INTRODUCTION CONT.
Lecture 2a

COMPSCI 702
Security for Smart-Devices

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INDIVIDUAL PRESENTATION

- List of recent research articles

    - https://www.cs.auckland.ac.nz/courses/compsci702s1c/seminar

- Selected from top-notch research venues

- Compiled considering relevancy, background, and interest

- A different research article not covered in

    - COMPSCI 725

    - COMPSCI 726

INDIVIDUAL PRESENTATION (2)

- Grading
  - 5% introduction (motivation, background, and problem)
  - 5% solution (idea, details, and results)

- Duration
  - Up to 3 presentations per lecture
  - Every presenter will get ~20 minutes
    - Up to 15 minutes for presentation
    - 5-10 minutes for Q&A

- Feedback
  - Lecturers
  - Students

GROUP PROJECT

- A self-exploratory and research-oriented project!

- Develop a technique and tool that should make it difficult to reverse engineer Android apps

- Develop an app that should employ your proposed technique
    - Use Java for development of your app
    - Any app with reasonable logic (be innovative!)
        - E.g., input marks (90) and output is grade (A)
    - Lines of code: 400 to 1000

- Challenge phase will begin after your app submission
    - Reverse engineer Android apps developed by other groups

STRUCTURE OF REPORT

- Introduction (1-1.5 page)
  - Context (1 paragraph)
  - Problem (1 paragraph)
  - State-of-the-art (1 paragraph)
  - Solution (1 paragraph)
  - Novelty (1 paragraph)

- Related work (2 pages)
  - Highlight how your idea is different from existing research/tools
  - Cite 5 *'strong'* research articles
  - Mention 2 tools
  - One paragraph per research article/tool

STRUCTURE OF REPORT (2)

- Proposed idea (2-3 pages)
  - Core idea and details

- Evaluation (1 page)
  - Strength of your proposed obfuscation technique
  - Performance overhead
  - Storage overhead
  - (Moreover, we will evaluate whether other groups managed to reverse engineer your app)

- Discussion (1 page)
  - Limitations
  - Possible extensions
  - Debugging and updates

STRUCTURE OF REPORT (3)

- Reverse engineering (1 page per app)
  - Obfuscation technique
  - An example from app code

- For your report (in PDF only), use the following format
  - Times New Roman with font 12
  - Single column and single line spacing
  - 1 inch margin

- For more information, visit:
  https://www.cs.auckland.ac.nz/courses/compsci702s1c/assignments

EXAM

- Lectures

- Lecture resources

- Presentations
    - Including presented research articles

- Online

- 7-10 questions

- Standard 2 hours + additional time as per Exams policy

SOME RESOURCES

- **Android Security Internals: An In-Depth Guide to Android's Security Architecture**
  Elenkov, Nikolay
  First Edition
  No Starch Press 2014
  ISBN:1593275811 9781593275815

- **iOS Hacker's Handbook**
  Miller, Charlie, Dion Blazakis, Dino DaiZovi, Stefan Esser, Vincenzo Iozzo, and Ralf-Philip Weinmann
  John Wiley & Sons, 2012

LECTURE UPLOAD POLICY

- Presentation slides will be uploaded after the lecture

READING: HOW TO READ A RESEARCH ARTICLE

- How to Read an Engineering Research Paper
  William G. Griswold
  CSE, UC San Diego
  http://cseweb.ucsd.edu/~wgg/CSE210/howtoread.html

- How to Read a Paper
  S. Keshav
  University of Waterloo
  http://ccr.sigcomm.org/online/files/p83-keshavA.pdf

- How to Read a Technical Paper
  Jason Eisner (2009)
  http://www.cs.jhu.edu/~jason/advice/how-to-read-a-paper.html

READING: HOW TO PRESENT A RESEARCH ARTICLE

- How To Make an Oral Presentation of Your Research
  Center for Undergraduate Excellence
  University of Virginia
  https://undergraduateresearch.virginia.edu/present-and-publish/presentation-tips

- Notes on Presenting a Paper
  Matthew O. Jackson
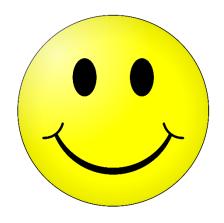 http://web.stanford.edu/~jacksonm/present.pdf

READING: HOW TO WRITE A REPORT

- How to Write a Research Paper
  Charles King
  http://faculty.georgetown.edu/kingch/How_to_Write_a_Research_Paper.htm

- How to Write a Great Research Paper
  Jon Turner
  Computer Science & Engineering
  Washington University
  http://www.arl.wustl.edu/~pcrowley/cse/591/writingResearchPapers.pdf

- Tips for Writing Technical Papers
  Jennifer Widom
  January 2006
  http://cs.stanford.edu/people/widom/paper-writing.html

CANVAS AND COURSE WEBSITE

- CANVAS for almost everything
    - https://canvas.auckland.ac.nz/courses/60529

- We will try to make lecture recordings available within a day after we receive recording links
    - Note that we have requested to record all the lectures

- Course website for lectures, seminars, and projects
    - https://www.cs.auckland.ac.nz/courses/compsci702s1c

- Piazza
    - https://piazza.com/aucklanduni.ac.nz/semester12021/compsci702

Questions?

Thanks for your attention!