THE SHARK GAME PROJECT

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I. Functional Specification

# 1. Introduction

### 1.1 Overview

The Shark Game Project involves the development of a game which will be embedded into a site. The game is targeted towards adults and children. The aim of the game is to crop the sharks in the displayed images and tag them which would then be stored in a database. The game is being developed to be cross platform and should be functional on many devices e.g. phones, tablets and PCs.

# 1.1.1 Home Page

The home page or the first page the player will see will be the Sign In page. The player can either register or sign in using a Facebook/Google+ account. The footer displays the text “SHARK PROJECT” which links to the About page.

# 1.1.2 Game Page

Cropping

After signing in the player should get a sign in confirmation and be be taken to the Game page. This page will display an image containing a shark. The player's aim is to draw a box around the shark only. This box functions similar to a crop box.

Tagging

After drawing the crop box around the shark, a text box should appear on the cropped image prompting the player to type a tag into it. The player would then type 1 tag only.

There should be an auto-fill functionality which should aid the player in filling when typing the tag. The auto-fill can only help fill in the 14 sharks which this project concentrates on.

Check Mark

The text box should have a check mark (✔) symbol beside it and it should light up after the tag is completed. As the player clicks on the lit up check mark, the next image should appear. This check mark should only light up if the player has typed in either of the 14 shark species.

# 1.1.3 Shark Guide Page

There is a separate page for the Shark Guide. This guide exhibits information on the 14 different sharks which the players will be tagging. Each shark will be represented by an image and a species name. Each of them will have a features section which should address Dorsal Fin, Tail, Caudal Fin, Side Fins (Pectoral Fins), Anal Fins etc. This should help the players in identifying the sharks that are displayed in the images on the Game page.

# 1.1.4 Leaderboard Page

This page which will display Usernames and Points corresponding to each of the Username.

# 1.1.5 About Page

About Page is reserved for future details.

# 1.1.6 Shark Project Header

The “SHARK PROJECT” is a temporary header which links to the About Page. The aim is to place a logo there in the future.

# 2. Game Strategy

This defines how the game should operate. The gaming needs and requirements for the project have also been established.

# 2.1 Correct Tag

As the players tag the sharks in the images, these tags are stored in a database. In order to figure out which is the correct tag for a shark image, a limit should be met on how many times a said image has been tagged by a specific tag. An example would be, If a shark image has been tagged “Bull Shark” at least ten times then that shark in the image shall be taken as the Bull Shark.

# 2.2 Player Points

The points for each player is calculated based on what the tag they suggest is and what most likely the correct tag is for each image. The points for the players will not be updated until the correct sharks in the images are confirmed i.e. a shark in an image has reached the limit of being tagged “Bull Shark” ten times and hence shall be confirmed as Bull Shark. The player that tagged this image “Bull Shark” a few days ago will receive their points immediately.

**II. Technical Specification**

# 1. Technologies

The following is a list of all the technologies used to develop the game and other elements of the project up till date.

# 1.1 Bootstrap v3.3.5

Bootstrap is a HTML, CSS, JavaScript framework. It is used as the most common basis of front end development. It allows for cross platform compatibility i.e. it scales websites and applications to fit any device; from phones to tablets to PCs.

The pages in the project contain basic Bootstrap elements. A simple example can be found here: [http://getbootstrap.com/getting-started/#template](http://getbootstrap.com/getting-started/" \l "template)

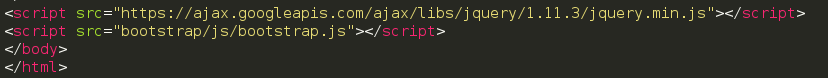
The following link provides a run down on the CSS and Bootstrap elements which provide functionality for the page: <http://getbootstrap.com/css/> This page should be studied before attempting to edit or add any new code.

CDN

A CDN is a content delivery network which provides webpages on servers. Bootstrap has source code which can either be downloaded and then inserted into the project or source code in the form of links which can be inserted via CDNs. CDNs are not reliable since if the server crashes or stops responding, the website will malfunction or experience errors.

It is vital that no Bootstrap CDNs are used in this project. The website in this project need not be dependent on CDNs. Rather the bootstrap pre-compiled code found in the folder '**Bootstrap-3.3.5**' should always be inserted into the current pages and any more pages developed. The Ajax link at the end of a Bootstrap page is the **ONLY** exception.

Illustration 0: <head> section of a Bootstrap code showing how to link Bootstrap

Illustration 0: The two mandatory script files inserted to end a Bootstrap page

Versions

Version 3.3.5 was used at the time of development and is still used but version [4.0.0 alpha](http://v4-alpha.getbootstrap.com/) is now readily available since 19/08/15. v3 will still be kept updated by Bootstrap and hence should be continued in the project's development.

# 1.2 Jcrop v0.9.12

This is a plugin which comprises of jQuery. It is used as the cropping functionality in the project. Jcrop is only placed in the Game page.

This is used to crop the image. It also has the option of displaying the coordinates of the cropped image, adding animations, and many other functions.

This project requires Jcrop to crop the image and store the coordinates of the cropped image in a database. Cropping should be enabled in any platform.

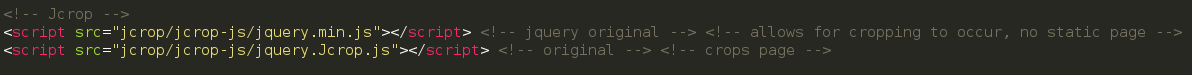
Versions

[Jcrop v0.9.12](file:///srv/www/htdocs/SharkGameProject/Jcrop-0.9.12/index.html) was used during development but it does not implement the cropping feature when switched to tablet or phone viewing. For this, [Jcrop v2.0.0](file:///srv/www/htdocs/SharkGameProject/Jcrop-2.0.0/index.html) should be used to allow for cross platform compatibility. In order to understand Jcrop, both versions must be studied before editing or the addition of any code. Both versions are located in their corresponding folders; '**Jcrop-0.9.12**' and '**Jcrop-2.0.0**'.

A folder containing tests which were carried out with v2.0.0 are located in the '**MAIN**' folder called '**testing-cropping-with-Jcrop-v2.0.0**'.

There are 3 things to keep in mind when implementing the Jcrop functionality. The following is the example for Jcrop v0.9.12 on how to implement Jcrop.

**Jcrop v0.9.12: One**

Illustration 0: Attaching Jcrop files

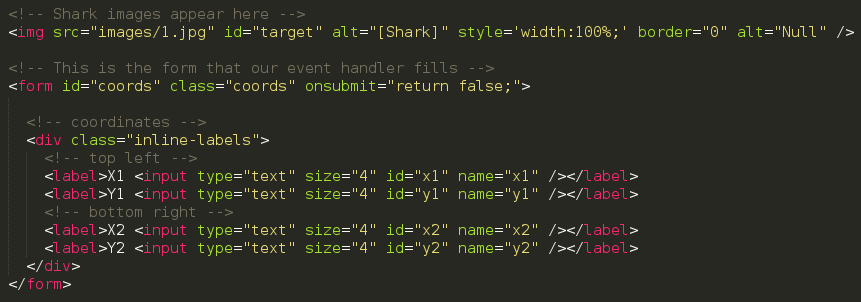
**Jcrop v0.9.12: Two**

Illustration 0: Attaching Jcrop scripts needed for the crop and detecting the coordinates

**Jcrop v0.9.12: Three**

Illustration 0: Attaching the Jcrop Bootstrap and Jcrop.css files

After the three steps, in order for Jcrop to be operable, the following should be implemented in the <body> section to display the coordinates and to draw a crop box around the shark.

Illustration 0: <body> code for Jcrop

# 1.x XAMPP/LAMP

XAMPP provided the creation of a MySQL database using phpMyAdmin. Apache HTTP server is used to host the site. The project was first developed on Windows and hence required XAMPP. It was then moved onto LAMP and shall be continued on this OS.

LAMP is used on Linux with MySQL database and phpMyAdmin and hosted on the Apache server.

Credentials used to log in to phpMyAdmin to access the sharks MySQL database:

Username: root

Password: sharks

III. Code Location

# 1. Unix Login

Username: **root**

Password: **sharks**

# 2. Locating the code

1. Click on *Activities* which is situated on the top left hand side of the screen.
2. This will open up a panel of icons.
3. Open *Files* which is the fourth icon on the panel.
4. Click on *Computer*.
5. Follow: *srv/www/htdocs/SharkGameProject.*

The folder *SharkGameProject* contains all the code and anything extra for this project. Alternatively the full code is also located on: <https://github.com/sjbarlas/SharkGameProject> and can be downloaded by clicking on “Download ZIP”.

Opening up *Sublime Text* from the panel, which is the third icon, should already open up the *SharkGameProject* contents and the source code.

The folder *MAIN* in the *SharkGameProject* contains all the primary source code needed for this project.

# 3. Folder Contents

The contents of each folder shall be examined individually. A standard folder tree can be viewed here: [https://github.com/sjbarlas/SharkGameProject#contents](https://github.com/sjbarlas/SharkGameProject" \l "contents)

3.1 Bootstrap-3.3.5