BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

(AN AUTONOMOUS INSTITUTION AFFILIATED TO VTU)

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5-DAY NATIONAL WORKSHOP

PRACTICAL CYBER SECURITY, FORENSICS & BLOCKCHAIN TECHNOLOGY

06 DECEMBER TO 10 DECEMBER, 2022

ORGANIZED BY

DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

IN ASSOCIATION WITH

BMS Institute of Technology & Management
Avalahalli, Yelahanka, Bengaluru-560064
Department of Computer Science & Engineering

National Workshop on Practical Cyber Security, Forensics & Blockchain Technology
6th Dec 2022 – 10th Dec 2022

Session Schedule

DAY 1 – 6th Dec 2022		
Time	**Topic**	**Resource person**
8.45 AM to 9.30 AM 9.30 AM-10:00AM	Registration /Inauguration	
10:00 AM to 11:00 AM Session-1	Cyber Security, Forensics	Dr.Dinesha H.A Founder & Chairman,Cybersena (R&D) India Private Ltd.
11:00AM-11:15 AM	Break	
11:15 AM to 12:45 PM Session-2	Tools, Applications, Use cases	Dr.Dinesha H.A Founder & Chairman,Cybersena (R&D) India Private Ltd.
12:45 PM to 1:45PM	Lunch	
1:45PM to 3:15 PM Session-3	Blockchain for Cyber Security	Prof. Sharada Devi K S RVCE
3:15PM-3:30PM	Break	
3:30PM-4:30PM Session-4	Blockchain for Cyber Security	Prof. Sharada Devi K S RVCE
DAY 2 –7th Dec 2022		
Time	**Topic**	**Resource person**
9:00 AM to 11:00 AM Session-1	Penetration Testing and Ethical hacking	Dr. Manish Kumar, RIT
11:00AM-11:15 AM	Break	
11:15 AM to 12:45 PM Session-2	Penetration Testing and Ethical hacking	Dr. Manish Kumar, RIT
12:45 PM to 1:45PM	Lunch	
1:45PM to 3:15 PM Session-3	Penetration Testing and Ethical hacking	Dr. Manish Kumar, RIT
3:15PM-3:30PM	Break	

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3:30PM-4:30PM Session-4	Penetration Testing and Ethical hacking	Dr. Manish Kumar, RIT
DAY 3 – 8th Dec 2022		
Time	**Topic**	**Resource person**
9:00 AM to 11:00 AM Session-1	Penetration Testing and Ethical hacking	Dr. Manish Kumar, RIT
11:00AM-11:15 AM	Break	
11:15 AM to 12:45 PM Session-2	Penetration Testing and Ethical hacking	Dr. Manish Kumar, RIT
12:45 PM to 1:45PM	Lunch	
1:45PM to 3:15 PM Session-3	Penetration Testing and Ethical hacking	Dr. Manish Kumar, RIT
3:15PM-3:30PM	Break	
3:30PM-4:30PM Session-4	Penetration Testing and Ethical hacking	Dr. Manish Kumar, RIT
DAY 4 – 9th Dec 2022		
Time	**Topic**	**Resource person**
9:30 AM to 11:00 AM Session-1	Block chain Technology and its Applications	Dr.Arun kumar B.R. Professor, CSE
11:00AM-11:15 AM	Break	
11:15 AM to 12:45 PM Session-2	Ethereum Blockchain Network and Smart contracts	Dr.Arun kumar B.R. Professor, CSE And Poorvik D. Research Associate
12:45 PM to 1:45PM	Lunch Break	
1:45PM to 3:00 PM Session-3	Writing smart contract on Ethereum using Solidity	Dr.Arun kumar B.R. Professor, CSE And Poorvik D. Research Associate
3:00PM-3:15PM	Break	
3:15PM-4:30PM Session-4	Cognitive Security	Dr.Anjan K Professor, Cyber security

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DAY 5 – 10th Dec 2022		
Time	**Topic**	**Resource person**
9:30 AM to 11:00 AM Session-1	Cyber Security tools with industry perspective	Dr. Ajith NetApp
11:00AM-11:15 AM	**Break**	
11:15 AM to 12:45 PM Session-2	Cyber Security tools with industry perspective	Dr. Ajith NetApp
Valedictory		

Organizing committee reserves the rights to reschedule the sessions.

Participants List

Sl.No.	Names	Sl.No.	Names	Sl.No.	Names
1	Ravi Kiran Poudel	31	Shlok Kulshrestha	61	T R Jay Kritin
2	Rishitha Panyam	32	Shreenidhi P Shetty	62	Tanveen Kaur
3	Rohan Patil	33	Shrey Aditya	63	Ullas B K
4	Rohit V	34	Shrividya Shashidhara	64	V S Venkatesh
5	Rudraraju Koushik	35	Shriya Shetty	65	Vaibhav Kumar
6	S C Arham	36	Siddharth Anand	66	Vaidehi Patel
7	S Guru Prasad	37	Siddharth B	67	Vigneshwaran
8	S Mukul Narayana	38	Smriti Kulkarni	68	Abha Nair
9	S Sagar	39	Spoorthi K	69	Pranav B C
10	S Sri Nakul	40	Sreeahk G	70	Chandana H N
11	Saeed Ahmed Alojily	41	Sridhar Sai Sanjana	71	Aishwarya
12	Sai Harshit B	42	Srk Snehith Varma	72	Akash R
13	Sairaj Vanama	43	Srujan Kumar Ramesh	73	Akhila K T
14	Salem Omar Aljaberi	44	Keshav Bhumaraju	74	Akhila S
15	Sambid Pant	45	Suhani Kumari	75	Akshith Gowda
16	Sameer Kumar	46	Suhas Tg	76	Albin Akkara
17	Samriddhi Raj	47	Sujith S R	77	Bhuvankumar J
18	S Venkata Sai Tanish	48	Surabhi Raghavan	78	Dayanidhi M K
19	Sathwik S	49	Swarup Krishna R	79	Mohammed Ali
20	Sayantan Mitra	50	Syed Nazish Shamim	80	Rutvik Kothalikar
21	Shashank Dl	51	Syed Hussain	81	V.Vamshi
22	Shefali Ravindran	52	Sreenithya G	82	Vishal Veerendra
23	Komala R	53	Sujan S Reddy	83	Y Vishnu Reddy
24	Reshma C R	54	Suhas	84	Shreyas
25	Chitra U	55	BC Narendra	85	Vani H G
26	Siddharta Reddy	56	Malavika S Patil	86	Samanta
27	Sameeksha	57	Kevin Mathew	87	Rayees Hussain
28	Harshith M S	58	Utsav Mandal	88	Vivek S
29	S Manju Sankalp	59	Adarsh Manoj Gopal	89	Vinod B Maniyat
30	Apeksha	60	Ganesh Prakash	90	S Md Suhail

Day-wise report for national workshop on "Practical Cyber Security, Forensics & Blockchain Technology"

Dates: 6th Dec 2022 to 10th Dec 2022
Timings: 9:00am to 4:30pm

Day 1 - 6th Dec 2022 (Tuesday): -

This was the first day of the workshop and it began with the inauguration at the 2nd floor Seminar Hall, Academic Block, BMSIT&M. There were dignitaries like Dr. Mohan Babu G N (Principal BMSIT&M), Dr. Anil G N (Dean Academics BMSIT&M), Dr. Thippeswamy G (HoD, Department of CSE, BMSIT&M), Dr. Arun Kumar B R (Professor, Dept. of CSE BMSIT&M), Dr. Dinesha H A (Founder and Chairman of Cybersena). Inauguration went spectacularly with a great invocation song and lightning the lamp.

- **Session 1:**
  - **Speaker:** Dr. Dinesha H A
  - **Time:** 11:00 am to 1:00 pm
  - **Report:**
    Mr. Dhinesha, the speaker for the 1st session delivered an excellent talk on overview of cyber security. He outlined the real threats and their consequences which occur today on the internet and the crucial need of cyber security. He did an amazing job demonstrating real world case studies taking his own startup as an example for the attendees to actually know the present situation. He also touched on how much a cyber forensic guy can make. He also showed the process of how cyber security investigation proceeds and its stages. He ended the session with the attendees highly motivated towards his coming sessions
- **Session 2:**
  - **Speaker:** Prof. Sharada Devi K S
  - **Time:** 1:45 pm to 4:30 pm
  - **Report:**
    Ms Sharada, did an amazing job conveying the basics and overview of blockchain and blockchain technology by demonstrating real world scenarios which made the session interactive and led to better understanding of the concept. This session she also gave an overview of the Remox IDE and Solidity language to develop for ethereum block chain networks. She also touched upon the topic of how block chain works, about blocks, block time, crypto trading etc.
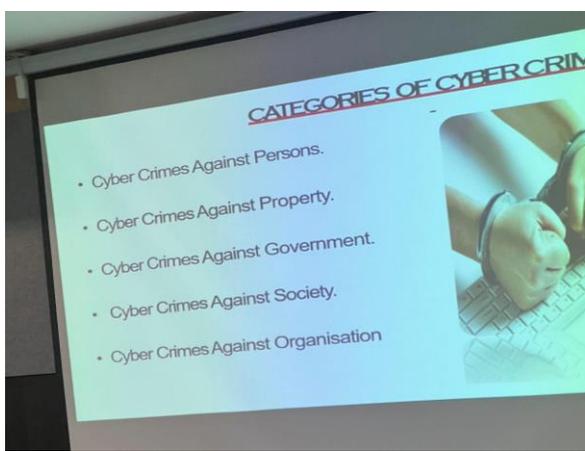
Day 2 - 7th Dec 2022 (Wednesday): -

- **Speaker:** Dr. Manish Kumar
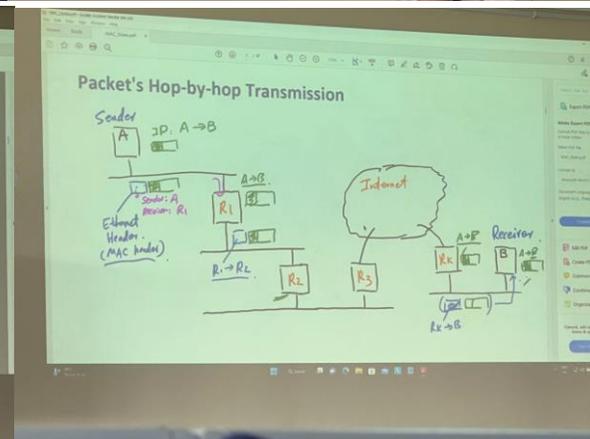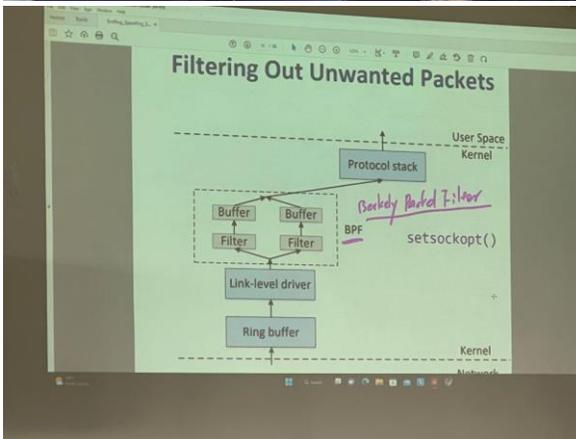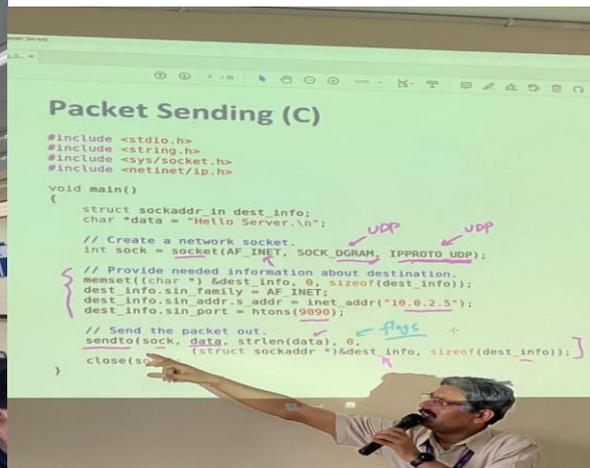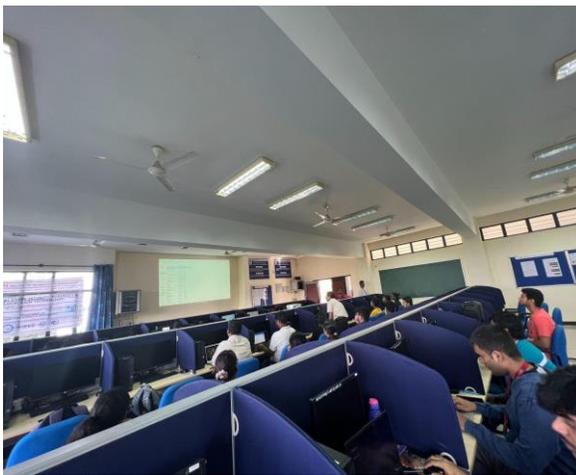- **Time:** 9:00 am to 4:30 pm
- **Report:**
  The second day of the workshop was scheduled to discuss Penetration Testing and Ethical hacking. The same topic continued for the entire day. On this day the attendees got an overview about ethical hacking, about penetration testing and about attacks. This session was completely hands-on, and the attendees were demonstrated the use of various software's like Wireshark for packet sniffing, Scapy library in python to interact with networks declaratively. Dr Manish also explained about various attacks that are possible on UDP and TCP Protocol running servers along with their C Code and its Python counterpart. Attendees were made to write the python code and try it hands-on, and they were able to experience how the attack process goes and what the consequences can be. The topics which were covered:
  - Vulnerability Analysis
  - Packet Sniffing with Wireshark and Scapy

- Socket Programming
- UDP Client and Server architecture and programs related to it.
- How to retrieve a copy of the packets on the network (Sniffing)
- Raw Sockets
- Pcap Filters
- Packet Spoofing with theory and programs
- Sniffing the request and response
- Attacks:
  - Man in the middle
  - ARP Cache Poisoning
  - Spoofing

After this session the attendees were able to gain a clear understanding on how the attacks are structured and their attack strategy with hands-on experience.

# Day 3 - 8th Dec 2022 (Thursday): -

- **Speaker:** Dr. Manish Kumar
- **Time:** 9:30 am to 4:30 pm
- **Report:**
  On this day, the speaker Dr Manish, continued with the topic of Penetration testing and Ethical hacking. This session also had a great hands-on for the attendees as they were able to execute the programs which were demonstrated by Dr. Manish. He clearly explained the attack process and how to defend against the attack along with the counter measures that can be taken. The topics which were covered are:
  - TCP protocol, TCP header and packet structures
  - TCP protocol process
  - Difference between TCP and UDP
  - Sequence and Flow congestion controlling
  - Attacks:
    - SYN Flooding attack
    - TCP Reset
    - TCP Session Hijacking
    - Reverse Shell working and termination
    - Mitnick Attack
  - IP fragmentation process and modifying the packets.
  - Penetration testing software using Metasploit

This session gave a clear understanding of the various TCP and IP attacks which take place in the networking world. He also explained how these various vulnerabilities can be misused by a hacker leading to an attack. He also explained about kali Linux and demonstrated the penetration tool called Metasploit that is used for penetration testing.
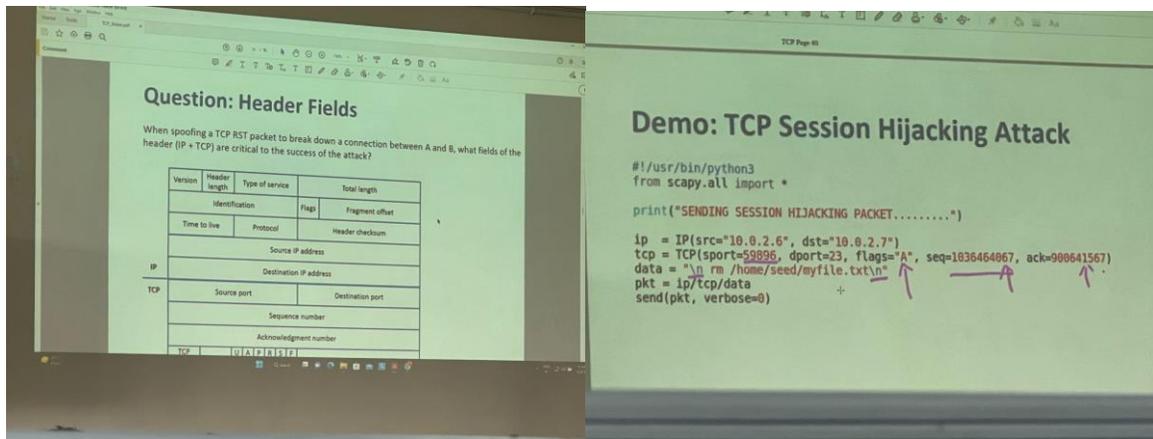
Day 4 - 9th Dec 2022 (Friday): -

This day of workshop covered Blockchain technology and its applications. It had hands-on sessions with block chain technology and various related technologies. It also covered Cognitive security and various fields in cognitive computing.

- **Session 1:**
  - **Speaker:** Dr. Arun Kumar B R and Mr. Poorvik D
  - **Time:** 9:30 am to 3:00 pm
  - **Report:**
    Dr Arun Kumar B R excellently gave an overview on the current state of Block chain technology, how it is being used in the current world. He also explained the block chain architecture and various fundamentals along with its advantages and disadvantages to the attendees. Following him, Mr. Poorvik gave a hands on session on how to set up our computer for block chain development with Solidity and Ethereum. He also explained the Ethereum blockchain technology and the mining process of the Smart Contracts. Attendees were also made to deploy their first Smart contract using Remix IDE and Solidity Compiler. This session gave an exposure to the attendees on how they can interact with the Ethereum blockchain and make their own dapps.
- **Session 2:**
  - **Speaker:** Dr. Anjan K
  - **Time:** 3:15 pm to 4:30 pm
  - **Report:**
    Dr. Anjan gave an amazing presentation on Cognitive Security and its applications. He covered various applications of Cognitive Security and also before moving to the domain of cognitive security he also gave an overview of cognitive computing and how it is different from traditional computing. This session made the attendees

gain a better understanding on how to merge the field of Artificial Intelligence with Computer Security. He also went over the different techniques of cognitive security like Cognitive Cryptography and how it works. He also explained the various features of cognitive systems and how they have been integrated with the present world technology.

Day 5 - 10th Dec 2022 (Saturday): -

- **Speaker:** Dr. Ajith
- **Time:** 9:30 am to 12:45 pm
- **Report:**
  Dr Ajith was an excellent speaker, he gave an excellent overview of the Cyber Security Tools with respect to the present industry. He demonstrated how to calculate the CCRA index, and how to go about an attack like analyzing the attack, calculating its severity along with the attack's level. He went over various levels of an attack like Level 1 attack and Level 9 being most serious. He also explained what the consequences to an Enterprise after such an attack can be along with how to secure the system for that attack. He also gave insider info on how Enterprises deal with such attacks from outsiders and their recovery and classification process.

Feedback form - 5 Days National Workshop on Practical Cyber Security, Forensics and Blockchain   (Responses)

Timestamp	Name	Organization/Institute	Email ID
Feedback Count			
6-12-2022 Day 1 Session 1 & 2 - Dr. Dinesha H A			90
6-12-2022 Day 1 Session 3 & 4 - Prof. Sharada Devi, RVCE			50
7-12-2022 Day 2 Session 1- 4 - Dr. Manish Kumar, RIT			46
8-12-2022 Day 3 Session 1- 4 - Dr. Manish Kumar, RIT			40
9-12-2022 Day 4 Session 1 - Dr. Arun kumar B.R, BMSIT&M			47
9-12-2022 Day 4 Session 2 & 3 - Dr. Arun kumar B.R & Mr. Poorvik D, BMSIT&M			41
9-12-2022 Day 4 Session 4 - Dr. Anjan K, BMSIT&M			40
10-12-2022 Day 5 Session 1 & 2 - Dr. Ajith, NetApp			37
		TOTAL	**391**

Practical Cyber Security, Forensics and Blockchain Technology Workshop Feedback for Session No
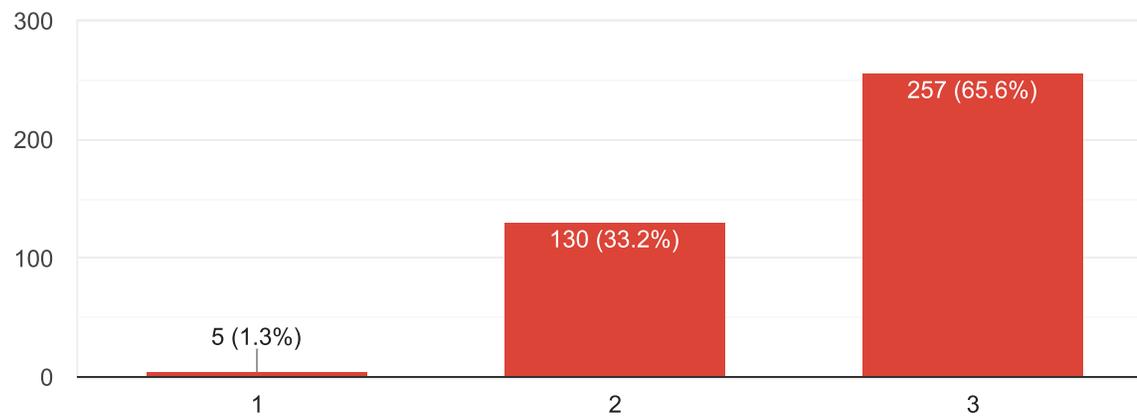
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392 responses
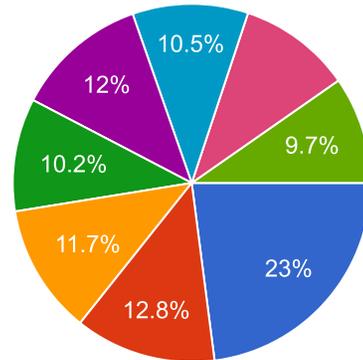
- 6-12-2022 Day 1 Session 1 & 2 - Dr. Dinesha H A
- 6-12-2022 Day 1 Session 3 & 4 - Prof. Sharada Devi, RVCE
- 7-12-2022 Day 2 Session 1- 4…
- 8-12-2022 Day 3 Session 1- 4…
- 9-12-2022 Day 4 Session 1 -…
- 9-12-2022 Day 4 Session 2 &…
- 9-12-2022 Day 4 Session 4 -…
- 10-12-2022 Day 5 Session 1…

Rate the session (For session selected above)

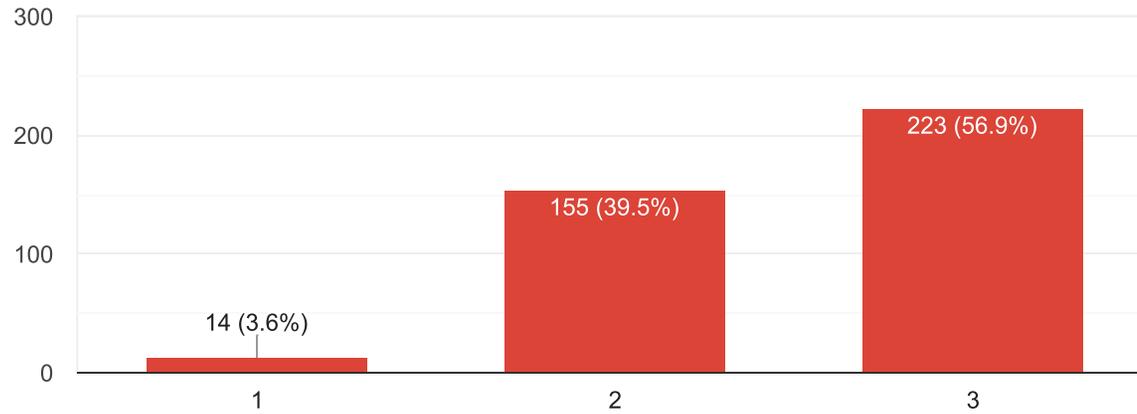Copy

392 responses

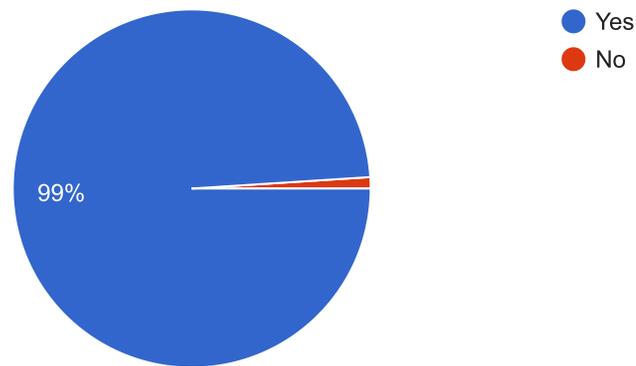## Rate your ability to use the new tools learnt in this session of this workshop?

Copy

392 responses

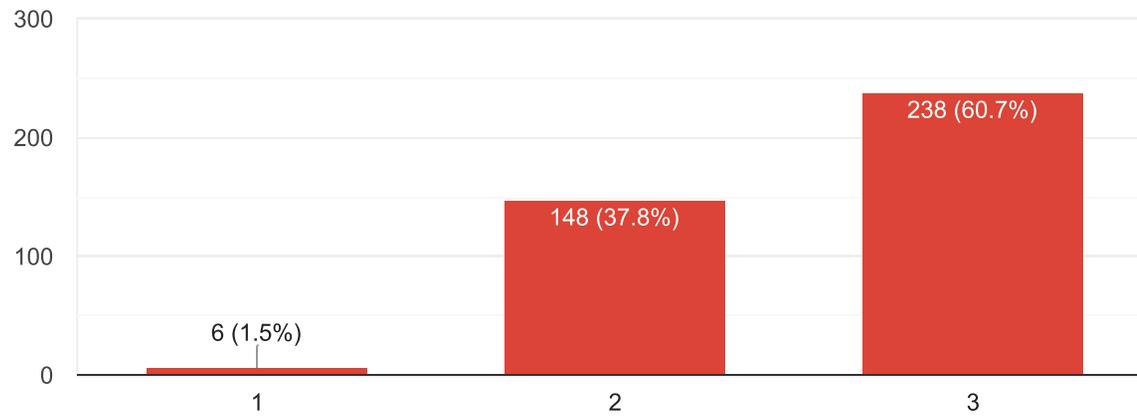## Has the session helped you to gain professional aspects of the cyber security field?

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392 responses

Rate your level of understanding contemporary issues related to impact of cyber-attack on society

Copy

392 responses

- 1: 6 (1.5%)
- 2: 148 (37.8%)
- 3: 238 (60.7%)

How do you rate the topics presented for lifelong learning

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392 responses

- 1: 7 (1.8%)
- 2: 138 (35.2%)
- 3: 247 (63%)