

Ducara Info Solutions (P) Ltd.



**C | AASX**

**Certified Android Application  
Security Expert**

[www.ducarainfo.com](http://www.ducarainfo.com)

# WHY C|AASX?

## Become an Android Application Security Expert

If you are in the field of **cyber security** and wants to know about how vulnerabilities are found in Android apps and how they can affect application security.

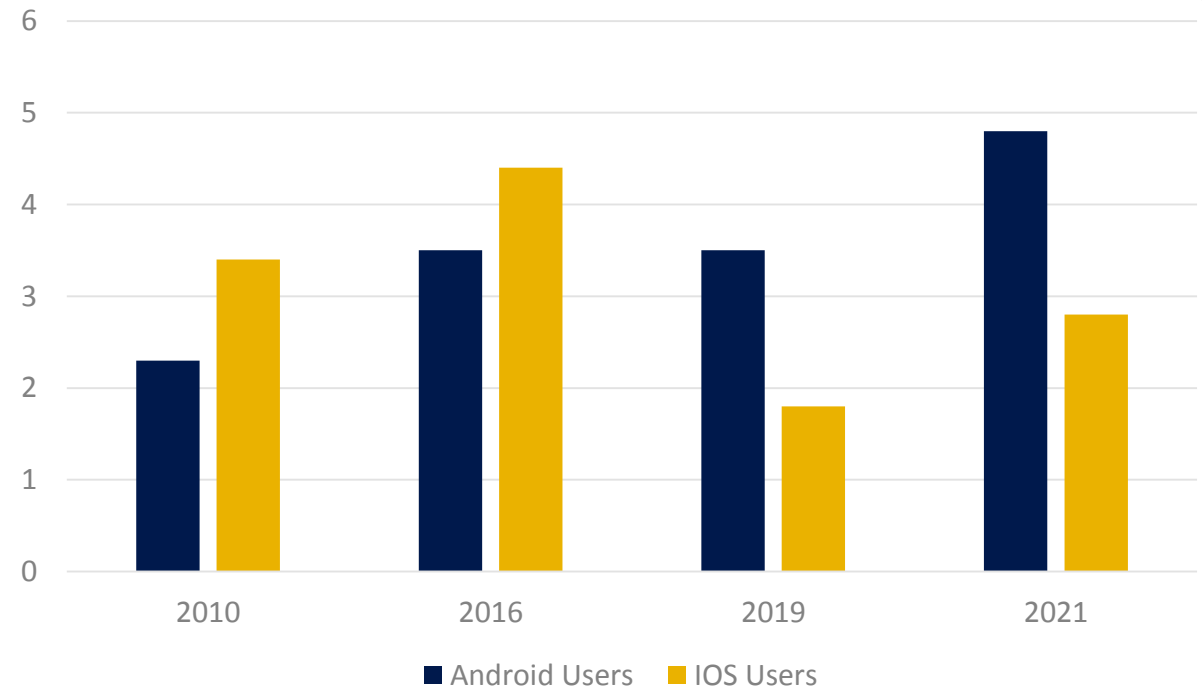
If you are a **Web Application Security Expert** and want to have hands-on vulnerabilities found in Android applications then this is the training which you should look forward.

# Are you in Trends?

Android are going to be the trendiest application in the future.

- Mobile threats are only expected to increase in **2021** with more sophisticated techniques that will run past common detectors.
- **Android Apps** are going to have the best of User Interface and better operations in coming years.

Rise in Android Users



# What will you **achieve**?

By the end of the course, you'll be able to

- Understand **Android** Platform Architecture
- Design, develop, debug, and deploy Android applications
- Use **Android SDK's Emulator** to test and debug applications
- Construct user interfaces with built-in views and layouts
- Define custom view and layout
- Develop **SQLite Data base**
- **Secure** Android applications
- Interact with **Servers** using **Web Services**





# Target Audience

Who earns C|AASX?

Course is designed for **Secure Android App** is intended for anyone who already has some knowledge on the **Android** platform.

You could be :

- a **student** currently studying computer science and cyber security
- a **professional** who needs to understand the security risks associated with Android software development, or
- a **programmer** who needs to identify, analyze and manage risks, in order to make your coding and applications more secure.

Duration: 40Hrs



# Course Outline

## Topics Covered in Course

Module	Topics	Module	Topics
1	IT Security and Secure Coding	5	Android Native Code Security
2	Android Security Overview	6	Android and Java Vulnerabilities
3	Application Security	7	Testing Android Code
4	Basics of Cryptography	8	Advices and Principles



An aerial night photograph of a city skyline, likely New York City, featuring prominent skyscrapers like the Empire State Building and the Chrysler Building. The city is illuminated with warm lights, and the sky is a soft gradient of orange and purple. A semi-transparent white rectangular box is centered over the lower half of the image, containing the text "TOPICS THAT WILL COVERED" in a bold, black, sans-serif font. The text is slightly misspelled as "COVERED" instead of "COVER".

# TOPICS THAT WILL COVERED



# Module 1:

## IT Security and Secure Coding

- Nature of **Security**
- **IT** security related terms
- Definition of **Risk**
- **IT** security vs. secure coding
- From **Vulnerabilities** to botnets and **cybercrime**
- Classification of **Security** Flaws





## Module 2:

### Android Security Overview

- **Android** fragmentation challenges
- The **Android** software stack
- **OS** Security features and exploit mitigation techniques
- The **Linux Kernel**
- Filesystem security
- **Dalvik**
- Deploying applications

# Module 3:

## Application Security

- Permissions
- Writing **Secure Android Applications**
- **Digital Rights Management (DRM)**
- Reverse Engineering and Debugging

# Module 4:

## Basics of Cryptography

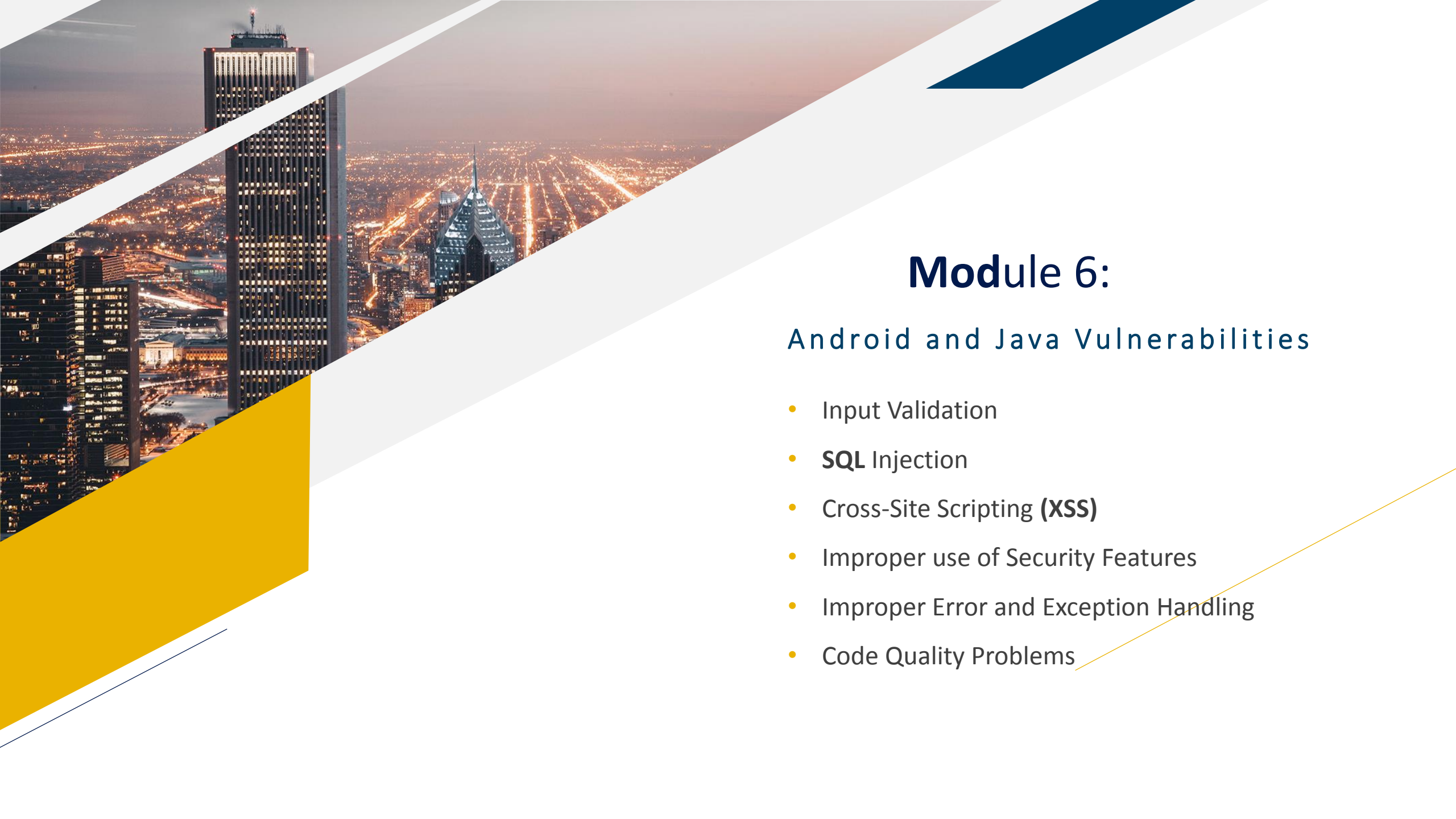
- Cryptosystems
- Symmetric-key Cryptography
- Other **Cryptographic** Algorithms
- Asymmetric (Public-key) Cryptography
- **Public Key Infrastructure (PKI)**
- Cryptography on Android



# Module 5:

## Android Native Code Security

- Buffer Overflow possibilities in Android
- **ARM** Architecture
- Buffer **O**verflow on the stack
- **P**rotection techniques – **ASLR**, **XN**, **RELRO**



## Module 6:

### Android and Java Vulnerabilities

- Input Validation
- **SQL** Injection
- Cross-Site Scripting (**XSS**)
- Improper use of Security Features
- Improper Error and Exception Handling
- Code Quality Problems

# Module 7:

## Testing Android Code

- Testing **Android Code**
- **Android Lint**
- Android Lint – Security features
- Lint Exercise
- **PMD** and PMD Exercise
- FindBugs
- FindBugs Exercise



# Module 8:

## Advices and Principles

- **Matt Bishop's** Principles of Robust Programming
- The Security Principles of **Saltzer** and **Schroeder**





# Module 9:

## Knowledge Sources

- **Secure Coding Sources** – a starter kit
- **Vulnerability Databases**



## Any Query?

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**The Technology is changing every day and we at Ducara are committed to demonstrating values.  
Embracing a digital transformation strategy which drive returns on IT security investment.**