

UNIVERSITY OF EDINBURGH
COLLEGE OF SCIENCE AND ENGINEERING
SCHOOL OF INFORMATICS

INFR10022 PROFESSIONAL ISSUES

Monday 10th August 2015

14:30 to 16:30

INSTRUCTIONS TO CANDIDATES

Answer QUESTION 1 and ONE other question.

Question 1 is COMPULSORY.

All questions carry equal weight.

This is an OPEN BOOK examination.
You may consult any books or other documents during this examination.
The use of Calculators is permitted.

Year 3 Courses

Convener: S. Viglas
External Examiners: A. Cohn, T. Field

THIS EXAMINATION WILL BE MARKED ANONYMOUSLY

1. You MUST answer this question.

The following was published as an open letter to John Swinney, Deputy First Minister of the Scottish Government, on 5 March 2015.

Dear John Swinney,

I sat in the gallery yesterday to watch the debate on Privacy and the State. As a member of the Open Rights Group, I have a keen interest in the subject.

The Identity Management and Privacy Principles, published in October 2014 with your name on the foreword, states in Section 4.6:

“If a public service organisation needs to link personal information from different systems and databases (internally or between organisations), it should avoid sharing persistent identifiers; other mechanisms, such as matching, should be considered.”

Willie Rennie and Patrick Harvie drew attention to the proposal that stakeholders should share the Unique Citizen Reference Number (UCRN). Using the UCRN as a key would link multiple databases, in effect forming a super-database, which is what concerns those who object to the plan. In your closing speech, Harvie intervened to ask you to acknowledge that the proposal breaches the Scottish Government’s own guidelines. You responded:

“I do not believe that the proposal breaches the data privacy principles that we set out.”

Time was short, so you said no more, but I invite you now to elaborate on your bald denial. The proposal certainly appears to contravene the principle advocated by your own document—how can you claim it does not?

It is not only your own guidelines which question your plan. The British Medical Association and the Royal College of General Practitioners have raised concerns about sharing information collected by the NHS with HMRC, and the UK Information Commissioner has warned that the proposal may breach European and British data protection laws. Both these criticisms were raised during the debate, but ignored by you—I invite you to answer them as well.

There are ways forward that meet the needs of government and citizens that are far less problematic. I welcome your offer to review the proposals, and I hope that in light of these criticisms the Scottish Government will rethink its plans.

Yours,

Philip Wadler, Professor of Theoretical Computer Science
School of Informatics, University of Edinburgh

Explain the issues raised in the letter. Set out arguments in favour of and opposed to the Scottish Government's plans. What are the relevant data protection laws and how might the proposal interact with them? Describe an alternative to the Scottish Government's plans, as alluded to in the last paragraph.

[25 marks]

2. Cloud computing is the use of internet-based infrastructure, hardware and software to provide services on demand. Organisations such as Google, Microsoft and Amazon sell infrastructure capacity (e.g. storage, communications and processing) and software services (e.g. mail, office products). Cloud computing uses such resources across the world, as appropriate, and the precise location where a piece of data will be stored or processed is not necessarily specified.

AC Services is a company that has developed a cloud-based software service for small businesses to run their business systems, including accounts, human resources, sales, product and client management.

- (a) Discuss the data protection considerations that potential clients of AC Services should take into account. [12 marks]
- (b) Describe three issues that clients of AC Services might expect to see addressed in the contracts they are asked to sign. [6 marks]
- (c) Explain the term *jurisdiction*. Why might jurisdiction be relevant to the contracts between AC Services and its clients? [7 marks]

3. The design of an online bookstore appears below.

Consider the information presented when searching a popular online bookstore.*

* Based on amazon.com as of January 2006.

Showing results in: "bread"



[Waiting For Good Dough](#) by Samuel Biscuit (**Hardcover** - Jul 3, 1953)

Books: [See all 3764 items](#)

Buy new: ~~\$40.00~~ **Used & new** from ~~\$23.86~~ Usually ships in 24 hours

Excerpt from page 2: "... unless your **bread** machine uses pneumatic pistons or is ..."

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[The Bun Also Rises](#) by Ernest Hemingwaffle (**Hardcover** - Jun 3, 1926)

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[Yeast of Eden](#) by John Sconebeck (**Paperback** - Sep 3, 1952)

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Excerpt from page 1: "... wards off vampires. But **bread** should never be ..."

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Analyse this design as an information graphic. How would you improve the presentation? Cite relevant sources and explain the design principles you apply. [25 marks]