

OLLSCOIL NA hÉIREANN  
THE NATIONAL UNIVERSITY OF IRELAND  
NATIONAL UNIVERSITY OF IRELAND, GALWAY

SEMESTER 2 EXAMINATIONS 2003

SECOND YEAR BA EXAMINATION

INFORMATION SYSTEMS II (CT244)

Prof. D. Bell  
Prof. G. Lyons  
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Time allowed: Two hours

Candidates are required to answer Question One in SECTION A  
and two other questions from SECTION B

## SECTION A

Q1. [i] Examine the following code:

- A. Explain the meaning of each of the numbered lines of code.
- B. Describe in detail the over all effect of the code.

```
<HTML>  
<HEAD>  
    <TITLE>Question 1</TITLE>  
    <SCRIPT LANGUAGE=JAVASCRIPT TYPE="TEXT/JAVASCRIPT">  
        <!-- Hide script from old browsers  
  
        myPix = new Array("img1.gif","img2.gif","img3.gif")  
        thisPic = 0  
        imgCt = myPix.length - 1  
  
        function processPrevious() {  
            if (document.images && thisPic > 0) {  
                thisPic--  
                document.myPicture.src=myPix[thisPic]  
            }  
        }  
  
        function processNext() {  
            if (document.images && thisPic < imgCt) {  
                thisPic++  
                document.myPicture.src=myPix[thisPic]  
            }  
        }  
  
        // End hiding script from old browsers -->  
    </SCRIPT>  
</HEAD>  
  
<BODY BGCOLOR=WHITE>  
<H1 ALIGN=CENTER>Question 1  
10.) <P><IMG SRC="img1.gif" NAME="myPicture" WIDTH=201 HEIGHT=155>  
11.) <P><A HREF="javascript:processPrevious()"> Previous</A>  
      &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&~  
      <A HREF="javascript:processNext()">Next </A>  
      </H1>  
</BODY>  
</HTML>
```

**[15 Marks]**

[ii] In relation to JavaScript explain the following concepts:

- Events
- Functions
- Methods
- Objects
- Properties

**[10 Marks]**

- [iii] Write a program that accepts an arbitrary amount of numbers from the user. The user should be able to exit the program, i.e. there should be a facility allowing the user to show that they have finished entering numbers. The program should then display in a HTML page:

- the sum of the numbers;
- the smallest number.

The program should also demonstrate your knowledge of an alert box, an advertisement banner and customized status bars.

[15 Marks]

#### SECTION B

- Q2. [i] Discuss the rationale for "divide and conquer" approach to systems analysis and design.

[5 Marks]

- [ii] Write notes on two of the following topics illustrating your response with examples where appropriate:

- Management Information Systems
- Decision Support Systems
- Expert Systems

[10 Marks]

- [iii] Describe the Study and Design phases of the systems development life Cycle. Your answer should address each phase's purpose, participants, inputs, outputs and activities.

[15 Marks]

- Q3. [i] Write notes on two of the following topics illustrating your response with examples where appropriate:

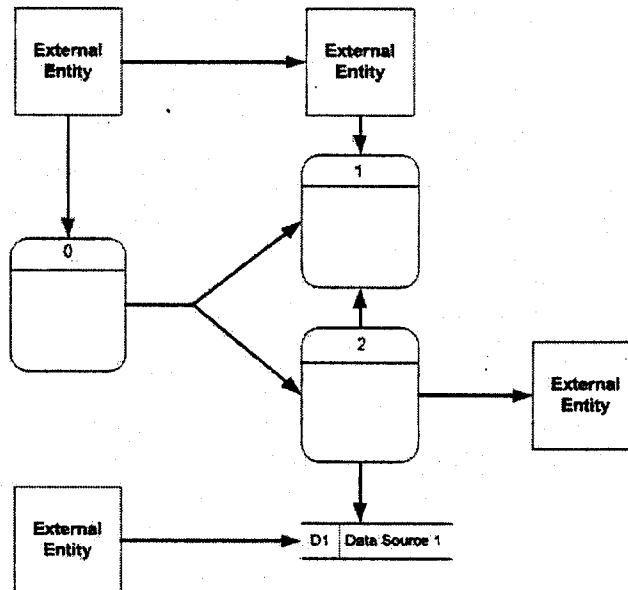
- Image Maps
- Recommender Systems
- Common mistakes in Web page design

[10 Marks]

- [ii] Discuss the advantages and disadvantages of Web DBMS integration, outlining the technologies that could be used.

[20 Marks]

- Q4. [i] Describe how processing modeling techniques might be used at various stages of the systems development life cycle. [6 Marks]
- [ii] The following DFD contains four common errors. Find and describe each error, explaining why it should not occur in a properly designed system.



[8 Marks]

- [iii] Given the following narrative description, draw a context diagram and a system-level data flow diagram for the portion of the activities described. In your answer state any assumptions described.

BlueBell Financial Planning System (BFPF System): In preparing a personal financial plan, data is collected from the client on a Personal Data form, and stored in a Client Data file. Data from this file is then used in preparing the client's Financial Plan report. This preparation process also uses data from an Investment Data file and data from an Economic Data file. Investment Data is obtained by collecting data from various Companies (e.g. from Annual Reports) and Banks (e.g. CDs, etc.). Economic Data is collected from Government Agencies. After a Financial Plan report is prepared, one copy goes to the client, and one copy is stored in a Financial Plan file for future reference.

[16 Marks]