



Lecture 9-1

Professional Ethics

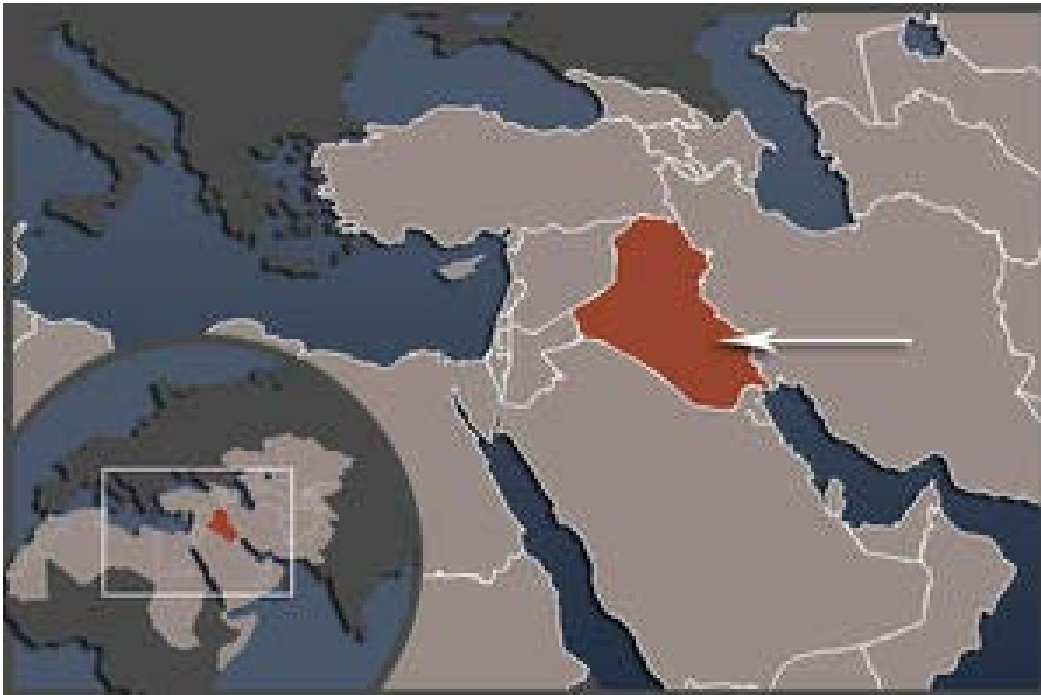
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Participation Quiz

What country is this?



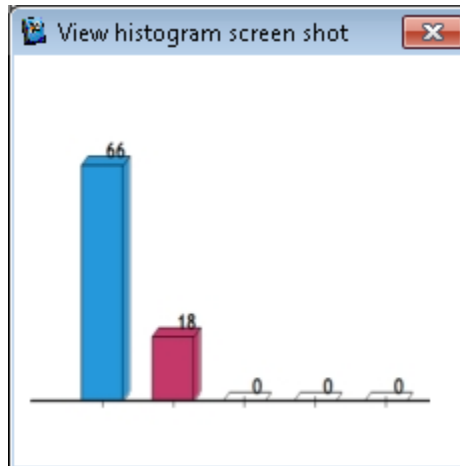
- A. Iran
- B. Jordan
- C. Saudi Arabia
- D. Iraq
- E. Syria

Is Software Engineering a Profession?

- In many ways software engineering is similar to other professions such as law or accounting
 - Dependence on professional education and practical training
 - Professional associations (IEEE, ACM)
 - Potential for bad decisions to cause significant public harm
- It's not a “full-fledged” profession:
 - No formal accreditation/licensing system
- All the same, sensible to ask software engineers to follow a code of ethics.
 - One with significant support is described in the book.
 - Nothing it says ought to come as a big surprise at this point in the course 😊.

Professional Ethics

“A UBC CS sysadmin accidentally discovers pornography in a student’s private department file space, depicting a woman the sysadmin believes may be under 18. The sysadmin should inform the department head.”



Whistle-Blowing

- Revealing a real or potential harm to the public being caused by your employer.
 - Not an attempt to take revenge on the employer, e.g., for turning down a promotion
 - Not an attempt to avoid personal responsibility for a problem that is about to come to light anyway.
- *Under what circumstances is whistle-blowing morally **justified**? When is it morally **necessary**?*

Software Warranties

- Software companies tend to write license agreements saying that the software may not perform as promised
 - “we expressly disclaim ... the implied warranties of merchantability and fitness for a particular purpose”
- Why is this reasonable?
 - Software is expensive
 - Other expensive goods are backed up by warranties
- *Should software come with warranties? If so, what should these warranties cover?*
- *Do software makers have a moral obligation to produce software that does what it promises?*

Computer Simulations

- Simulations are used to answer questions about scenarios that can't be easily observed in the real world
 - Hurricanes
 - Nuclear explosions
 - Climate change
 - Car crashes
- Models are only useful if they accurately describe reality
- *What would you need to see to trust a simulation?*
- *How accurate does a simulation have to be to be useful?*

Malware II: More Evil Code

- **Spyware/Adware**

- What is spyware? What is adware?
- *Is it ever moral to install spyware/adware on a user's computer without their consent?*

- **Drive-by Downloads**

- What is a drive-by download?
- *What do you think the best defenses are against them?*

- **General-purpose Defensive Measures**

- security patches
- anti-malware tools
- firewalls
- *Anything else?*

Attacks: how mean computers hurt nice computers

- **How:**

- **Phishing**

- *Have you been targeted? Has an attack been successful?*

- **[Distributed] Denial of Service**

- **Why:**

- **Cybercrime: professionalization of malware**

- renting botnets (DDoS; spam)
 - stealing credit card numbers, passwords

- **Cyberwarfare: states as actors or targets**

- North Korea vs USA gov, corporate sites (2009)
 - Russia vs Georgia during and after South Ossetia war (2008)
 - Stuxnet (2009-)
 - A variety of government, activist sites during Arab Spring (2011)
 - Anonymous