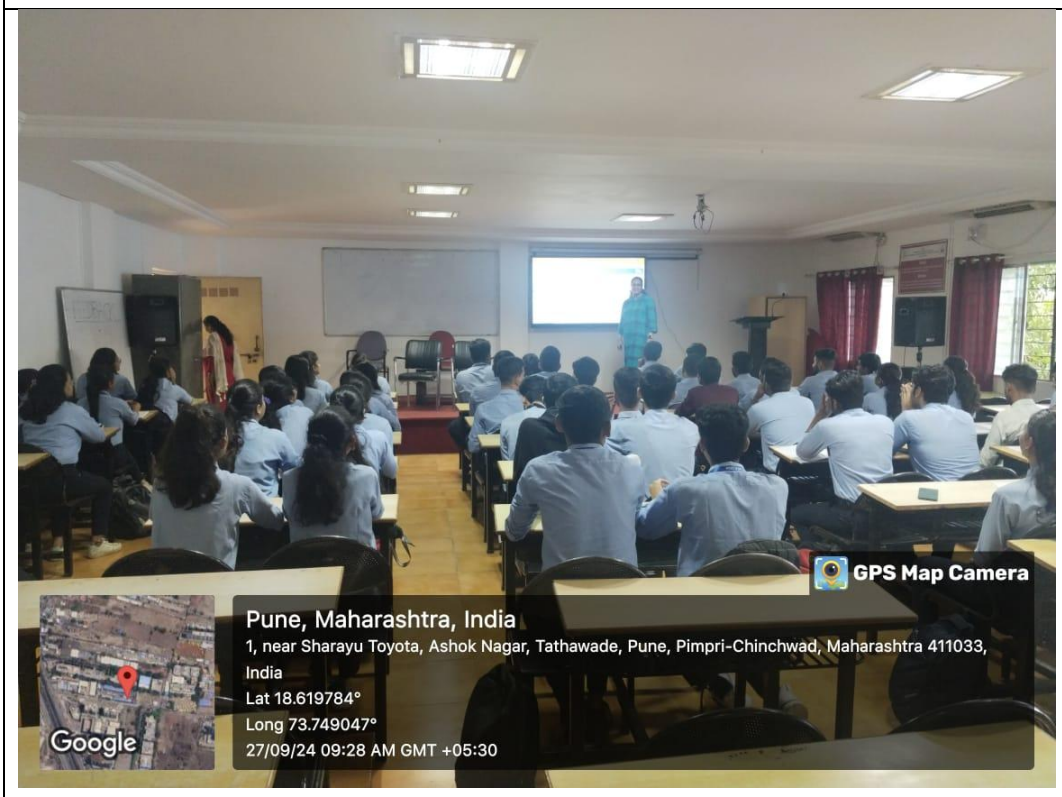
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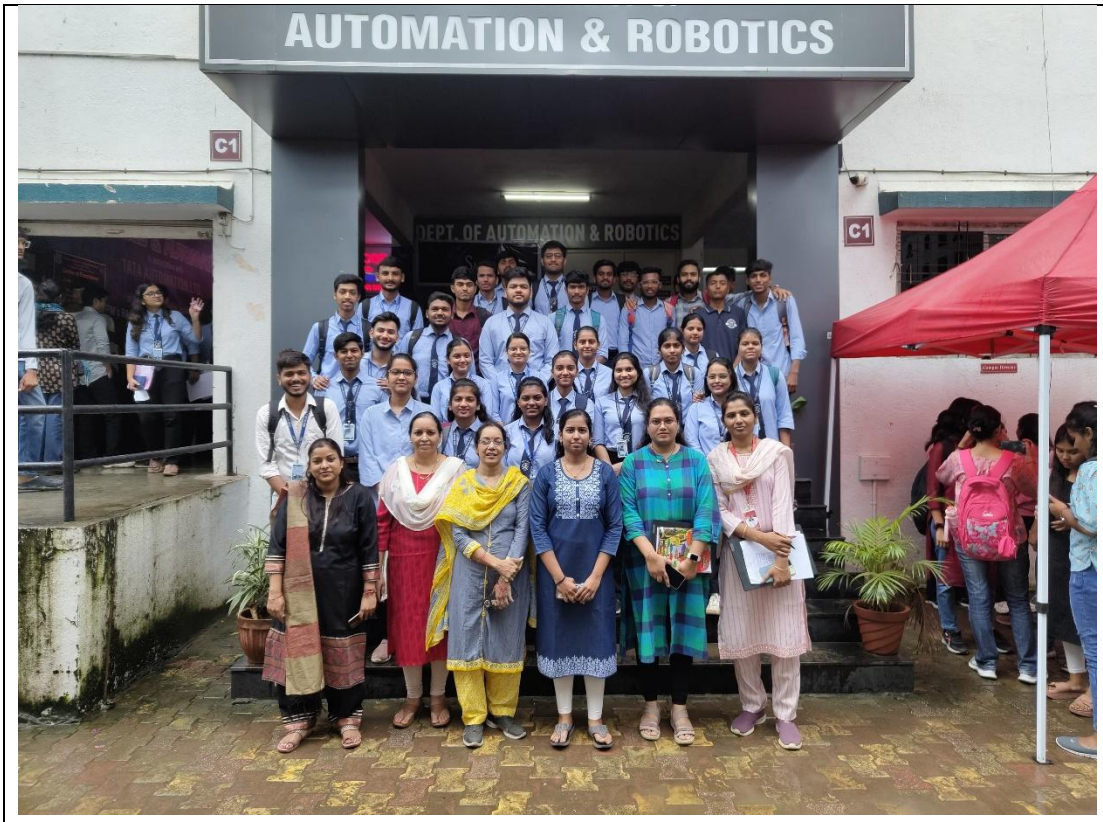

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