Developing a Shark Validation Monitor

HELP US VALIDATE RECORDS!

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Validation Monitor Final Report

1. Monitor function
2. Media sourcing
3. Database management
4. Webserver
5. User Authentication
6. Gaming
7. Hackathon (prizes & achievements)
Principal Components

Login to keep score!

User ValPoints (VP) Rank
jeremy 244 2

+2 VP for 'Yes' or 'No'
+3 VP for 'Common' or 'Species' name
+5 VP for 'Common' and 'Species' name

Validation Monitor

Validation

ARCTIC OCEAN

NORTH ATLANTIC OCEAN

Europe

North America

Africa

Leaflet | Map tiles by Stamen Design, CC BY

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Is this a shark (mark no if in an aquarium)

Identification guide

Yes
No

Common name:

Species name:

Comments:

Submit

LEADERBOARD

User ValPoints Rank
jeremy 244 2
Mason Mulgrew 142 2
Francesco Ferretti 109 2
Media sourcing

Filter out non-shark images

- Instagram
- Flickr
- iNaturalist

Validation Monitor
# Database and PHP management

<table>
<thead>
<tr>
<th>DB table name</th>
<th>Description</th>
<th>PHP script 1</th>
<th>PHP script 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>userbase</td>
<td>Stores all user information</td>
<td>userbase.php - generates user profile</td>
<td>scoreboard.php - generates leaderboard</td>
</tr>
<tr>
<td>user_validation</td>
<td>Records all images validated and their validators</td>
<td>action_page.php - appends image with user ELO</td>
<td></td>
</tr>
<tr>
<td>data_mining</td>
<td>Stores all image information including validation progress</td>
<td>action_page.php - changes records based on user input</td>
<td></td>
</tr>
</tbody>
</table>

![Data Mining and Userbase Connections](image)
SHARKPULSE IN NUMBERS!

TOP 5 SPECIES

1° - Eastern Shovelnose Stingaree (Trygonoptera imitata)
2° - Great White Shark (Carcharodon carcharias)
3° - Whitetip Reef Shark (Triaenodon obesus)
4° - Whale Shark (Rhincodon typus)
5° - Eagle Ray (Myliobatis tenuicaudatus)

32,586 Photo records
367 Identified species

38% Species Coverage
Webserver

```php
$settings = $this->get_settings_for_display();

$this->add_render_attribute( 'counter', [
    'class' => 'elementor-counter-number',
    'data-duration' => $settings['duration'],
    'data-to-value' => $settings['ending_number'],
];

if (!empty( $settings['thousand_separator_char'] ) ) {
    $delimiter = empty( $settings['thousand_separator_char'] ) ? ',' : $settings['thousand_separator_char'];
    $this->add_render_attribute( 'counter', 'data-delimiter', $delimiter );
}

<div class="elementor-counter">
    <div class="elementor-counter-number-wrapper">
        <span class="elementor-counter-number-prefix">'counter' 'prefix'; ?</span>
        <span>{$this->get_render_attribute_string( 'counter' ); ?></span>
        <span>{$this->get_render_attribute_string( 'suffix' ); ?></span>
    </div>
    <div class="elementor-counter-title">]!='title'; ?</div>
</div>
```
User Authentication

- Current User Authentication system
- Login without WordPress
- One Click Login

HELP US VALIDATE RECORDS!
Can you find a shark?
Login to keep score!
# Gaming Rules and Systems

- Autonomous scoring
  - Controls
  - ELO
- User enjoyment and interaction
  - Scoring
  - Achievements
- Rewarding features
  - Leaderboards
  - Prizes

<table>
<thead>
<tr>
<th>Username</th>
<th>Score</th>
<th>ELO</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>newUser</td>
<td>0</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>sharkNoob</td>
<td>30</td>
<td>660</td>
<td>75</td>
</tr>
<tr>
<td>wildlifeMaster</td>
<td>745</td>
<td>1970</td>
<td>220</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>URL</th>
<th>Constant</th>
<th>ELO Value</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>shark1</td>
<td>(url)</td>
<td>Yes</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>notShark1</td>
<td>(url)</td>
<td>Yes</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>webSourced1</td>
<td>(url)</td>
<td>No</td>
<td>2260</td>
<td>9120</td>
<td></td>
</tr>
<tr>
<td>webSourced2</td>
<td>(url)</td>
<td>No</td>
<td>10330</td>
<td>1400</td>
<td></td>
</tr>
</tbody>
</table>
Gaming

- Scoring
- Achievements
- Events and Prizes
Acknowledgements

Client: Francesco Ferretti, PhD, Assistant Professor, Department of Fish and Wildlife Conservation
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Mentor: Dr. Edward Fox, PhD, Professor, Department of Computer Science
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sharkPulse, sharkpulse.org
References


Ferretti, F. 2021. *sharkPulse, take the pulse of global shark populations*. https://www.sharkulse.org


QUESTIONS?