APPLICATION TESTING METHODOLOGY
&
SCOPE BASED RECON

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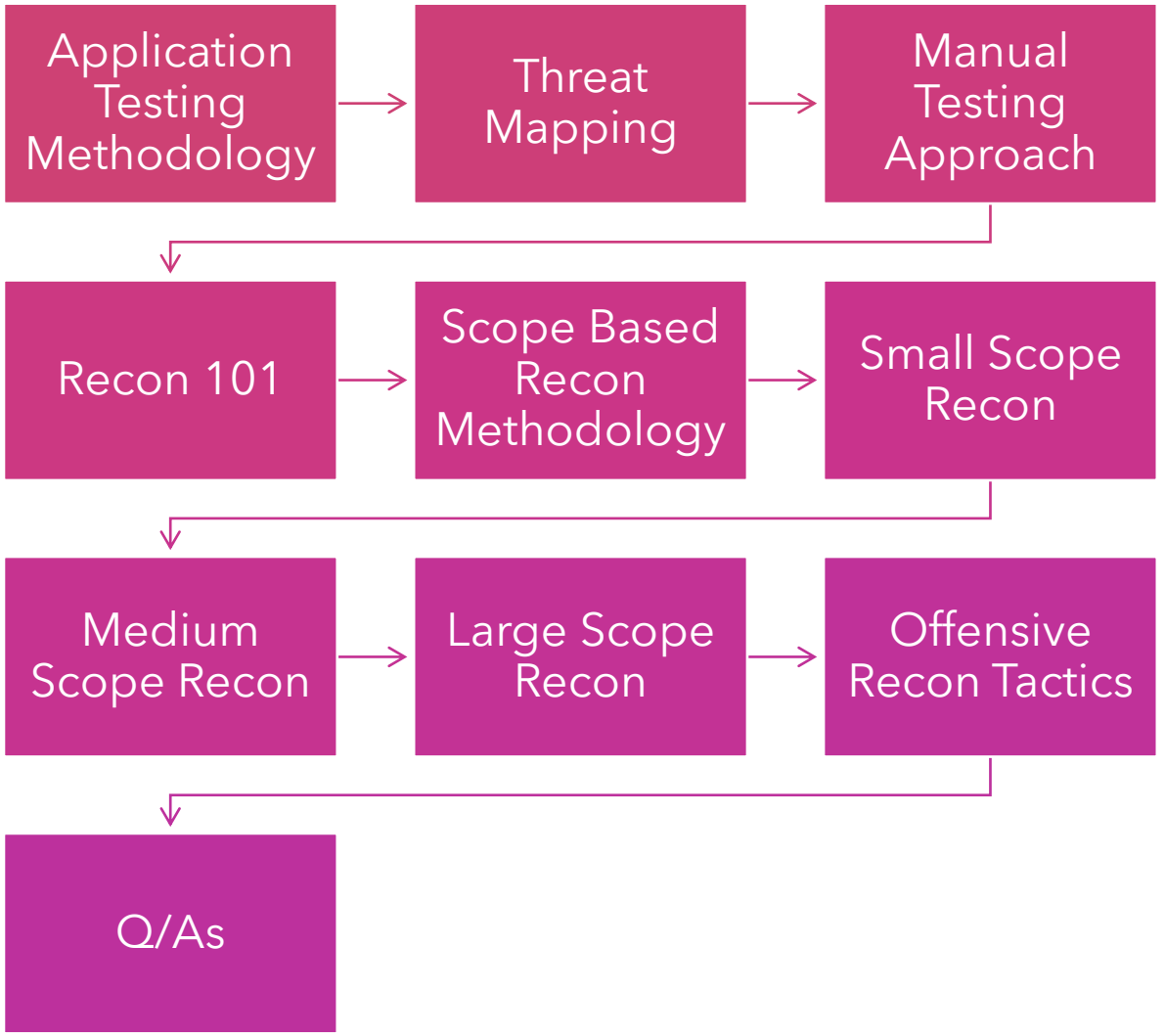
WHO AM I?

- Cyber Security Analyst at Detox Technologies
- Synack Red Teamer
- Bugcrowd MVP 2020 Q1-Q2 & TOP 150 in Leaderboard
- Author – Multiple Hacking Books (R'cmd by AICTE, NITTTR-Chandigarh)
- Blogger | Speaker | Poet
- Lifelong Learner

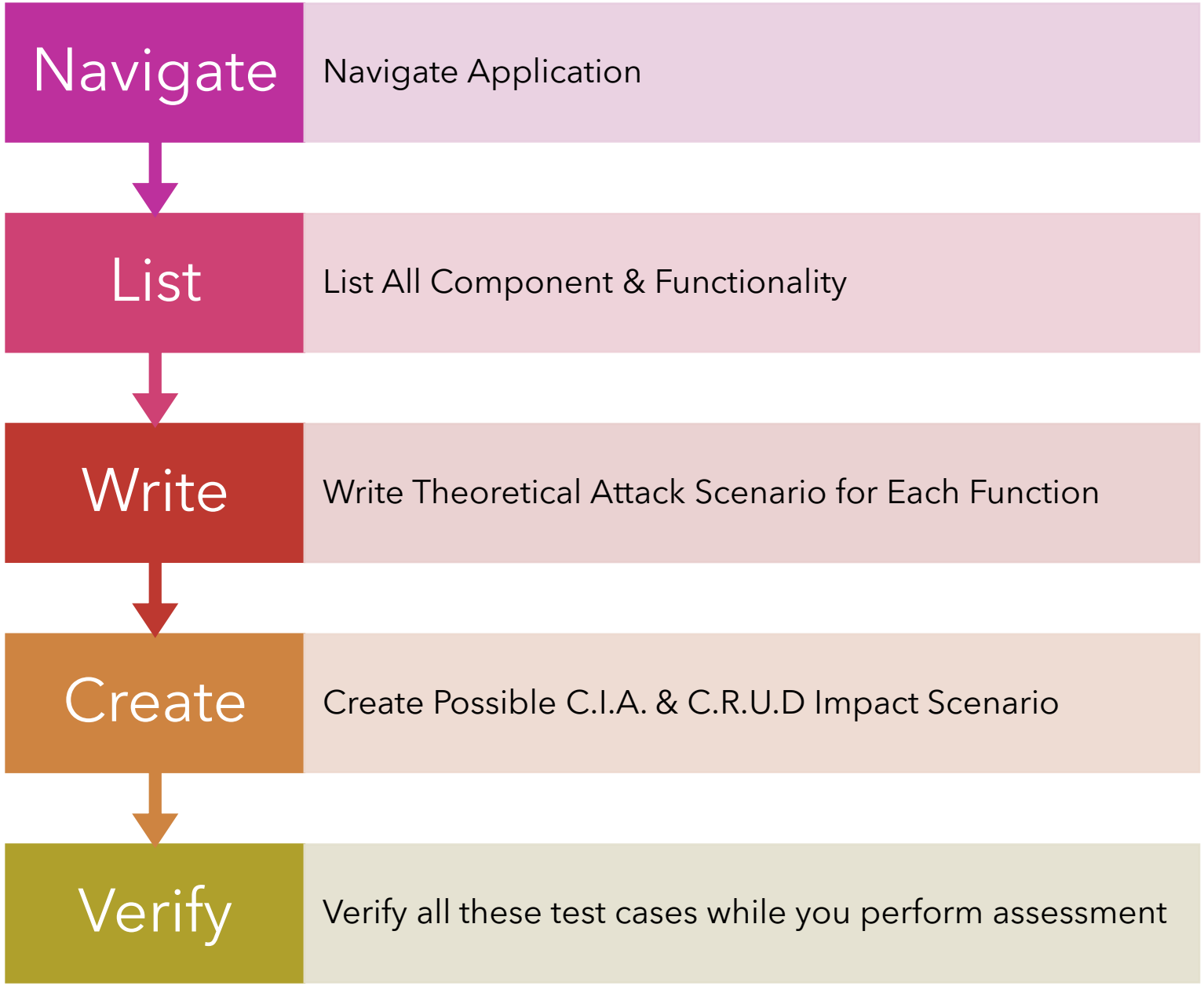
AGENDA


Application Testing Methodology
Threat Mapping
Manual Testing Approach
Recon 101
Scope Based Recon Methodology
Small Scope Recon
Medium Scope Recon
Large Scope Recon
Offensive Recon Tactics
Q/As

APPLICATION TESTING METHODOLOGY

Define	Define Target Scope
Understand	Understand Application Business Logic
Prepare	Prepare Threat Map
Perform	Perform Scope Based Recon
Perform	Perform Manual Pentest
Perform	Perform Application Specific Attacks
Learn	Learn what you lack & hit back on the target

THREAT MAPPING



MANUAL TESTING APPROACH

- Understand Application Flow
- Figure Out various possible Flows of same feature
- Try to break the application flow
- Test every possible test case for each individual functionality
- Do not miss any test case even if it’s complicated
- Rely less on tools, Proxy tool is good go.
- Learn and Hack

RECON 101

What is Recon ?

- Way to discover & create a better attack surface! (We'll see how)

Why Recon?

- Increased Attack Surface == More Security Issues
- Looking at less travelled road == More Success
- Digging assets of your target to the deepest point possible.
- Recon != Security Issues but increases probability of getting >> Security Issues.

BUSTING THE MYTHS

- Recon == Bugs
  - Recon == Asset Discovery == Increasing Attack Surface
- Recon == Manual Approach
  - Best way to perform Recon is to use hybrid approach – Automation + Manual
- Recon == Time Consuming
  - If performed properly & automated in right way, you can save a lot of time
- Recon == Subdomain Enum, Whois, Port Scanning & Fuzzing, etc.
  - Ways to perform Recon is all about how creative you can be to identify assets and increase attack surface. However, the above mentioned are some well known methods.

SCOPE BASED RECON

- Scope Based Recon is a simply methodology to divide **How to Perform** when a specific set of **Scope** is Provided.
- Scopes are divided into three categories:
  - Small Scope
  - Medium Scope
  - Large Scope
- **Why Scope Based Recon?**
  - Saves a lot of time
  - You know what exactly to look for
  - You can easily automate your recon workflow
  - Less-chance to submit Out-of-Scope Issues
  - Just like other security methodologies enables you perform a better Recon

SCOPES

Small Scope

- Specific set of Single URLs/Sandbox/QA/Staging Environment

Medium Scope

- Specific set of **"*.target.com"**

Large Scope

- Complete Internet presence including Acquisitions & Copyrights

SMALL SCOPE RECON

What to look for while performing Recon

- Directory Enumeration/Bruteforcing
- Service Enumeration
- CVEs
- Port Scanning
- Broken Link Hijacking
- JS Files for Hardcoded APIs & Secrets
- Parameter Discovery
- Wayback History & Waybackurls
- Google Dork (Looking for Juicy Info related to Scope Domains)
- Potential URL Extraction for Vulnerability Automation (GF Patterns + Automation Scripts)

What to look for while Recon:

- Subdomain Enumeration
- Subdomain Takeovers
- Misconfigured Third-Party Services
- CVEs
- Port Scanning
- Misconfigured Storage Options (S3 Buckets)
- Broken Link Hijacking
- Directory Enumeration

What to look for while Recon:

- Service Enumeration
- JS Files for Domains, Sensitive Information such as Hardcoded APIs & Secrets
- GitHub Recon
- Parameter Discovery
- Wayback History & Waybackurls
- Google Dork for Increasing Attack Surface
- Internet Search Engine Discovery (Shodan, Censys, Fofa, BinaryEdge, Spyse Etc.)
- Potential URL Extraction for Vulnerability Automation (GF Patterns + Automation Scripts)

MEDIUM SCOPE RECON

LARGE SCOPE RECON

- **What to look for while Recon:**
- Tracking & Tracing every possible signatures of the Target Application (Often there might not be any history on Google related to a scope target, but you can still crawl it.)
- Subsidiary & Acquisition Enumeration (Depth – Max)
- DNS & SSL Enumeration
- CVEs
- ASN & IP Space Enumeration and Service Identification
- Subdomain Enumeration
- Subdomain Takeovers
- Misconfigured Third-Party Services
- Misconfigured Storage Options (S3 Buckets)
- Broken Link Hijacking

- **What to look for while Recon:**
- Directory Enumeration
- Service Enumeration
- JS Files for Domains, Sensitive Information such as Hardcoded APIs & Secrets
- GitHub Recon
- Parameter Discovery
- Wayback History & Waybackurls
- Google Dork for Increasing Attack Surface
- Internet Search Engine Discovery (Shodan, Censys, Fofa, BinaryEdge, Spyse Etc.)
- Potential URL Extraction for Vulnerability Automation (GF Patterns + Automation Scripts)
- And any possible Recon Vector (Network/Web) can be applied.

SMART

~~OFFENSIVE~~ RECON TACTICS

Choose Scope Based Recon

Create a Script for Automating Scope Based Recon

Run Automation Script over Cloud.

Manually Recon (GitHub & Search Engine Dorking) while Automation Completes.

Create Cron Jobs/Schedulers to Re-Run specific Recon task to identify the new assets.

Implement alerts/push for Slack or preferred

SMART ~~OFFENSIVE~~ APPROACH FOR RECON

Q/A ARE WELCOME

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THANKS...