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| **Qualification details** | | | |
| **Training Package Code and Title** | ICT - Information and Communications Technology (Version 8.0) | | |
| **Qualification National Code and Title** | ICT50220 Diploma of information Technology (Release 2) | **State code** | BGJ4 |
| **Assessment Title** *(as per DAP)* | Assessment Task One (Individual Project) | | |
| **Unit National Code & Title** | ICTWEB513 Build dynamic websites | | |
| ICTWEB514 Create dynamic web pages | | |

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| **Date Due** | Week Five | | **Date Received** | |  | |
| **Student Name** | Poorav Sharma 30045900 | | | | | |
| **Student Declaration** | I declare that the evidence submitted is my own work: | | | | | |
| **Assessor Name** |  | | | | | |
| **Assessment Decision** | Satisfactory | | | Not Yet Satisfactory | | |
| **Assessor Signature** |  | | | **Date** | |  |
| **Is student eligible for reassessment (Re-sit)?** | No | Yes | | **Re-assessment Date:** | | Week Twenty |

|  |  |  |  |
| --- | --- | --- | --- |
| **Feedback to student** | | | |
| *Via Blackboard (LMS) – Please check [Grade] section.* | | | |
| **Feedback from student** | | | |
| *Via Blackboard (LMS) – Please use [Comment] section during submission.* | | | |
| **Student signature** |  | **Date** |  |

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| --- | --- |
| **Assessment Instructions** | |
| **TO THE ASSESSOR** |  |
| Type of Assessment | Individual Project |
| Duration of the assessment | 5 class sessions (Weeks 1-5) |
| Location of assessment | Classroom |
| Conditions | Assessor to ensure that the noise levels, natural interactions and time variances are maintained as it would be in the Software Development industry.  Learners are required to complete the required tasks in class and submit the required documentation electronically via Blackboard |
| Elements and Criteria | As detailed in the assessment plan  You are required to make sure that all students meet the elements, performance criteria and oral communication items as outlined in the provided solution |
| **TO THE STUDENT** |  |
| Purpose of Assessment | You are required to show you can:  ICTWEB513 Build dynamic websites   * Demonstrate your skills and knowledge by creating, coding, debugging, and testing a dynamic website, * Establish user requirements and then research and collect information about business requirements and legislative standards, * Manage time and tasks to produce a hierarchy of web pages showing navigation.   ICTWEB514 Create dynamic web pages   * Review technical requirements for client-side dynamic content, * Apply applicable languages and technologies to develop templates for web site creation, * Test and evaluate the dynamic content and present feedback.   The student must demonstrate the ability to complete the tasks outlined in this assessment and is expected to use systematic analytical processes and effect time management to meet the goals/deadlines outlined in the DAP. |

|  |  |
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| Allowable Materials | Blackboard Topics, SDLC, Weekly readings (PDF), Example programs and Independent Outside of Class Activities |
| Required Resources | Web links and example code can be downloaded from the Blackboard portal.  PC with Notepad++, Turnkey Web Server, GitHub, MSOffice.  Internet Access to GitHub and www.citems.com.au/ |
| Reasonable Adjustment | In some circumstances, adjustments to assessments may be made for you. If you require support for literacy and numeracy issues; support for hearing, sight or mobility issues; change to assessment times/venues; use of special or adaptive technology; considerations relating to age, gender and cultural beliefs; format of assessment materials; or presence of a scribe you need to inform your lecturer. |
| Assessment Submission | All questions and programming activities must be attempted. All written answers must be submitted in this assessment document in the appropriate space.  Use of research tools and peers in formulating answers are acceptable – but work submitted must be your own work.  Final project documentation is to be uploaded to the appropriate area in the Blackboard course created for this unit.  If you are marked as NYS (Not Yet Satisfactory) on your first attempt, you will be provided with another opportunity to re-attempt the assessment. |
| Portfolio Description | A project of web coding tasks and written questions which should be completed in class and finished in the students’ own time on a weekly basis as per the Delivery and Assessment schedule.  Question 1 – Design Specifications  Question 2 – Web Page Content  Question 3 – Version Control  Question 4 – Design Approval  Question 5 – Website Development  Question 6 – Testing  Question 7 – Demonstration, Feedback and Signoff |

# Scenario

You have applied for the role of a Senior Web Programmer with CITE Managed Services, as part of the application process you are required to demonstrate your knowledge and skills by creating a multi-page website. The details and criteria are provided in the following paragraphs.

The multi-page website will utilise the Bootstrap framework for navigation and display information as requested. Ensure your development follows an Agile methodology that is recorded and maintained using your GitHub account.

You should consult with the CITE representative (your Lecturer) if you are unsure about any of the problems or questions in this assessment. Your primary research should focus on the resources on the Blackboard LMS and CITE web site, additional information can be collected from the Internet, ensure all sources are referenced in your submission. You must demonstrate your working website before uploading to Blackboard, your Lecturer (Assessor) will sign off to ensure all the criteria are satisfied.

## Minimum Client Requirements

* A single home web page (index.html) as the entry point into the website.
* A single contact web page (contact.html) with links to the CITE and SMTAFE websites.
* The user can navigate between all web pages using a suitably labelled navigation system.
* Navigation can be vertical/horizontal or tabbed using the appropriate Bootstrap framework.
* The navigation must be consistent across all web pages. All web pages must have a consistent theme (colours, fonts, etc)
* The user can select/click an item on the content web pages and the appropriate answer/definition will be displayed.
* The content display must be accordion or collapse; any variation must be approved by the Lecturer before implementation.
* The website must be compatible with all contemporary web browsers.
* The website must be compatible with all major devices (PC, Mobile).
* The website must be WCAG compliant where appropriate.
* The development must fully utilise all aspects of the Bootstrap framework version 5; visit the Bootstrap URL to review and select the appropriate components, https://getbootstrap.com.

## Suggested Interface Design

|  |  |  |
| --- | --- | --- |
| Graphical user interface, application  Description automatically generated | Graphical user interface, text, application, email  Description automatically generated | Graphical user interface, text, application, Word  Description automatically generated |
| Home Page | Content (accordion layout) | Content (collapse layout) |

## Question 1 Design Specification

Provide a suitable description/explanation for each client requirement, and then insert your GUI design with labels that highlight all the major features. Complete the following Design Specification template to answer this question.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Design Specification | | | | |
| Developer Name | Poorav Sharma | | Date | 13/09/2022 |
| Technical Requirements | | | | |
| Requirement | | Description | | |
| 1. What is the purpose of the Website? | | The purpose of the website is to utilise CSS, Bootstrap and HTML to create a multi-page website to display information requested. | | |
| 2. Functionality: How will a user navigation the website and access the content? | | The user will use the navigation bar to access the different content of the website. | | |
| 3. Cross Platform: How will the website display on various OS and Device? | | The website will have the same display across different platforms. | | |
| 4. Libraries and Frameworks: What web technologies will be used on the website? | | An accordion and collapse button are used on the website to display information requested. | | |
| Prototype Specification (GUI Design Diagram and Navigation Diagram) | | | | |
| How will the website look and what GUI specifications are required?  The website must have a navigation bar. It must also have an accordion or collapse button to show the information required. The website must be customised so that the font, background, and layout are personalised using CSS. | | | | |

## Question 2 Web Page Content

Your next task is to create the content for each of the web pages on your website. You are required to research and provide suitable answers for the following groups of questions/definitions. Each group of questions/definitions must be displayed on a separate web page using a similar page layout as shown in your design.

### Content Questions (group one)

Provide a suitable answer for the following questions.

What are the principles of analysis and design?

Analysis emphasizes an investigation of the problem and requirements, rather than a solution. Design emphasizes a conceptual solution that fulfills the requirements, rather than its implementation.

What are website architectural requirements?

Website architecture requirements are structures and features a website must have to ensure it meet the business goals while delivering a great experience for the users.

What are website design structures, including hierarchy and navigation design?

A website’s structure can be defined as the structural projection of an informational space that provides intuitive content access. A website’s structure is important when designing a systematic approach to the process of developing proper navigation. Hierarchy model are possibly the most common types of website structures. They start with a broad set of information (parent pages) that filters down into more detailed information (child pages). Sometimes these structures are called trees, and they are very similar to organizational charts in corporations.

What are user-interface design requirements and production processes?

User-interface design requirements are a composition of interface animation, visual element, screen layout and content. It a graphical layout of an app or a website. The production processes will include customizing the website or app in a way that fits the customers’ requirements.

### Content Questions (group two)

Provide a suitable answer for the following questions.

What are programming controls and design structures?

Structured programming is a programming paradigm aimed at improving the clarity, quality, and

development time of a computer program by making extensive use of the structured control flow

constructs of selection (if/then/else) and repetition (while and for), block structures, and

subroutines. Control Structures are just a way to specify flow of control in programs. Any algorithm or program can be clearer and more understood if they use self-contained modules called as logic or control structures. It basically analyses and chooses in which direction a program flows based on certain parameters or conditions. There are three basic types of logic, or flow of control, known as:

1. Sequence logic, or sequential flow

2. Selection logic, or conditional flow

3. Iteration logic, or repetitive flow

What are website testing procedures?

Website testing is the process of testing websites and other software applications for unwanted defects and issues across a broad range of devices. It includes functionality, usability, accessibility, and performance testing.

What are website debugging methods?

Website debugging methods are ways you can detect errors and bugs in your website. After you find them you can fix the errors and remove the bugs so that your website runs smoothly.

What are website coding techniques?

Website coding techniques are ways you can efficiently build your website. It helps the user and others navigate through their code when they come back to it. Some website coding techniques include always closing the HTML tag when you create them so that it won’t be a problem in the future.

### Content Definitions (group three)

Provide a definition for the following programming concepts.

Authentication and web security.

The process of verifying the identity of a user, process, or device, often as a prerequisite to allowing access to resources in an information system.

Hypertext transfer protocol (HTTP).

Hypertext transfer protocol (HTTP) is the set of rules for transferring files -- such as text, images, sound, video, and other multimedia files -- over the web. As soon as a user opens their web browser, they are indirectly using HTTP.

Session management.

Session management refers to the process of securely handling multiple requests to a web-based application or service from a single user or entity. Websites and browsers use HTTP to communicate, and a session is a series of HTTP requests and transactions initiated by the same user.

Stateless programming.

Stateless programming is a paradigm in which the operations (functions, methods, procedures, whatever you call them) you implement are not sensitive to the state of the computation. That means all the data used in an operation are passed as inputs to the operation, and all the data used by whatever operations invoked that operation are passed back as outputs.

### Content Definitions (group four)

Provide a definition for the following types of technologies.

The three major programming control structures.

The three major programming control structures are known as:

1. Sequence logic, or sequential flow

2. Selection logic, or conditional flow

3. Iteration logic, or repetitive flow

Hypertext markup language (HTML) and markup languages.

HTML (Hyper Text Markup Language) is the most basic building block of the Web. It defines the meaning and structure of web content. Other technologies besides HTML are generally used to describe a web page's appearance/presentation (CSS) or functionality/behavior (JavaScript).

Cascading style sheets (CSS).

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML.

Syntax and uses of programming languages.

Syntax refers to the rules that define the structure of a language. Syntax in computer programming means the rules that control the structure of the symbols, punctuation, and words of a programming language. Without syntax, the meaning or semantics of a language is nearly impossible to understand.

## Question 3 Version Control

CITE would like you to use GitHub as the primary source control, setup an appropriate structure in your GitHub account to manage the Assessment One website development. Add a project to your repository which reflects the basic Agile development process you intend to pursue. Complete the following GitHub Version Control template to answer this question.

|  |  |  |  |
| --- | --- | --- | --- |
| GitHub Version Control | | | |
| Repository Name: | Multi-Page-Web | | |
| URL | https://github.com/PooravSharma/Multi-Page-Web | Date | 13/09/2022 |
| Screen Shot(s) |  | | |

## Question 4 Design Approval

Once you have complete questions 1,2 & 3 arrange for your document to be reviewed by the Lecturer/Assessor for approval, sign off and feedback before completing the development and testing.

* Question 1 Design Specification
* Question 2 Web Page Content
* Question 3 Version Control

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Design Approval (Lecturer/Assessor use only) | | | | |
| Approver Name | Title | Signature | Date | Approved? |
| Stewart Godwin | Lecturer |  | 13/09/2022 | Approved |
|  |  |  |  |  |
| Lecturer Feedback | | | | |
|  | | | | |

## Question 5 Website Development

Develop the software components to create a website based on your prototype and design specifications. Add the content from Question 2 and enhance the fonts and background colours to satisfy contemporary web page standards. Upload your code to the Turnkey Server. Update your GitHub with the completed website code and associated files. Your code must adhere to the CITEMS software development standards. (refer http://www.citems.com.au/)

## Question 6 Testing

Ensure your code is error free and functions correctly, then test the website on several different browsers. During these tests check the web pages scale correctly and conforms to responsive web design. Secondly, test the website on several different digital devices and record any errors. Your Test Report must include appropriate evidence that your code functions as expected (references to screen captures). Complete the following Test Report template below to answer this question.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test Report | | | | | |
| Developer Name | Poorav Sharma | | **Date** | 13/09/2022 | |
| Browser compatibility test | | | | | |
| Browser name | Description | Evidence | | | Pass / Fail |
| Microsoft Edge | This is a default browser you are provided with when you install windows in your computer. |  | | | Pass |
| Chrome | This is the most popular browser used by the masses. |  | | | Pass |
| Device compatibility test | | | | | |
| Device Name | Description | Evidence | | | Pass / Fail |
| Computer Dell | Computer device present in class for student to use. |  | | | Pass |
| Phone: iPhone XR | Wildly used phone device in the western world. It is most popular among gen z and millennials. |  | | | Pass |

## Question 7 Demonstration, Feedback and Signoff

Ensure your code is fully commented with your Name, ID, and Date placed above the main code body of each file. Check all the above documentation has been completed and is ready for inspection. Contact your Lecturer (Assessor) and arrange to demonstrate your working website, use the following Marking Guide and Observation Checklist to ensure you have completed all the assessment criteria.

### Assessor Marking Guide

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marking Guide and Observation Checklist | | Satisfactory | | Feedback |
| **Questions** | | YES NO | |  |
| Q1 | Design Specifications: All fields of the Design Specification are filled in. |  |  |  |
|  | Client Requirements contain information that is correct. |  |  |  |
|  | Prototype Specifications show a detailed diagram of the GUI with explanation notes. |  |  |  |
| Q2 | Web Page Content: All the questions and definitions have been grouped and formatted onto separate pages. |  |  |  |
|  | Questions are formatted for easy access. Code uses Bootstrap 5 framework. |  |  |  |
|  | Definitions are formatted for easy access. Code uses Bootstrap 5 framework. |  |  |  |
| Q3 | Version Control: All fields of the template are filled in. There are screen shots of GitHub showing the Project and Repository. |  |  |  |
|  | Observation of GitHub reflects an Agile project methodology. |  |  |  |
|  | Observation of GitHub reflects a repository with website files. |  |  |  |
| Q4 | Website Development: All the website files have suitable comments which reflect CITE standards. |  |  |  |
|  | Observation of GitHub shows a final version of the website files. |  |  |  |
|  | Website has satisfied all the client requirements. |  |  |  |
| Q5 | Testing: All the fields in the Testing Report have been filled in. |  |  |  |
|  | Website have been tested on three different browsers. |  |  |  |
|  | Website have been tested on three different digital devices. |  |  |  |
| Q6 | Demonstration: The website functions as required, and all web components work correctly. |  |  |  |
| **General Feedback:** | | | | |
|  | **Assessment Decision**  Satisfactory  Not Yet Satisfactory | | | |

**Note:** All documentation must use the supplied templates/forms.

**Submit the zipped solution folder with relevant documents to Blackboard**

End of Assessment Task One