The National Cyber League
A Community Where Cybersecurity Is a Passion

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NCL Fall 2024 Individual Game Scouting Report

Dear Gokul Sathiyamurthy,

Thank you for participating in the National Cyber League (NCL) Fall 2024 Season! Our goal is to prepare the next generation of cybersecurity professionals, and your participation is helping achieve that goal.

The NCL was founded in May 2011 to provide an ongoing virtual training ground for collegiate students to develop, practice, and validate their cybersecurity skills in preparation for further learning, industry certifications, and career readiness. The NCL scenario-based challenges were designed around performance-based exam objectives of CompTIA certifications and are aligned to the National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework published by the National Institute of Standards and Technology (NIST).

As you look to a future career in cybersecurity, we hope you find this report to be valuable in both validating skills and identifying areas for improvement across the nine NCL skills categories. You can use this NCL Scouting Report to:
- Validate your skills to employers in any job application or professional portfolio;
- Show case your achievements and strengths by including the Score Card view of your performance as part of your résumé or simply sharing the validation link so that others may view the detailed version of this report.

The NCL Fall 2024 Season had 9,260 students/players and 573 faculty/coaches from more than 540 two- and four-year schools & 230 high schools across all 50 U.S. states registered to play. The Individual Game Capture the Flag (CTF) event took place from October 25 through October 27. The Team Game CTF event took place from November 8 through November 10. The games were conducted in real-time for students across the country.

NCL is powered by Cyber Skyline's cloud-based skills evaluation platform. Cyber Skyline hosted the scenario-driven cybersecurity challenges for players to compete and track their progress in real-time.

To validate this report, please access: cyberskyline.com/report/GXNMQ86326RH

Based on the performance detailed in this NCL Scouting Report, you have earned **9 hours** of Continuing Education Units (CEUs) as approved by CompTIA. You can learn more about the NCL - CompTIA alignment via nationalcyberleague.org/partners.

Congratulations for your participation in the NCL Fall 2024 Individual Game! We hope you will continue to develop your knowledge and skills and make meaningful contributions as part of the Information Security workforce!
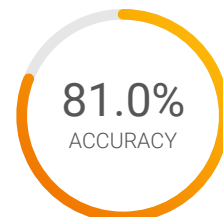
Dr. David Zeichick
NCL Commissioner

NATIONAL CYBER LEAGUE SCORE CARD
NCL FALL 2024 INDIVIDUAL GAME

YOUR TOP CATEGORIES

ENUMERATION & EXPLOITATION	SCANNING & RECONNAISSANCE	PASSWORD CRACKING
95TH PERCENTILE	93RD PERCENTILE	90TH PERCENTILE

NATIONAL RANK
797TH PLACE OUT OF 8484
PERCENTILE
91ST

81.0%
ACCURACY

Average: 67.8%

cyberskyline.com/report
ID: GXNMQ86326RH

Learn more at nationalcyberleague.org

NCL Fall 2024 Individual Game

The NCL Individual Game is designed for student players nationwide to compete in realtime in the categories listed below. The Individual Game evaluates the technical cybersecurity skills of the individual, without the assistance of others.

797 TH PLACE OUT OF **8484**
NATIONAL RANK

91 st National Percentile

1770 POINTS OUT OF 3000
PERFORMANCE SCORE
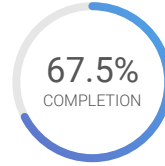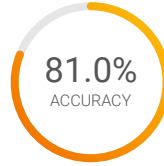
Average: 1008.9 Points

81.0% ACCURACY

Average: 67.8%

67.5% COMPLETION

Average: 41.1%

Cryptography

260 POINTS OUT OF 330 | **100.0%** ACCURACY | COMPLETION: **76.5%**

Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.

Enumeration & Exploitation

220 POINTS OUT OF 330 | **100.0%** ACCURACY | COMPLETION: **66.7%**

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.

Forensics

100 POINTS OUT OF 315 | **50.0%** ACCURACY | COMPLETION: **37.5%**

Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

Log Analysis

200 POINTS OUT OF 300 | **66.7%** ACCURACY | COMPLETION: **92.3%**

Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

Network Traffic Analysis

170 POINTS OUT OF 320 | **91.7%** ACCURACY | COMPLETION: **78.6%**

Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

Open Source Intelligence

280 POINTS OUT OF 355 | **78.3%** ACCURACY | COMPLETION: **78.3%**

Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

Password Cracking

170 POINTS OUT OF 340 | **100.0%** ACCURACY | COMPLETION: **50.0%**

Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

Scanning & Reconnaissance

170 POINTS OUT OF 300 | **63.6%** ACCURACY | COMPLETION: **70.0%**

Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

Web Application Exploitation

100 POINTS OUT OF 310 | **66.7%** ACCURACY | COMPLETION: **33.3%**

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

Note: Survey module (100 points) was excluded from this report.
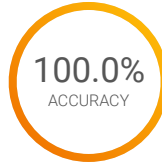
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Cryptography Module

Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.

1068 TH PLACE OUT OF 8484
NATIONAL RANK

88th National Percentile

260 POINTS OUT OF 330
PERFORMANCE SCORE

Average: 209.0 Points

100.0% ACCURACY

Average: 72.6%

76.5% COMPLETION

Average: 64.6%

Bases (Easy)
30 POINTS OUT OF 30 | **100.0%** ACCURACY | COMPLETION: 100.0%

Analyze and obtain the plaintext from messages encoded with common number bases.

Shift (Easy)
40 POINTS OUT OF 40 | **100.0%** ACCURACY | COMPLETION: 100.0%

Analyze and obtain the plaintext for a message encrypted with a shift cipher.

Number Codes (Easy)
40 POINTS OUT OF 40 | **100.0%** ACCURACY | COMPLETION: 100.0%

Analyze and obtain the plaintext for a message encoded using ASCII codes.

NATO (Easy)
40 POINTS OUT OF 40 | **100.0%** ACCURACY | COMPLETION: 100.0%

Analyze and obtain the plaintext for a message encoded using the NATO alphabet.

Message Signature (Medium)
60 POINTS OUT OF 60 | **100.0%** ACCURACY | COMPLETION: 100.0%

Identify tampered emails by using PGP signatures.

Beep Beep (Medium)
50 POINTS OUT OF 60 | **100.0%** ACCURACY | COMPLETION: 66.7%

Decoded a message that is spelled out using dial tone sounds.

Tampered (Hard)
0 POINTS OUT OF 60 | **0.0%** ACCURACY | COMPLETION: 0.0%

Use CRC checksums to identify a tampered message.
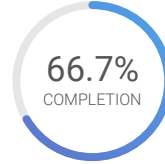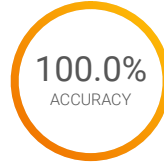
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Enumeration & Exploitation Module

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.

445 TH PLACE OUT OF **8484**
NATIONAL RANK

95th National Percentile

220 POINTS OUT OF **330**
PERFORMANCE SCORE

Average: 145.2 Points

100.0% ACCURACY

Average: 72.5%

66.7% COMPLETION

Average: 52.0%

Source (Easy)
110 POINTS OUT OF **110** | **100.0%** ACCURACY | COMPLETION: **100.0%**

Reverse engineer the source code of a Rust program to bypass a simple password authentication.

Speedy (Medium)
110 POINTS OUT OF **110** | **100.0%** ACCURACY | COMPLETION: **100.0%**

Reverse engineer the source code of a Golang program.

Passphrase (Hard)
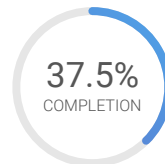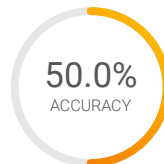**0** POINTS OUT OF **110** | **0.0%** ACCURACY | COMPLETION: **0.0%**

Reverse engineer an ELF binary to break XOR encryption on a password.

Forensics Module

Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

1539 TH PLACE OUT OF **8484**
NATIONAL RANK

82nd National Percentile

100 POINTS OUT OF **315**
PERFORMANCE SCORE

Average: 111.2 Points

50.0% ACCURACY

Average: 50.5%

37.5% COMPLETION

Average: 41.1%

Table (Easy)
100 POINTS OUT OF **100** | **50.0%** ACCURACY | COMPLETION: **100.0%**

Analyze an ARP table to investigate an ARP spoofing attack.

Plant (Medium)
0 POINTS OUT OF **100** | **0.0%** ACCURACY | COMPLETION: **0.0%**

Extract a Linux installer and cpio file to investigate a filesystem.

Incident Response (Hard)
0 POINTS OUT OF **115** | **0.0%** ACCURACY | COMPLETION: **0.0%**

Inspect and repair a live system that was tampered with to recover data.

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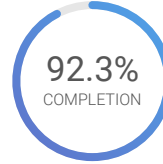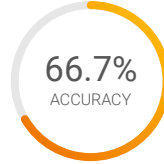# Log Analysis Module

Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

1074 TH PLACE OUT OF **8484**
NATIONAL RANK

88th National Percentile

200 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 160.2 Points

66.7% ACCURACY
Average: 53.9%

92.3% COMPLETION
Average: 60.1%

Audit (Easy)
Analyze a system auth log file to investigate the behavior of users with elevated privileges.

100 POINTS OUT OF 100 | **83.3%** ACCURACY | COMPLETION: 100.0%

Packet Log (Medium)
Identify traffic patterns from a log file of network traffic.

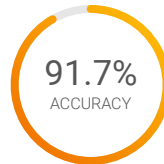**100** POINTS OUT OF 100 | **77.8%** ACCURACY | COMPLETION: 100.0%

$TICKER (Hard)
Parse a stock price log to identify a stock price that was manipulated.

0 POINTS OUT OF 100 | **0.0%** ACCURACY | COMPLETION: 0.0%

Network Traffic Analysis Module

Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

1100 TH PLACE OUT OF **8484**
NATIONAL RANK

88th National Percentile

170 POINTS OUT OF 320
PERFORMANCE SCORE

Average: 148.9 Points

91.7% ACCURACY
Average: 63.2%

78.6% COMPLETION
Average: 65.5%

Address (Easy)
Analyze the behavior of DHCP traffic from a client connecting to a network.

100 POINTS OUT OF 100 | **87.5%** ACCURACY | COMPLETION: 100.0%

Home (Medium)
Analyze a packet capture and decode traffic from TP-Link smart switches.

70 POINTS OUT OF 110 | **100.0%** ACCURACY | COMPLETION: 80.0%

Spec (Hard)
Implement a custom specification to decode raw packets.

0 POINTS OUT OF 110 | **0.0%** ACCURACY | COMPLETION: 0.0%

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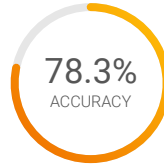gokul.sathiyamurthy@pace.edu

Open Source Intelligence Module

Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

990 TH PLACE OUT OF **8484**
NATIONAL RANK

89th National Percentile

280 POINTS OUT OF **355**
PERFORMANCE SCORE

Average: 200.2 Points

78.3%
ACCURACY

Average: 73.0%

78.3%
COMPLETION

Average: 65.9%

Rules of Conduct (Easy)	25 POINTS OUT OF 25	100.0% ACCURACY	COMPLETION:	100.0%

Introductory challenge on acceptable conduct during NCL.

Vinyl (Easy)	40 POINTS OUT OF 40	75.0% ACCURACY	COMPLETION:	100.0%

Analyze an image using metadata and file properties.

Coordinates (Easy)	60 POINTS OUT OF 60	75.0% ACCURACY	COMPLETION:	100.0%

Geolocate the physical location of a server using an IP address.

NFT (Medium)	60 POINTS OUT OF 60	57.1% ACCURACY	COMPLETION:	100.0%

Conduct blockchain analysis to attribute the ownership of a NFT.

Git (Medium)	0 POINTS OUT OF 75	0.0% ACCURACY	COMPLETION:	0.0%

Obtain private company information that was posted on social media.

Password (Hard)	95 POINTS OUT OF 95	100.0% ACCURACY	COMPLETION:	100.0%

Use coordinates and a SSID to search for a location and find information from public images.
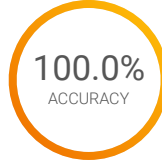
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Password Cracking Module

Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

871 ST PLACE OUT OF **8484**
NATIONAL RANK

90th National Percentile

170 POINTS OUT OF 340
PERFORMANCE SCORE

Average: 101.6 Points

100.0% ACCURACY

Average: 87.6%

50.0% COMPLETION

Average: 36.6%

Hashing (Easy)
15 POINTS OUT OF 15 | **100.0%** ACCURACY | COMPLETION: 100.0%

Generate password hashes for MD5, SHA1, and SHA256.

Rockyou (Easy)
30 POINTS OUT OF 30 | **100.0%** ACCURACY | COMPLETION: 100.0%

Crack MD5 password hashes for password found in the rockyou breach.

Windows (Easy)
30 POINTS OUT OF 30 | **100.0%** ACCURACY | COMPLETION: 100.0%

Crack Windows NTLM password hashes using rainbow tables.

Pattern (Medium)
45 POINTS OUT OF 45 | **100.0%** ACCURACY | COMPLETION: 100.0%

Build a wordlist or pattern rule to crack password hashes of a known pattern.

ZIP (Medium)
50 POINTS OUT OF 50 | **100.0%** ACCURACY | COMPLETION: 100.0%

Crack the insecure password for a protected zip file.

Wordlist (Hard)
0 POINTS OUT OF 65 | **0.0%** ACCURACY | COMPLETION: 0.0%

Build a wordlist to crack passwords not found in common wordlists.

Complexity (Hard)
0 POINTS OUT OF 105 | **0.0%** ACCURACY | COMPLETION: 0.0%

Build a custom wordlist to crack passwords by augmenting permutation rules using known password complexity requirements.
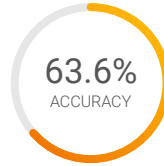
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Scanning & Reconnaissance Module

Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

654 TH PLACE OUT OF **8484**
NATIONAL RANK

93 rd National Percentile

170 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 138.6 Points

63.6% ACCURACY
Average: 56.8%

70.0% COMPLETION
Average: 50.0%

Scan (Easy)
100 POINTS OUT OF 100 | **100.0%** ACCURACY | COMPLETION: 100.0%

Use nmap to scan a machine and discover open ports.

Domains (Medium)
60 POINTS OUT OF 100 | **40.0%** ACCURACY | COMPLETION: 66.7%

Perform reconnaissance on a domain's DNS records to gain information about its assets.

ICS (Hard)
10 POINTS OUT OF 100 | **50.0%** ACCURACY | COMPLETION: 33.3%
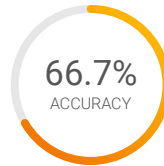
Perform reconnaissance on an ICS system by using the Modbus protocol.
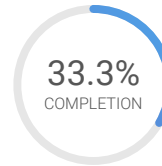
Web Application Exploitation Module

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

1349 TH PLACE OUT OF **8484**
NATIONAL RANK

85 th National Percentile

100 POINTS OUT OF 310
PERFORMANCE SCORE

Average: 102.7 Points

66.7% ACCURACY
Average: 56.0%

33.3% COMPLETION
Average: 43.1%

Candy Store (Easy)
100 POINTS OUT OF 100 | **66.7%** ACCURACY | COMPLETION: 100.0%

Find and exploit a client side authentication vulnerability in a web application.

Shopping v2 (Medium)
0 POINTS OUT OF 100 | **0.0%** ACCURACY | COMPLETION: 0.0%

Exploit a type coercion bug in a Node.Js application.

Indie Metro (Hard)
0 POINTS OUT OF 110 | **0.0%** ACCURACY | COMPLETION: 0.0%

Perform a NoSQL injection attack on a website.