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| Student Name | |  | Student Number |  | |
| Unit Code/s & Name/s | | ICTPRG535 Build advanced user interfaces  ICTPRG556 Implement and use a model view controller framework | | | |
| Cluster Name  *If applicable* | | Web Interface Cluster | | | |
| Assessment Type | | Case Study  Assignment  Project  Other *(specify)* | | | |
| Assessment Name | | UI Design and Develop Research Questions | Assessment Task No. | | 1 of 2 |
| Assessment Due Date | |  | Date Submitted | / / | |
| Assessor Name | |  | | | |
| **Student Declaration:** I declare that this assessment is my own work. Any ideas and comments made by other people have been acknowledged as references. I understand that if this statement is found to be false, it will be regarded as misconduct and will be subject to disciplinary action as outlined in the TAFE Queensland Student Rules. I understand that by emailing or submitting this assessment electronically, I agree to this Declaration in lieu of a written signature. | | | | | |
| Student Signature |  | | Date | / / | |
| **PRIVACY DISCLAIMER:** TAFE Queensland is collecting your personal information for assessment purposes. The information will only be accessed by authorised employees of TAFE Queensland. Some of this information may be given to the Australian Skills Quality Authority (ASQA) or its successor and/or TAFE Queensland for audit and/or reporting purposes. Your information will not be given to any other person or agency unless you have given us written permission or we are required by law. | | | | | |

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| Instructions to Student | **General Instructions:**  You are required to answer 18 questions using your own research skills to provide the answers along with examples that illustrate your answers. You are also required to include a list of references at the end which includes all the sources you accessed. Ensure you use an appropriate reference style. There are websites available which generate them for you. One of these is [MyBib - Free Harvard Referencing Generator](https://www.mybib.com/tools/harvard-referencing-generator)  **Acceptable Answers:**  The answers provided to the questions in this assessment must be of a level of academic quality, using correct sentence structure, punctuation and spelling. While no minimum length is stated for each question, it is required that you provide answers that clearly demonstrate your knowledge, supported by an appropriate example or diagram.  An example unacceptable answer to a question:  Q: Describe the process of submitting assessment to Connect:  A: you click upload and select your file.  **Information / Materials Provided:**  A computer with internet access provided in classroom  Word processing software on classroom computers  **Work, Health and Safety:**  The environment should be assessed for safety prior to class. Special considering should be taken regarding potential ICT related hazards such as tripping hazards, electromagnetic radiation, ergonomics and posture.  TAFE Queensland health and safety policies and procedures should be followed at all times.  **Details of Location:**  TAFE will provide simulated work environment in the classroom all practical activities should be completed in the classroom with teacher/tutor assistance; however, it is possible to complete these tasks on a home computer with internet access, web browser and office suits or similar.  **Time Restrictions:**  Students can start completing this assessment from week 2, however students have until week 7 to complete and submit the assessment.  **Level of Assistance Permitted:**  Teachers and tutors should be available in class, and accessible by email for students working from home. Staff cannot directly provide students answers but can guide them to where to go to complete tasks individually.  If you are unable to submit an assessment you must notify your teacher before the assessment due date and supply a doctor’s certificate and an extension approval from the team manager.  Reasonable adjustments will be made for students as and when appropriate, after consultation with the Accessibility and Counselling team. You must see your teacher prior to assessment regarding this.  RPL (Recognition of Prior Learning) is available for this unit. Speak to your teacher/assessor to check if you qualify for RPL.  **Assessment Criteria:**  To achieve a satisfactory result, your assessor will be looking for your ability to demonstrate the following key skills/tasks/knowledge to an acceptable industry standard:   1. Object-Oriented programming 2. Client-Side programming 3. HTTP protocol 4. Debugging and testing tools relative to MVC applications 5. Principles of the MVC design pattern 6. HTTP request + response concepts 7. HTTP methods, routing and query parameters 8. Convention vs configuration in application development 9. HTML templates and dynamic rendering 10. Data models and view models 11. Web Design languages: 12. Hypertext Markup Language 13. Cascading Style Sheets 14. JavaScript 15. User Interface prototyping techniques. |

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|  | **Number of Attempts:**  You will receive up to two (2) attempts at this assessment task. Should your 1st attempt be unsatisfactory (U), your teacher will provide feedback and discuss the relevant sections / questions with you and will arrange a due date for the submission of your 2nd attempt. If your 2nd submission is unsatisfactory (U), or you fail to submit a 2nd attempt, you will receive an overall unsatisfactory result for this assessment task. Only one re-assessment attempt may be granted for each assessment task.  ***For more information, refer to the Student Rules.*** |
| Submission details | Insert your details on page 1 and sign the Student Declaration. Include this template with your submission.  **Due Date:** Week 15  You are required to answer the questions in this document in the space provided under each question and save the document as:  ClusterName\_StudentNameorNumber\_AssessmentNumber.  For example:  WebInterface\_123456789\_AT1  Or  WebInterface\_SteveSmith\_AT1  For re-submissions, an “R” must be added to the file name. For example:  WebInterface\_SteveSmith\_AT1\_R  Assessment to be submitted to the appropriate assessment folder in **Connect.**  TAFE Queensland Learning Management System: Connect url: [*https://connect.tafeqld.edu.au/d2l/login*](https://connect.tafeqld.edu.au/d2l/login)   * Username; 9 digit student number * For Password: Reset password go to [*https://passwordreset.tafeqld.edu.au/default.aspx*](https://passwordreset.tafeqld.edu.au/default.aspx) |
| Instructions for the Assessor | To be judged competent in this assessment item the student is required to demonstrate competence in all indicators shown in the marking guide.  Depending on the delivery mode and/or timetable constraints, the Study Guide and the Study Schedule must be customised to suit the mode.  **Specifications of Assessment:**  There are 18 main questions that must all be answered correctly to achieve a satisfactory result for this assessment. Students will be able to resubmit their work a second time if they are not successful on the first attempt.  **Equipment pr Material Requirements:**   * A computer with internet access * Word processing software   **Details of Location:**  TAFE will provide a simulated work environment in the classroom; however, it is possible to complete these tasks on a home virtual network using a computer with internet access.  **Level of Assistance Permitted:**  Teachers and tutors should be available in class, and accessible by email for students working from home. Staff cannot directly provide students answers but can guide them to where to go to complete tasks individually.  **Interactions:**  Teamwork skills are essential in the IT industry; therefore, students should work in teams to consult and collaborate on the practical activities. However, each student is required to complete the tasks individually.  **Contingencies:**  Reasonable adjustments will be made for students as and when appropriate, after consultation with the Accessibility and Counselling team. – You must see your teacher prior to assessment regarding this.  **Work Health and Safety:** A work health and safety check of the assessment environment is to be conducted prior to the assessment and any hazards addressed appropriately. |
| Note to Student | An overview of all Assessment Tasks relevant to this unit is located in the Unit Study Guide. |

1. Provide a Diagram that demonstrates the communication that occurs when a browser requests the webpage: [www.google.com](http://www.google.com) include a description of the technologies used to allow the HTTP request and response to occur.

1. Match the following HTTP Response Codes to the correct description

***Status Code:*** *405, 500, 200, 400, 201, 415*

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| HTTP Status Code | Description of Status Code |
|  | Internal Server Error |
|  | Bad Request |
|  | Method Not Allowed |
|  | Okay |
|  | Created |
|  | Unsupported Media Type |

1. Describe three different components of a HTTP Request

1. Consider the following webrequest:

<https://www.webaddress.com?firstname=william&lastname=shakespeare>

Identify any provided parameters, including the keys and values and describe this style of providing parameters, including how they may be interpreted by the server.

1. Consider the following Class and method definitions:

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|  | public class Note  {  public int NoteID { get; set; }  public string NoteText { get; set ; }  }  public ActionResult CreateNote(Note note)  {  Console.WriteLine(note.NoteID);  Console.WriteLine(note.NoteText);  } |

a) If a client was attempting to use the method ‘CreateNote’ defined above, how could they pass the data required for the ‘note’ object, and what is the name of the concept that assists in mapping the input parameters to the Model.

b) Describe appropriate response codes to send as a response from a method that is creating a new object, including codes that could be used for both success and failure.

1. Describe the concept of routing, in the context of handling a HTTP request to a method in an MVC application and returning HTML content.

1. Describe the purpose of using Models to represent the structure of data in relation to representing data in a view, and receiving data from a view when using HTML template engines

1. Define the paradigm of ‘Convention over configuration’ and provide an example of where this is beneficial in an MVC application

1. Describe at least 2 Debugging tools that can help in the development of an MVC application, including the primary function and features provided

1. Describe at least 2 Testing tools and methods that can help in the development of an MVC application, including the primary function and features provided

1. Create a diagram that clearly demonstrates the architecture of the MVC Design Pattern, describing the connections between the various parts
2. Describe the aspects of the MVC design pattern that assist in creating an application that is Scalable, Maintainable, and Reusable:

1. Describe Client-Side programming including an example language, providing at least one situation where it may be the preferred choice over Server-Side programming.

1. Describe the purpose of each of the following languages in the context of designing a User Interface for a web application including an example in each language:

a) Hyper Text Markup Language

b) Cascading Style Sheets

c) JavaScript

1. Describe the difference between the following User Interface concepts: Wireframe, Mock-up, Prototype. Include in your answer a description of the importance of each concept.

1. List and Describe at least 2 Object Oriented Programming languages, including the features of OOP languages that assist in developing User Interface applications.