



UNIVERSITY of LIMERICK

O L L S C O I L L U I M N I G H

COLLEGE of INFORMATICS *and* ELECTRONICS

Department of Computer Science

and

Information Systems

Assessment Paper

Academic Year : 2007/2008

Module Title: E-Business Architectures

Duration of Exam : 2.5 hours

Lecturer : Michael Coughlan

Semester : 2

Module Code : CS4028

% of Total Marks : 75%

Paper marked out of : 100

Instructions to Candidates.

Section A	-	1 question. Attempt 1.	
Question 1		Mandatory question based on the project.	(20 marks)
Section B	-	3 questions. Attempt 2.	
Question 2		Website Promotion and Security	(40 marks)
Question 3		E-Business, E-Commerce, Web Applications and Security	(40 marks)
Question 4		E-Advertising and Security	(40 marks)

SECTION A

Q1. Web Application Frameworks

There are now hundreds of Web Application Frameworks available to the website developer.

- (a) Briefly describe what is meant by the term “Web Application Framework.” (3 marks)
- (b) Identify and describe the main facilities offered by a typical Web Application Framework.
Enrich your answer with examples taken from a framework with which you are familiar. (10 marks)
- (c) Briefly outline the advantages and disadvantages of using a Web Application Framework for web development. (7 marks)

SECTION B -

Three questions. Attempt two. All questions carry equal weight (i.e. 40 marks)

Q2. Website Promotion and Security

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<meta name="keywords" content="Hotel">
</head>
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<strong>Weedy's<br>Country House Hotel</strong></font></td>
<td align="right" width="135"></div></td>
<td align="right" width="130"></div></td>
<td align="right" width="130"></div></td>
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</tr></table>
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<p><br>
Set in its own gardens and amongst the breathtaking scenery of The
Burren, Weedy's Country House enjoys a perfect location. The original
house dates from the 17th Century and is the oldest house in the village
of Lisdoonvarna.
<p>All our guestrooms have been individually designed and comfort is
guaranteed... crisp white linen, fluffy white towels, luxury toiletries
combine with thoughtful colour schemes and lavish soft furnishings
to create an atmosphere of unhurried luxury.
<p>Our spacious Junior Suites have very cosy sitting areas and are exceptionally
spacious, with luxurious bathrooms, including double sinks and separate
shower cubicle.
<hr size="3">
<p></p>
Weedy's Country House Hotel, Lisdoonvarna, Co. Clare, Ireland<br>
Tel:+ 353 63 6104 4026 - Fax: + 353 63 6104 4555<br>
email: <a href="mailto:info@Weedys.com" class="gen">info@Weedys.com</a><br>
</td></tr></table></td></tr></table>
</body></html>
```

Weedy's Country House Hotel



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Weedy's Country House Hotel, Lisdoonvarna, Co. Clare, Ireland
Tel:+ 353 63 6104 4026 - Fax: + 353 63 6104 4555
email: info@Weedys.com

The Weedy's Country House Hotel web page is a web page promoting the Lisdoonvara hotel. The web page is shown above. The page has not yet been optimised for search engine placement.

Using this web page and the web page source code shown above;

- Identify the five most important keywords for the web site and provide a justification for each of the keywords selected. (10 marks)
- Make recommendations that detail how the web page might be optimised to improve the search engine ranking with respect to the chosen keywords. For each of your recommendations, comment on its relative importance in ensuring a better search engine ranking. (18 marks)
- The optimisations you can make to the web page might not be sufficient to ensure high search engine placement. Write a brief note detailing what other measures might have to be taken, and why, to ensure high search engine placement. (6 marks)
- Exploiting the Cross-Site Scripting (XSS) vulnerability requires a fairly sophisticated type of attack but there are some web application vulnerabilities which are easy to exploit. Identify, and describe, three such vulnerabilities. (6 marks)

Q3. E-Business, E-Commerce, Web Applications, and Security

- (a) E-commerce has number of distinct features that distinguish it from other forms of technology-based commerce. Identify, and briefly describe, three such features. (6 marks)
- (b) Briefly describe the operation of four of the following business models, giving examples and paying particular attention to the sources of revenue and how the model operates: e-auction, third party marketplaces, e-payment services, portals, digital content providers, online trading. (10 marks)
- (c) Enterprise Resource Planning (ERP) systems often contain Supply Chain Management (SCM) and Customer Relationship Management (CRM) modules. Briefly describe what is meant by SCM and CRM and, for one of them, outline the benefits which a business might be expected to derive from its use. (8 marks)
- (d) Ajax is a new technology which mainly addresses a problem with other client side scripting technologies. Briefly outline the problem which Ajax is intended to address and describe the combination of technologies through which it achieves its results. (8 marks)
- (e) A Trojan horse is a method hackers often use to compromise the security of a computer system. Briefly describe what is meant by the term “Trojan horse”, and identify, and briefly describe, four types of Trojan horse. (8 marks)

Q4. E-Advertising and Security

- (a) Usenet news is a global, distributed Internet discussion system where users post and read public messages. Show how a combination of Public Key encryption, message digests (hash), and digital signatures, could be used by Usenet users to allow them communicate privately in a public forum. (8 marks)
- (b) Cross-Site Scripting (XSS) is a type of web application attack. Briefly describe what is meant by the term “Cross-Site Scripting” and describe what makes a web application vulnerable to this kind of attack. (3 marks)
- (c) When Banner Ads began to lose their effectiveness, advertisers turned to other types of web-based advertising. Identify, and briefly describe, four other types of web-based advertisement and comment on how effective they are thought to be in achieving the advertiser’s objectives. (12 marks)
- (d) An acquaintance has set up a website which is attracting a large number of hits. Now that the site has become popular he is proposing to leverage this popularity, for the purpose of making money, by placing a large number of banner ads on the site.
 - i. Briefly outline what arguments you might make against this course of action. (5 marks)
 - ii. Assume that avarice wins out and that your arguments are not sufficient to dissuade your acquaintance from loading his site with advertising. Since this is a niche site the owner has neither the time nor know-how to tout for advertisements for the site. Neither does he have the expertise to implement technologies such as ad rotation. Suggest, and describe, a solution to this problem that allows advertising to be hosted on the site without requiring the owner to search for advertisers or to implement advanced technologies. (12 marks)