**Anidhu\_S**

Web Application Development

Higher International Diploma in Computing and Software Engineering



**Assignment Cover and Assessment Outcome Sheet**

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| **Title of Qualification / Customised Course:** Click or tap here to enter text. | | |
| **Learner Name:** Anidhu Suriyaarachchi | | |
| **Assignment Title:** Web Application Development | | **Assignment Reference:** |
| **Assignment Tasks:** | | |
| **Date issued to learner:** DD/MM/YYYY | **Hand-in Deadline:** DD/MM/YYYY | |
| **Actual date submitted:** DD/MM/YYYY |  | |
| **Name of Assessor(s):** | | |

**Note to Learners**

***Please ensure that you:* 1)** Provide your full name in the box given above; and **2)** sign off the Learner Statement provided at the end of this cover sheet

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| **Task** | **Unit(s) covered by Task** | | **Learning Outcomes Covered** by *completing this unit, the learner will be able to:* | **Assessor Decision**  ***Has the Learner met the Learning Outcome to standard stated by the Assessment Criteria? (Y/N)*** |
| **1** | | [Unit(s) covered] |  |  |
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***[Repeat rows and columns as necessary for each additional Task/Learning Outcome]***

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| **Assessor’s Feedback/ comments:** | |
| **Assessment Decision (e.g. Pass, further work required, and additional comments):** | |
|  | |
| **Assessor Declaration**  *I confirm that the work submitted for this assignment was checked against valid Turnitin anti-plagiarism software, and the receipt for this check is attached. I further confirm that I have no personal stake in the assessment outcome and that no conflict of interest influenced assessment decision(s).* | |
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| **Learner Statement**  *Before submitting your assignment for marking and scrutiny, please read Statement A and Statement B (below). Tick ONE box next to the corresponding statement as appropriate before signing and dating this form*. | |
| **Statement A** | **My submitted assignment is my own work.** |
| **Statement B** | **My submitted assignment is my own work, but with some help as outlined on the reverse of this sheet.** |
| **Learner’s Signature** | **Anidhu** |
| **Date (DD/MM/YYYY)** |  |
| **Optional:**  *I hereby give my permission for my work to be used by the centre for future training and/or exemplar purposes*. | |

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| Was this assessment decision Internally Verified (Y/N): |  |
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*Note: Centres are required to keep detailed Internal Verification records*

Contents

**No table of contents entries found.**

**Abbreviations**

SRS – Software Requirements and specifications

SAD – System Analysis and Design

SDLC – System Development Life Cycle

**Preface**

# **Task 1: Requirement gathering and analysis and of Mermaid Aquariums**

When developing an any kind of system various system development models such as SAD incorporates methodologies such as SDLC which have different types of stages to go through until the final product is developed and launched. Usually the first stage is requirement gathering and analysis which is used for planning of the system. Prior anything’s done a requirement analysis is performed on the system. In a requirement analysis the requirements that should be fulfilled when developing the system are identified and usually these requirements are given by stakeholders. These requirements can be based on how the system should work, what purposes should it serve etc. In a requirement analysis all these requirements are divided based on whether they’re functional or non- functional. Functional requirements are requirements which are essential for the system and system would be obsolete without them while non-functional means that they are not essential but can add colour to the system.

Therefor requirement gathering and analysis should be performed when developing the website for the “Mermaid Aquariums” as well. There are various methods that can be used for requirement gathering.

Prior knowing the Requirement gathering methods it is important to know about what open and close ended questions are.

* Open ended questions – Open ended questions are used to gather more detailed answers through questions by respondents, hence they are subjective. Open ended questions can be used to gather in depth information, explanations, feelings and insights from the respondent.
* Close ended questions – Close ended questions are quite the opposite of open ended questions as they often expect a specific limited answer in return, so data is quantifiable data and hence objective. Examples for answers expected by a close ended question can be “yes”, “no” or selection from one of the choices.

**Questioners and Interviews**

And questioner and interview model are a key factor too. Main model types in questioner and interviews are

* Pyramid model – In a pyramid model either in a questionnaire or interview questions start out as close ended questions and ends as open ended questions. This method can be used if you feel like the interviewee or respondent should have some warmup to the topic.
* Funnel model – In a funnel model either in a questionnaire or interview questions start out as open ended questions and ends off as close ended. This method can be used if you want to start an interview in a non-threatening way and familiarize the interviewee with the environment, and this also is a good method if you want to have interviewees feelings expressed about certain questions or topics.
* Diamond model – This model combines both pyramid and funnel and sometimes regarded as the best model because the way it approaches the questions. It starts out with open ended questions and provide good warmup for the interviewee or respondent, then tightens question with close ended expecting specific answers and the broadens questions to much generalized open ended to conclude the questions.

**Questionnaires:**

Purpose: To gather structured data from employees and customers about the current system, hence a good understanding can be taken about the current system and accordingly the intended website can be developed.

Relevancy: Questionnaires provide efficient results unlike interviews, so the process is less time consuming and cost efficient as well.

Questionnaire model: Either of 3 models can be used effectively based on circumstances of the aquarium.

**Interviews:**

Purpose: To gather data which are not necessarily structured but can be used as valuable information after some processing.

Relevancy: Head to head interviews can lead to much accurate data compared to questionnaires and detailed in depth answers can be obtained through open ended questions.

Interview model: Either of 3 models can be used effectively based on circumstances of the video store.

Let’s say we have used the diamond model for the questionnaire as it is regarded better compared to other 2 in an overall aspect. If so it would look like the following

Simple closed ended questions as a warmup to the questionnaire

* What is your name?(optional- For privacy concerns and genuine responses)
* In what age range are you?
* How are you associated with the Mermaid Aquariums?
* How long have you been associated with the Mermaid Aquariums?

Open ended question for to know respondents broader opinions and etc…

* What are your opinions about varieties of fish food available in the Mermaid Aquariums?
* Your feedbacks on the home aquariums sold in Mermaid Aquariums.
* Are you satisfied with the information about aquarium that are currently provided for customers, and how can information provided for customers about Mermaid Aquariums can be improved?
* What changes should be done according to you in the Mermaid Aquariums, other than the ones that are mentioned above?

Close ended questions to conclude the questionnaire

* On a scale of 1 to 5, what would you rate our aquarium’s service?
* Do you believe that a new website will contribute to aquarium’s overall betterment?
* would you join training camps based on how to operate the new website of Mermaid Aquariums in the future?
* On a scale of 1 to 5, what do you think about launching a new website for Mermaid Aquariums?

Next, let’s see some sample interview questions which can be used in data gathering. (Not based on a model)

* What do you think about the current customer awareness about Mermaid Aquariums?
* How do you identify the needs of customers of Mermaid Aquariums?
* Can you suggest ways to have more customer feedbacks about Mermaid Aquariums?
* Can you suggest ways to attract customers through the newly being implemented website?
* Can you suggest what can be included in the home page of newly being launched website of the aquarium that also attract new customers and differentiate Mermaid Aquariums from rest of the aquariums.

**Observation**

Observation is a good method used for requirement gathering. In case of Mermaid Aquariums, it can be used to study behaviours of customers in other competitor aquariums and customer interactions with these aquarium websites.

**Physical stores:**

Observing customers as they browse through the aquarium making purchasing decisions and how they interact with the aquarium staff etc. By doing this things like what kind of products attract more customers, common question asked by customers and pain points while shoping can be identified.

**Websites:**

Observing the customer interactions with other aquarium web sites such as how customers usually navigate through the website, what are Frequently Asked Questions (FAQ) on site, what products customers search for mostly etc.

**Case Study of Pala Aquariums**

It is also really important to analyse similar aquarium websites thoroughly when doing the requirement gathering and analysis taking a step forward from observation used for requirements gathering.

Following points show what we have analysed in Pala Aquariums website

**Website Features:**

* Pala aquarium offers a wide range of home aquarium accessories, fish food and provide variety of services such as home aquarium maintenance, fish food delivery etc. and all of them are displayed categorized into separate web pages in the website such as Home, Fish food, Accessories etc.
* They upload blog posts and trending videos in aquarium world as well in a separate page on their website named “Trending Today”.
* They provide customers the facility of shopping based on categories such as “Premium Fish Food Package”,” Eco Fish Food Package” etc.
* They have separate comment section which acts as a forum for the customers to interact with each other by making user accounts.
* They have a FAQ or Frequently Asked Questions page which displays frequently asked questions by customers and the relevant answer to them.
* They have a contact us page which the customers can contact the aquarium through the site itself.
* And it should also be noted that their products have very detailed product descriptions.

**Website Design:**

* The website design enables user to navigate through the website easily using hyper links for each page in the top of page. For an example a user who is currently in the home page can go to FAQ in a single click by clicking the FAQ link.
* In the footer section of the website all social media and other details are displayed, and social media icons are there which are also made as hyper links that direct customer to social media of Pala Aquariums.

**Strengths**:

* Sections like “Trending Today” attract both aquarium enthusiasts and novices towards the business
* Separate comment section helps keeping customers engaged with the business.
* Sections like Contact us and FAQ can help customers to have awareness about products of the business and the business as whole.

**Weaknesses:**

* For some users the website may be over whelming due to it having so many web pages to navigate through.
* The website doesn’t provide any shipping options locally or internationally.
* Website doesn’t show if a certain product is out of stock.

After doing all of this an SRS document is made

**SRS Document**

**Introduction:**

Mermaid Aquariums is a newly built aquarium company that is planning to increase its publicity by launching a new website. The target audiences are aquarium enthusiasts, hobbyists, and professionals. For the target audience it is intended to have the access to information about wide range of products and services available in Mermaid Aquariums. Through this website both local and global growth in the aquarium is expected.

**User Requirements:**

* Target users – There are 3 types of target users whom the website is catered for.
* Hobbyist – Hobbyists are people who do have home aquariums and does this as a hobby.
* Enthusiasts – Enthusiasts are people who always try to catch up with the latest trends and they are usually well aware about the aquarium trade.
* Professionals – Professional are people who work in the aquarium trade and depend upon it. Professionals can be fish pet shop owners, Fish tank manufacturers etc.
* Needs and expectations – Following are some user needs and expectation concerning the website
* Users expect a friendly website interface and crisp navigation through website without a hassle.
* Responsive customer support is usually expected, so they feel that they are assisted always.
* Hobbyist and enthusiasts may find detailed descriptions useful.
* Users may find website displaying availability status of goods very useful, hence displaying whether the product is in stock or out of stock can be crucial.

**Functional Requirements:**

These are usually basic facilities that users expect a website to have, so these functionalities should be necessarily incorporated in the Mermaid Aquarius website.

* Product catalog – The website should feature different product and services organized into different categories. For an example fish food can be categorized as flakes, pellets, freeze-dried and live fish food.
* Product details – Products should have related images, descriptions, prices, dimensions, availability status etc.
* Ways to communicate with the aquarium through website – There should be different ways to communicate the aquarium through the website since with the advancement of web technologies and social medias it is considered to be a functional requirement for a website user as general, for this a separate “Contact Us” page has been put up on site and also the user can go to Mermaid Aquariums social media through hyper links in footer and communicate with the aquarium.

**Non-Functional Requirements:**

* Performance – Loading times and responsiveness across different devices such as desktops, mobile phones etc. can be enhanced so it makes user experience better and minimise bounce rates.
* Security – Robust security measures can be used to ensure thing like user data are well protected by employing things like SSL encryption, doing regular security audits etc.
* The website design can be done to accommodate future growth in traffic that may happen due to potential increase in popularity of Mermaid Aquariums.
* Accessibility – The website can ensure hassle free accessibility to the website to users with disabilities by including things like screen readers, keyboard navigation and alternative text display etc.

**Maintenance and support requirements:**

* Regular updates – Regular updates should be performed to ensure that website has fresh content that are up to trend and complies with user feedback.
* Technical support – As stated earlier technical support can be made available by communicating with the aquarium through the website and additionally things like displaying the hotline number to contact users through phone can be done.

**Legal compliance requirements:**

* Privacy policy - User data should be handled with care in compliance to data protection regulations such as GDPR and CCPA, hence a complete privacy policy should be employed.
* Terms and services – Employing a set of terms and services governing the website can be a good practice, so the rights and responsibilities of users and administrators of the website are clearly defined.

**Conclusion**

In conclusion the SRS document elaborates key features, functionalities and design components that are required to make launch a error free and efficient Mermaid Aquariums website. In every step it is ensured that user requirements and industry standards are met when developing the Mermaid Aquariums website. And the ultimate goal of the website is to provide a smooth user friendly service to all target users of the website.

# **Task 2: Designing**