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| **Course** | **TNABT Software Engineering** |
| **Unit Code** | **ICTPRG435** |
| **Unit Title** | **Write scripts for software appliations** |
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| **Assessment Task Title** | **Assessment 2 – Skill Tasks** |
| **Assessment Type** | **Practical** |

## Instructions:

The assessment provides the opportunity for you to demonstrate the following skills and knowledge to your assessor:

* Identify software requirements
* Design algorithms
* Design, write and implement scripts
* Test and debug scripts
* Create internal documentation
* Use development environment

This assessment is to be completed in your own time. Time may also be made available for completing the assessment during class sessions.

You are required to enter your responses in the spaces provided in this assessment sheet.

To achieve a ‘satisfactory’ result for this assessment you must complete all tasks and be deemed competent in all tasks by your assessor.

In the event that you receive an unsatisfactory result, you will be required to review feedback from your assessor and then resubmit the assessment after making required corrections. You will have one opportunity for resubmission.

If your second assessment attempt is ‘not yet satisfactory’ you must contact your teacher or assessor to discuss how to proceed.

## Documents to Submit:

Use this document to provide your responses to all tasks. Ensure that you enter your Student ID and Full Name in the space provided overleaf. This document must be uploaded by the due date to the drop box for ICTPRG435 Assessment 2 on VU Collaborate.

* Completed this assessment document - Assessment 2 – Skills tasks
* Panopto video of debug process
* Zipped up local GitHub repository containing .HTML .CSS .JS files (.zip)

## Assessment Task:

All responses must be your own work.

**Assessment scenario – Abstract Art Competition**

* You are to create a one-page website that allows a user to draw a piece of abstract art and to submit the art for evaluation as part of an online competition.
* You will use the HTML canvas element to enable the functionality required to create the abstract art. There are some minimum functionality requirements but you also have a large amount of creative reign to structure things the way you want.
* When the art is completed a user will be able to save the art as an image file and upload it along with some general user data, using an online submission form.

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| **Script Requirements**  Your script will include the following: | |
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| User must be able to select the following canvas shapes at a minimum, lines, circles, rectangles |  |
| User must be able to specify the size, position, outline color (minimum 8 colors), fill color (minimum 8 colors) for all selected shapes |  |
| Differing shapes, range of colors, shadows, gradients, stroke pattern, rotations, scaling, animations, drawing with the mouse or any other Canvas related property or method are allowed but not mandatory |  |
| There must be functionality to clear the canvas and start fresh |  |
| Selection, modification and application of art content can be via any method/s such as, but not limited to, buttons, drop-down menus, radio buttons, sliders, color palette, drag n drop and, other mouse actions. |  |
| Canvas will be 400px X 400px in size with a black border white background. It will be positioned appropriately relative to drawing controls |  |
| User must be able to save the artwork as a .jpg file |  |
| The page is to include a registration form that includes username, email address, password (minimum 8 characters), confirm password, phone number, submit form button, reset form button and, attach image button. Form should be uploaded for processing to process.php |  |
| Form content must be validated such that data is not uploaded if any field is filled out with an incorrect format or left blank. The user will be notified of successful form submission via an 'alert' message or text embedded on the HTML page. |  |
| The final look of the page will be formatted by other staff but your page must:   * contain a heading: Abstract Art Competition * Provide very brief instructions on how to use the page including the submission form. * Have a neat presentation   Optionally, you might like to use a template for the layout <https://www.w3schools.com/css/css_templates.asp> |  |
| The heading and instructions will be available in two different langages selectable via buttons. The heading will have different colors depending on the languagechossen *(Languages differences for text on buttons, forms, radio buttons etc is optional)* |  |
| Handle any input from the user and carry out actions, without errors |  |
| Include embedded explanatory comments (#) in JavaScript to clarify the meaning of the code where needed |  |
| Sequence, selection and iteration must be demonstrated within the script |  |
| No JavaScript modules, libraries or frameworks are to be used |  |

## **Student Name: sama priyangani jayarathne siriwardhanage Student ID Number:**

## Task 1.1 Identify and discuss script requirements

Discuss the script requirements above with your instructor who is acting as your work supervisor. This is your opportunity to ask any questions to ensure you fully understand the requirements. Provide brief notes or dot points of the discussion that show your attempts to clarify and understanding the script requirements. *Note that your instructor may work with you individually, in small groups or as one large group for this task*

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| *Enter brief notes or dot points of the discussion*   * *About the appearance of the web page such as colour combinations and structure.* * *About the way of saving jpg file* |

## Task 1.2 Identify and discuss script outcomes

Discuss the following software outcomes with your instructor who is acting as your supervisor. Complete the table rows by answering the questions.

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| **Script outcome discussion** |
| **Why would a user want to use the script?** |
| To draw a piece of abstract art and to submit the art for evaluation as part of an online competition |
| **What are the features and functions of the script? *What is it that the script does overall, what are its individual functions, how will a user navigate the script, what are the inputs, what are the outputs, are there any special features?*** |
| main purpose :   * create a web page to draw abstract art and submit it as a part of an online competition.   Individual function:   * Ability to create canvas shapes such as lines, circles and rectangles. * Ability to specify the size, position, outline color (minimum 8 colors), fill color (minimum 8 colors) for all selected shapes * functionality to clear the canvas and start fresh * ability to select, modify and application of art content * function to save artwork as a .jpg file * submit a form with the artwork * validating form contents * two different languages for heading and instructions * input validations   inputs:   * colour selection * size selection * shape secection   outputs:   * draw shapes according to user preferences |
| **Appearance  *How will the user interface look? How will any outputs from the script look? Provide a picture of the user interface using*** [***https://app.diagrams.net/***](https://app.diagrams.net/) |
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| **When is the script due for completion?** |
| 6th of April |
| **What questions do you have about the script or the development process*?*** |
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## Task 1.3 Algorithm Design

Produce a design of your intended JavaScript only using pseudo-code with explanatory comments. Use the script requirements to guide the design of your algorithm/s

Contact your instructor for constructive and corrective feedback when complete. Review the algorithm design based on the feedback and, provide brief notes or bullet points of the changes.

*Note that your instructor may choose to provide feedback individually, in small groups or as a large group.*

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| *Enter your pseudo code:*  *Enter brief notes or bullet points of any changes made after supervisor review: remove functions in forms (submit, attach)* |
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## Task 1.4 Coding and internal documentation

Translate your pseudo code into a functional script using HTML, CSS and JavaScript adhering to the provided script requirements and outcomes as a guide.

* Include at the top of the javaScript the authors name, the date created, and an overview of the codes functionality.
* Provide explanatory comments within the script where required
* Structure code using the MDN Web Docs JavaScript guidelines   
  <https://developer.mozilla.org/en-US/docs/MDN/Guidelines/Code_guidelines/JavaScript>

Record the development of your script using the GitHub development platform. Push and pull changes frequently to keep the contents of the local and remote repositories synchronised. Add your instructor as a collaborator to your repository. You instructor, acting as your supervisor, will check the repository and make comments during code development. You are to review your code based on those comments and when making further commits, state the words “acted on review” in the summary field of Desktop GitHub.

## Task 1.5 Debugging

* Use the source debugger within a web browser to debug your script
* Provide a short Panopto video with commentary that shows the debugger in action, including a variables contents changing, stopping at a breakpoint, stepping over a function, stepping into a function and, identification of the cause of a logic error. *Be brief by not including any more content than is required for the task*

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| Upload the Panopto video to the assessment dropbox for this unit. Also, enter the hyperlink to the Panopto video here and ensure that your instructor has read access to the video |

* Provide a list of three semantic/logic errors you have encountered and how you rectified them.   
  *Note that syntax errors are not acceptable. The errors must be caused through incorrect logic*

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| **Error** | **Rectification** |
| *Image download button is not working.* | *Incorrectly declared variable.* |
| *Heading colour is not change with the language* | *Incorrect heading Id.* |
| *Password and confirm password matching function is not working* | *Incorrect field Id.* |

**Task 1.6 Testing and testing documentation**

Develop test cases to confirm the code meets the script requirements and outcomes as well as testing for error conditions. List ALL the test cases that need to be run.

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| **Brief Description:  *(what is being tested)*** | **Brief Description:  *(what is being tested)*** | **Brief Description:  *(what is being tested)*** |  |
| Selecting Circle from the drop-down list | Ability to input X, Y and radius values of Circle | Selecting fill colour for shape circle | Selecting outline colour for shape circle |
| Selecting rectangle from the drop-down list | Ability to input X, Y, Height, width values of rectangle | Selecting fill colour for shape Rectangle | Selecting outline colour for shape rectangle |
| Selecting line from the drop-down list | Ability to input starting points values and ending point values of line. | Selecting colour for shape line | Outline colour pallet has 8 colours |
| User name validation | Save image file | Canvas size 400px X400px | Fill colour pallet has 8 colours |
| Email validation | Ability to upload image file to the form | Canvas background colour white | Selecting gradients for shape ‘rectangle’ |
| Password validation | Ability to submit form | Canvas border colour black | Deleting content of the canvas after clicking ‘clear’ button |
| Confirm password validation | Ability to reset form | Password should have 8 characters | Drawing a circle after clicking ‘draw’ button |
| Check for password mismatch | Change language to Spanish after clicking ‘Spanish’ button | ‘Choose file’ validation | Drawing a rectangle after clicking ‘draw’ button |
| Mobile no validation | Change language to English after clicking ‘English’ button |  | Drawing a line after clicking ‘draw’ button |

Record two of your test cases below as well as any subsequent code modification that occurred if any.

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| **EXAMPLE**  **Title: Data appended to the file is encrypted**  **Preconditions: database exists, menu option has been chosen** | | |
| **Steps** | **Expected response or output** | **Actual response or output** |
| Add username: user1  Add password: pass1  Add related resource: URL1 | Information message: "Your data has been saved" | Information message: "Your data has been saved" |
| Open database with text editor | Database file contents should be encrypted as follows  xvhu4 sdvv4 xuo4 | xvhu4 sdvv4 xuo4 |
| **Details of code modification** | None required | |

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| **Title: draw circle**  **Preconditions: shape is selected, fill colour is selected, outline colour is selected, centre values (X,Y) are entered, radius is selected** | | |
| **Steps** | **Expected response or output** | **Actual response or output** |
| Press ‘ Draw’ button | Draw a circle accordingly with selected values | Draw the circle accordingly with the selected values |
| **Code modification** | N/A | |

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| **Title: draw line**  **Preconditions: shape is selected, colour is selected, values are entered** | | |
| **Steps** | **Expected response or output** | **Actual response or output** |
| Press ’Draw’ button | Draw a line | draw the line without choose colour. |
| **Code modification** | Added strokeStyle() to the function. | |

**Task 1.7 Confirm completion**

* Contact your instructor, who is acting as your supervisor, when your script is complete to confirm that script requirements and outcomes have been met. Document this discussion via bullet points or brief notes, make adjustments to the code if required and make a GitHub commit stating the words “Sign-off from supervisor” in the summary field of Desktop GitHub.

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| *Enter notes of*   * The discussion with your supervisor confirming that the script requirements and outcomes have been met. |

Ensure you have pulled all commits from your remote GitHub repository and compress your local GitHub repository in .zip format and, submit as part of your assessment along with this assessment document and the Panopto video.