KOI DISEASE MONITORING APP

A Capstone Project

Presented to the

Faculty of the College of Fisheries-Main Poblacion

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Of the Requirements of the Degree

Bachelor of Science in Information Technology

By:

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INTRODUCTION

Overview of the current state of technology

Have you heard about a fish that is often associated with strength of character, perseverance, accomplishment and courage? This fish also symbolizes good fortune, success, prosperity and ambition. Yes, it’s the Koi fish that has a scientific name “cyprinus carpio’. Their long history and hardy nature have also led to Koi being associated with longevity.

Koi fish is domesticated version of common carp. This fish is most famous by its beautiful colors that have been created via selective breeding. There are over 20 different varieties of koi fish that differ in color, patterns and type of scales. Koi fish originates from Eastern Asia. This fish lives in fresh waters. Thanks to its beauty and increased popularity in the past century, koi fish can be found in the ponds throughout the world. Since Koi fish is numerous and kept in private aquacultures, it is not on the list of endangered species. Having this on our backyard fish pond or on your fish aquarium brings us joy and most of us believes that it will give us fortune and prosperity. So, we really need to take good care of them. We should know all the ideas and knowledge on how to monitor them especially when they are sick and needs immediate help.

Today, there is no monitoring tool specifically for Koi aquaculture. This is why our team able to create this Koi disease monitoring concept. We want to give a way on how to monitor and check the status of the Koi fish and know their nature. We will also provide ideas on how to know if the koi might be experiencing some trouble or might be carrying some diseases.

Major problems that people encounter now a days in Koi aquaculture:

1. Some people don’t know the signs when Koi are sick;
2. People don’t know how to feed the Koi properly that sometimes cause them to be sick;
3. People don’t know how to give cure to the diseases that koi is experiencing;
4. Can’t check the water level, temperature and substance;
5. It’s hard to tell if the pond is over populated or not;

Setting up a pond with Koi for the benefit of our eyes and feel the happiness of having it is just so easy. But are we aware of the consequences? Could you feel if the source of your happiness might be experiencing trouble? Do you have an option to check them from time to time? Will you be with them if they need help? Koi is just same as humans; they can also experience trouble especially diseases sometimes.

**Statement of Objectives**

This study aims to design and develop an application that can be used in monitoring Koi fish and their diseases.

Specifically, this study aims to:

1. Develop a Koi disease monitoring application;
2. Provide proper way feeding the Kois;
3. Provide ideas on the major diseases that Kois experience and its cure;
4. Provide water temperature check and water quality;
5. Provide ideal number of Kois that can be handled per given area.

**Conceptual Framework**

**Input** **Process**  **Output**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| * User Information   Name  Contact No.  Location  User Name  Password |  | * Manage user information * Connect third party devices * Provide Koi diseases symptoms * Provide Koi diseases cure |  | KOIAPP |

|  |
| --- |
| **ISO 25010** |

Figure 1. Conceptual Framework

Figure 1 shows the conceptual framework of KOI DISEASE MONITORING APP. The inputs needed in order to process the information in creating an account. The user will be required to create his/her username and password. On the process, these information are being managed by the application to allow the user in checking his/her koi pond. The output is KOIAPP process is then being evaluated by ISO 25010.

**Definition of terms**

**Koi**

This are colored varieties of the Amur carp that are kept for decorative purposes in outdoor koi ponds or water gardens.

([www.oxfordlearnersdictionaries.com](http://www.oxfordlearnersdictionaries.com)/koi, 2020)

In this study, the term refers to the kind of carp fish that brings good luck to the owner.

**Aquaculture**

It is the farming of fish, crustaceans, mollusks, aquatic plants, algae, and other organisms. It involves cultivating freshwater and saltwater populations under controlled conditions, and can be contrasted with commercial fishing, which is the harvesting of wild fish.

([www.oxfordlearnersdictionaries.com](http://www.oxfordlearnersdictionaries.com)/aquaculture, 2019)

In this study, the term refers to the overall ways of Koi farming.

**Disease**

Itis a particular abnormal condition that negatively affects the structure or function of all or part of an organism, and that is not due to any immediate external injury.

([www.oxfordlearnersdictionaries.com](http://www.oxfordlearnersdictionaries.com)/disease, 2018)

In this study, the term refers to the condition that Koi experience that causes them to be sick.

**Monitoring**

It is toobserve and check the progress or quality of (something) over a period of time; keep under systematic review.

([www.oxfordlearnersdictionaries.com](http://www.oxfordlearnersdictionaries.com)/aquaculture, 2020)

In this study, the term refers to checking of the koi ponds overall status from time to time.

**Fortune**

It is achance or luck as an external, arbitrary force affecting human affairs.

([www.oxfordlearnersdictionaries.com](http://www.oxfordlearnersdictionaries.com)/aquaculture, 2019)

In this study, the term refers to the positive effect of Koi aquaculture.

**Significance of the Study**

The result of the study may benefit the following group of people and entity:

**Koi Pond Owner**. This study will be beneficial to them because they can now monitor their ponds even if they’re away.

**Pet Fish Lover**. This study will be beneficial to them because they can get additional knowledge on how to take good care of their Kois.

**BFAR**. This study will be beneficial to them because it can help them gain more information on how to manage Koi fish raising industry.

**Scope and Limitations of the Study**

The study aimed to design and develop an application that can be used by anyone who has interest in Koi raising or those who were raising Koi already. Its service includes a real-time monitoring of Koi ponds or aquarium with the use of user installed camera. By this, they can see if there’s something wrong on their Kois. User can able to see the different kinds of diseases Koi experience and it will show them the possible sign/symptoms and the best way to treat the disease. User can also check the water temperature with use of installed digital thermometer, this is optional to the user since party equipment is provided by the users and the application will be compatible to almost all the third-party device that user wants to use.

The KOI DISEASE MONITORING APP is available in the Play Store for Android users and App Store for iPhone users. Creating a user account is free. User needs to install his/her third-party devices and connect it to the app.

We will work directly with the BFAR for the proper terms and guidelines of the application. The application will be using the International Standards Organization (ISO) software engineering quality standard in terms of product quality and quality in use. The application has been evaluated by BFAR, five (5) IT experts, and five (5) Koi raisers that will be the future users of the app.

The limitation of the study includes: the application can only be used by people who are connected to the internet, but if offline BFAR contact numbers will be showing on the main page for immediate assistance or guidance.