Assessment Task 1: Knowledge Questions

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| Course code and title | **ICT50220 Diploma of Information Technology** |
| Unit code and  title | **ICTWEB513 Build dynamic websites** |
| Due date | 28/05/2024 |
| Resources  required | • ICTWEB513 and ICTWEB517 Moodle Site  • Access to computer and internet  • Learner resource |
| Decision making rules | To achieve an overall satisfactory result for this assessment task:   * All questions must be answered satisfactorily |
| Learner  instructions | This task involves answering 15 questions.  For this task you will:   * Complete it individually. * Write answers to all questions. * Have time to read and review the assessment task in class. * Complete it in your own time and submit your answers electronically via Moodle by the due date. * Save the document as Assessment Task 1 StudentID.docx.   You must agree with the assessment submission terms and conditions by clicking on the ‘I confirm’ radio button in Melbourne Polytechnic Moodle prior to the submission.  If you have any questions about the task or concerns about your ability to complete the task, please discuss this with your Assessor. |

# Knowledge Questions

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|  | **What is programming control? Include in your response the 3 design structures.**  **(30-60 words)** | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Process control is to control the execution of code according to a certain structural sequence.  There are three main structures in process control, namely sequential structure, branch structure and loop structure, which represent the order of three types of code execution. |  |  |

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| 1. 2 | Explain the importance of authentication and web security.  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Authentication is the process of confirming a user's identity and providing access to sensitive information.  During the authentication process, if a match is found in the file, the authentication process is complete and the individual can be pushed to the authorization process.  Web security blocks many web-based attacks by providing a proxy between users and their browsers.  Authentication and web security are important to protect your business, brand and reputation, as well as prevent financial loss and closure of your business website, while retaining customers and visitors. |  |  |

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| 1. 3 | Explain the difference between HTTP and HTTPS.  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | HTTP refers to a hypertext transfer protocol for network transmission and file transfer between networks, or between computer users.  HTTP specifies what messages a client may send to the server and what responses it may receive.  The switch from https to https can help corporate networks improve user access security, especially for companies that store sensitive information and provide services such as financial transactions. |  |  |

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| 1. 4 | Explain the difference between stateless and stateful applications.  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Stateless means that it does not use technologies such as sessions and cookies to store data, and it is not affected by previous page visits and will not affect subsequent page visits.  In stateless mode, the server does not save any client session information.  Stateless Programming In a stateless program, the program does not maintain state.  Stateless does not save state specifically for a specific client.  Stateless means that no state is retained between different method calls.  A stateful application means that the relevant information of the requester already exists on the server before initiating the request, otherwise the request cannot be completed. |  |  |

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| 1. 5 | Provide an overview of the typical steps an organisation would require you to follow when developing a website.  (30 -60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Understand the needs and clarify the purpose of website development.  Research and develop business requirements documents.  Design website structure.  After website development, adjustments are made based on feedback information, and then submitted to the client for review until the client confirms the completed design.  Test, evaluate, and improve the website. Then deploy the website to the server and publish it.  Carry out website filing, website backup, post-maintenance, etc. |  |  |

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| 1. 6 | What cyber security protocols can be used to protect your website? Give 3 examples and provide an explanation for each.  (50-100 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | 1. MIME: Multipurpose Internet Mail Extensions, a widely used email technical specification and security protocol. 2. SET: Secure Electronic Transaction, used for instant electronic payment.   PKI: The PKI architecture uses certificates to manage public keys and realize automatic key management on the Internet to ensure the confidentiality and integrity of online data. |  |  |

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| 7 | What is a session in a web application, when would you use it?  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Modern and complex web applications need to retain per-user information or state across multiple requests.  Sessions ensure that users can apply secure access controls, authorized access to user private data, and increase application availability.  A web session is a series of network HTTP request and response transactions associated with the same user.  When the data is larger than 4k, cookies cannot be used, and the session has larger capacity.  Session can be used when larger storage capacity is needed.  Sensitive information such as account passwords will be more secure if stored in the session.  Session can implement the shopping cart, save and track the user's status information. |  |  |

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| 8 | What is hypertext mark-up language? How can it help you as a web developer?  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | HTML is a markup language, including a series of tags. These tags can be used to unify document formats on the Internet.  HTML allows web page producers to create complex pages that combine text and images. These pages can be viewed by anyone else on the Internet, regardless of the type of computer or browser used.  Using HTML, the information that needs to be expressed is written into an HTML file according to certain rules, and is recognized by a dedicated browser, which is the web page we see.  HTML text is descriptive text composed of HTML commands. |  |  |

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| 9 | What are cascading style sheets? How can they help you as a web developer?  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | CSS defines how to display HTML elements and is responsible for adding styles to HTML 4.0 to solve the problem of separation of content and presentation.  CSS can statically modify web pages and can also cooperate with various scripting languages to dynamically format various elements of web pages.  CSS provides pixel-level precise control over the layout of element positions on web pages.  CSS controls the display of different layout styles for tags within HTML. You can control the corresponding html tag color, font size, font, width, height, floating and other styles. |  |  |

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| 10 | Good website design includes being visually pleasing and consistent across all pages. Why is this important?  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | If the website interface is too ugly and a lot of content is too messy, customers will be disgusted as soon as they open the website.  Aesthetics, layout, user experience, etc. are all factors that need to be considered and have an impact on the website.  Website consistency reduces misunderstandings when users interact with your product. The interface will also become easier to learn for new users.  Website consistency makes the user interface predictable and learnable, and brands gain reliable and consistent presentation and performance as a result. |  |  |

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| 11 | Why do you create a sitemap and navigation design during the design stage of website development?  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Sitemap is an overall description of the content structure of the website, which can reflect the specific situation of links between web pages of the entire website.  Sitemap is an important part of website SEO. It can improve the natural ranking of non-advertising websites on search engines, expand the website's exposure in search engines, and allow more audiences to see your website.  Sitemaps can help you understand the path from one page to another. |  |  |

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| 12 | Explain the importance of user inter-face design.  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Information exchange between applications and people is carried out through interfaces, which are the most direct interface for applications and users to interact.  Some novel designs will deepen the user's impression of the software and improve the user's usage of the software.  No matter what the purpose of the application, there will be an "interface" for interacting with the user, that is, the interface. Whether the interface is simple, easy to understand and easy to operate largely determines the quality of the application.  A well-designed interface can bring users a relaxed, pleasant feeling and a sense of success. |  |  |

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| 13 | What is the purpose of the W3C standards?  (30-60 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | W3C:  Founded in 1994, the World Wide Web Consortium is the most authoritative and influential international neutral technical standards organization in the field of Web technology.  W3C organizes W3C's standards activities by establishing domain and standards programs.  W3C can:  Easily crawled by search engines.  Viewers do not have to download another browser specifically for a web page, thus maintaining the compatibility of web pages in various browsers.  Network bandwidth requirements are reduced, saving server costs.  The loading speed of web pages will be significantly improved. |  |  |

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| 14 | How are the following features and functions of web applications important to user experience?   * Mobile friendly * Social integration * Push notifications * Live chat * Payments   (10-30 words per response) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | Mobile friendly:  People prefer to use mobile devices for regular browsing, and responsive web design can increase user experience and convert potential visitors into customers.  Social integration:  It can realize the amplified utilization, sharing and reuse of social resources, and can also effectively improve the efficiency of resource allocation.  Push notifications:  Push notifications can turn these inactive users into active users, triggering purchases immediately and increasing conversion rates.  Live chat:  Live chat eliminates long wait times for voice calls and online submission of questions.  Live Chat Increases User Satisfaction Customers, convenience is the biggest benefit of the live chat feature.  Payments:  Ensure the non-repudiation of electronic transactions and business.  Improve user payment efficiency and convenience, making the checkout process quick and easy. |  |  |

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| 15 | What are the advantages and disadvantages of hypertext transfer protocol (HTTP)?  (100-200 words) | | |
|  | Answer | Satisfactory | Unsatisfactory |
|  | advantage:  Continuously updated from http1.0 to http1.1 to http2.x, the http protocol has been expanding new attributes.  Stateless, each request is independent of each other, and there is no need to save context information by default.  HTTP has a mature software and hardware environment, is widely used, and is the infrastructure of the Internet.  Reliable transmission, because the http protocol is an application layer protocol based on the tcp protocol, and the tcp protocol is a reliable transmission protocol.  shortcoming:  Privacy is an issue faced in HTTP connections. If any hacker manages to intercept the request, they can view all content present in the web page. In addition to this, they can also collect confidential information such as usernames and passwords.  HTTP uses more system resources, resulting in more power consumption. Since today's IoT devices contain wireless sensor networks, HTTP is not suitable for use.  Even if HTTP receives all the data it needs, the client will not take steps to close the connection. Therefore, during this period, the server will not exist.  HTTP is insecure and cannot verify the identity of the communicating parties, nor can it determine whether the message has been tampered with. |  |  |

# Assessment Task Summary – Task 1: Knowledge Questions

| **Trainer/Assessor to complete the following:**  **Needs to be customised for the tasks**  **THE LEARNER:** | | | Yes | No |
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| 1. | Satisfactorily answered all questions | |  |  |
| **FEEDBACK** | | | | |
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| **OVERALL TASK RESULT** | | | | |
| Satisfactory  Not Satisfactory (resubmission required) – Due date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| **DATE ASSESSMENT RETURNED** | |  | | |
| **TRAINER/ASSESSOR NAME** | |  | | |
| **TRAINER/ASSESSOR SIGNATURE** | | X | | |

| **LEARNER DECLARATION: Please read, tick and sign below** | | | |
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| I, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_have been advised of the outcome of this assessment task.  PRINT NAME | | | |
| **LEARNER Signature** | X | **Date** |  |