VCE IT APPLICATIONS

UNIT 3 OUTCOME 1



REVISION NOTES

**Unit 3 Outcome 1**

On completion of this unit the student should be able to apply stages of the problem-solving methodology to create a prototype website that meets an online community’s needs, and explain the technical requirements to support the hosting of this website.

To achieve this outcome the student will draw on key knowledge and key skills outlined in Area of Study 1:

**Key Knowledge**

1. Types, purposes and functionality of websites that support information exchange within online communities
2. Types of networks and the functions of their key hardware and software components
3. Capabilities of wired and wireless communications technology to support local and remote communications
4. Hardware and software requirements for setting up websites on servers, including operating system, web server software, protocols, security and proxy servers
5. Stages of the problem-solving methodology
6. Types and purposes of online communities including social, work-based, project/interest-based that support the purposes of collaboration, knowledge sharing and collective identity
7. Needs of online community members that affect the nature of their websites, including access requirements (open or closed)
8. Non-technical constraints on website solutions, including privacy, copyright and human rights requirements and social online protocols
9. Design elements that influence the functionality and appearance of websites
10. Design tools for representing website solutions
11. Functions of web authoring software used to manipulate data
12. Manual and electronic validation techniques
13. Formats and conventions applied to websites in order to improve their effectiveness for intended users
14. Methods and techniques for testing that the solutions perform as intended

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| **1. Types, purposes and functionality of websites that support information** **exchange within online communities** |

1. For each of the following types of websites **describe** how the site functions and the purpose of the site (e.g. exchange information, manage shared knowledge, etc.)

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| **Website** | **Function & Purpose** |
| Blog |  |
| Chat Room |  |
| Forum |  |
| Social Networking |  |
| Wiki |  |

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| **2. Types of networks and the functions of their key hardware and software components** |

**1. Describe** how a LAN is different to a WAN

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**2. Describe** how a Client/Server is different to a Peer to Peer network

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**3. Explain** how a Router is different to a Switch

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**4. Explain** the purpose of a Network Interface Card

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**5. Explain** the advantage of using a Wireless Access Point compared to a cabled network

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| **3. Capabilities of wired and wireless communications technology to support local and remote communications** |

For each of the following transmission media **describe** how the media functions and list the approximate data transfer rate, distance signals travelled and whether the signal is susceptible to interference

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| **Transmission Media** | **Function** | **Data Transfer Rate** | **Distance Travelled** | **Interference** |
| Fibre Optic |  |  |  |  |
| Twisted Pair |  |  |  |  |
| Microwave |  |  |  |  |
| Satellite |  |  |  |  |
| Radio |  |  |  |  |
| Infra-Red |  |  |  |  |

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| **4.Hardware and software requirements for setting up websites on servers****including operating system, web server software, protocols, security & proxy servers** |

**1. Explain** how a Web Server is different to a Proxy Server

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**2. List** three features of Network Operating System

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**3. Describe** two functions of Web Server Software

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**4. Explain** how Encryption works and what threat it attempts to stop

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**5. Describe** how data is transferred differently on an Ethernet network compared to a TCP/IP network

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| **5. Stages of the Problem-Solving Methodology** |

**1. Draw** the Problem-Solving Methodology diagram

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**2. Explain** how Functional Requirements differ from Non-Functional Requirements

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**3. Explain** what a Solution Constraint is

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**4. Explain** how a Technical Constraint is different to a Non-Technical Constraint

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| **6. Types and purposes of online communities including social, work based, project/interest based that support the purposes of collaboration, knowledge sharing and collective identity** |

For each of the following scenarios indicate the type of online community and the main purpose of the community

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| **Scenario** | **Type** | **Purpose** |
| Members of a Walking Club want to be able to share information about walks around Melbourne |  |  |
| A group of Accountants needs to collate the financial information of a company |  |  |
| Supporters of a football club want to set up a site where they can communicate and feel part of a group |  |  |
| Members of the group want to post personal information about themselves along with photos and videos |  |  |
| Telstra created a customer only area where customers can view their bills, make payments and email the support department |  |  |
| The School has used the School logo and motto on every edition of the online newsletter |  |  |

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| **7. Needs of online community members that affect the nature of their websites, including access requirements (open or closed)** |

**1. Explain** how a website for an online community of teenagers may differ to an online community for older people

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**2. Discuss** reasons why a online community may wish to have part of their site closed access

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Melbourne Golf Club wishes to have a website that has a home page and then provides general information to visitors such as course details and contact us. They would also like to have a private member section where newsletters and bookings can be made. **Draw** a site map for the site (showing both open and closed access)

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| **8. Non-technical constraints on website solutions, including privacy, copyright and human rights requirements and social online protocols** |

**1. Complete** the following table defining each term and giving an example how an online community can manage the situation

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| **Issue** | **Definition** | **Example** |
| Privacy |  |  |
| Copyright |  |  |
| Human Rights |  |  |

**2. Explain** what a Social Online Protocol is

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**3. List** five Issues that Protocols need to be developed for

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| **9. Design elements that influence the functionality and appearance of websites** |

**1. List** Seven Design Elements

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**2. Describe** two appearance design elements that have been incorporated into the design above

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**3. Describe** two functional design elements that have been incorporated into the design above

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| **10. Design tools for representing website solutions** |

**1. List** two Design Tools for Appearance suitable for Web Authoring

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**2. List** two Design Tools for functionality suitable for Web Authoring

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To login to the Melbourne Car Clubs forum user’s first need to go to the site homepage, and then navigate to the members page, then enter a username and password. If the username & password is valid . If the username & password is invalid an error message is displayed, then the user is returned to the home page

**3. Create** a flow chart to represent the above process

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| **11. Functions of web authoring software used to manipulate data** |

1. Describe the following Web Authoring functions

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| **Function** | **Description** |
| Cascading Style Sheet |  |
| Relative Hyperlinks |  |
| Absolute Hyperlinks  |  |
| Meta Tags |  |
| Alt Tags |  |
| Forms |  |
| Buttons |  |

**2. Explain** how tables assist in laying out each page

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| **12. Manual and electronic validation techniques** |

**1. Explain** what validation is

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**2. List** when validation occurs

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**3. Discuss** how manual validation is different to electronic validation

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**4. Identify** one manual validation method & one electronic validation method can be used in Web Authoring

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| **13. Formats and conventions applied to websites in order to improve their effectiveness for intended users** |

**1. Define** the term Format

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**2. Define** the term Convention

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**3. List** five Conventions followed in Web Authoring

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| **14. Methods and techniques for testing that the solutions perform as intended** |

**1. Define** the term “Testing”

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**2. Explain** how “Informal Testing” differs from “Formal Testing”

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**3. Explain** how Testing help improve the “Effectiveness” of a website

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**4. Indicate** in which stage of the Problem-Solving Methodology are tests developed

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**5. Indicate** in which stage of the Problem-Solving Methodology are tests carried out

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