Online Aquarium Ticket Booking

Final Project

Team Name: Pixel Corps

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Contents

INTRODUCTION

Title of the project:

Online Aquarium Ticket Booking

Abstract of the project:

The objective of this system is to provide an interface which allows the user to book aquarium tickets online. User can be registered or a guest user. Designing and programming a system that implements the following:

- User should be asked if any guide needed along with guidance tools like maps.
- Pick up and drop facilities should be included.
- Special offers for kids should be provided.
- Snacks/lunch meal plan should be included as per user's choice.
- User information booklet should be provided (includes rules, timings, slots nearest places to visits).

Aquarium shows are the main attractions. So system should allow user to see details about it.

- User should be able to select show as per need like dolphin show, music fountain, etc. Also user should be able to see content of shows.
- User should be able to book slots for particular show and get tickets.
- User can also book tickets for rides with sea animals, and recording the whole thing including taking pictures with them.
- User should be given discount if more than one show booked.
- System should follow the online payment process and should give user proper feedback about it.

Requirements:

1. **Ascertain the user's needs:**
   - User can login if he/she is an existing user or register if he/she is a new user or can continue as a guest user. All users are authorized by the administrator
   - User can check different types and timings of various shows like the Dolphin show, Music fountain, etc. The details are controlled by the administrator.
   - The User can avail additional facilities like pick-up and drop-off, snack/lunch meal plan.
   - User can request for guidance tools like Maps, GPS, etc., for easy navigation.
   - User can also request for an information booklet which contains various rules, timings, nearby places to visit.
   - User can get various offers depending upon their visit, kids can get special offers.

2. **Ensure reliability:**
   - Personal data of the user is encrypted and stored in a confidential manner.
   - Authorization is secure, reducing the risk of the accounts being compromised.
   - Data shown is reflected from the actual database.

3. **Promote standardization, integration, consistency and portability:**
   - Fonts and color palettes are maintained uniformly throughout the project.
   - Data collected and stored can be accessed across platforms.
   - The project is compatible across all operating systems.

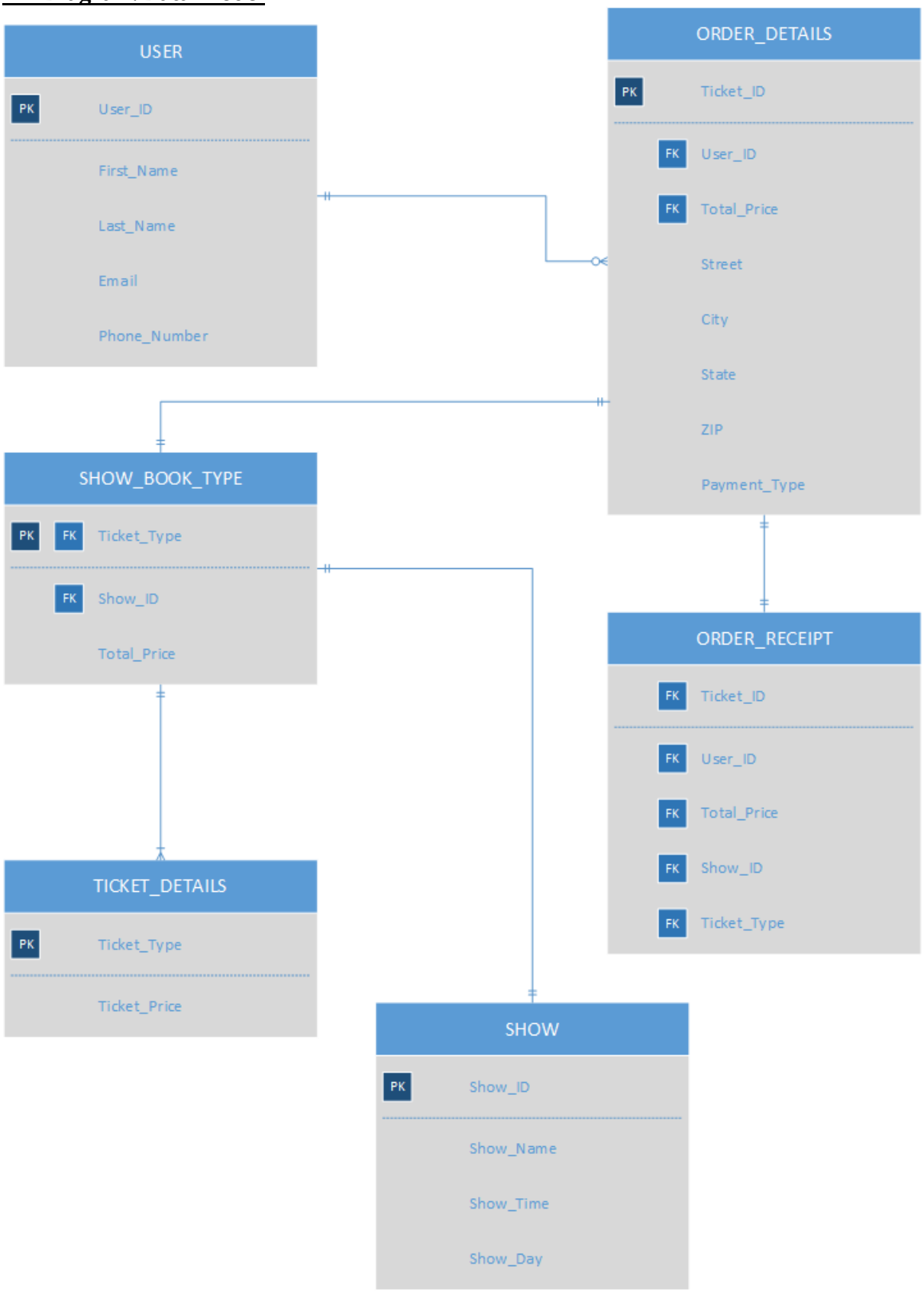
4. **Complete projects on time and within budget:**
   - A strict schedule which is maintained by which the deadlines for each part of the project is met.
   - Occasional reviews are held to ascertain the status of the project at the given time.

Functional Requirements:

Functional Requirement ID	Functional Requirement Description
FR #01	The user should be able to register with the application if he/she is a first time user
FR #02	The user should be able to login with existing credentials
FR #03	The user should be able to update his/her personal details
FR #04	The user should be able to view different shows based on the type of shows or show timings.
FR #05	The user should be able to view the detailed description of each show
FR #06	The user should be able to check the available tickets for each show.
FR #07	The user should be able to select a specific show, specify the required number of tickets, enter each member details and add the tickets to the cart.
FR #08	The user should be able to book multiple tickets of different shows at a time.
FR #09	The user should be able to request for pick up and drop off facility
FR #10	The user should be able to request a user specific snack/lunch meal plan.
FR #11	The user should be able to request for a guidance tool like Maps or GPS etc.
FR #12	The user should be able to request for information booklet which contains rules, timings, nearby places to visit.
FR #13	The user should be able to should be able to see the location, contact details and way to reach the aquarium.
FR #14	The user should be able to avail different offers, Kids can get special offers.
FR #15	Admin should be able to accept or delete user registration requests.
FR #16	Admin should be able to add a show by mentioning different details regarding the show.
FR #17	Admin should be able to edit, delete a show.
FR #18	The user ID and password should be sent to the registered email address if a new account is created.

FR #19	The system should automatically show the price for each show and the total price should also be displayed.
FR #20	The system should follow the online payment process and should give proper feedback to the user about payment confirmation.
FR #21	The system should send the order confirmation to the registered email and a message should be sent to the registered telephone number.
FR #22	Special attractions and discount prices should be updated on the home page.
FR #23	Special events and ongoing parties information have to be sent to registered users through the newsletters.

ER Diagram/Data Model



Task Description:

Task	Description
Task 01	The user can access the home page where he/she can find multiple details about the application
Task 02	New users can register with the application
Task 03	Existing users can login into the application by using the username and password
Task 04	After login, Users can update their personal data like address, phone number, email, etc. by using the my account
Task 05	User can book the tickets by selecting the "Book tickets" option. The user will be displayed with all show details.
Task 06	User can select a specific show and enter the ticket details like number of adults and children.
Task 07	User can opt for additional facilities like booking for pick up and drop off, request for maps, guide, meals etc.
Task 08	The user will be directed to the online payment page where he/she needs to enter the card details
Task 09	Once the payment is successful, User will be displayed with the confirmation page with the ticket Id and ticket details
Task 10	User can user Contact Page for any queries
Task 11	User can book for special occasions like school outings, birthday parties by filling the form through the application.
Task 12	User can find all the different shows and tours, show details.
Task 13	User can check the 'About Us' page where he can find the details about the aquarium.
Task 14	User can check the images of different shows using the gallery.
Task 15	The user can search any shows by using the search option

Informed Consent

I volunteer to participate in a project conducted by the team Pixel Corps from Northwest Missouri State University. I understand that the participation in this project is to depict the processing of the Maryville Aquarium.

I, the undersigned, confirm that (please tick box as appropriate):

1.	I have read and understood the information about the project, as provided in the Information Sheet dated _____.	☐
2.	I have been given the opportunity to ask questions about the project and my participation.	☐
3.	I voluntarily agree to participate in the project.	☐
4.	I understand I can withdraw at any time without giving reasons and that I will not be penalized for withdrawing nor will I be questioned on why I have withdrawn.	☐
5.	The procedures regarding confidentiality have been clearly explained (e.g. Use of names, pseudonyms, anonymization of data, etc.) to me.	☐
6.	If applicable, separate terms of consent for interviews, audio, video or other forms of data collection have been explained and provided to me.	☐
7.	The use of the data in research, publications, sharing and archiving has been explained to me.	☐
8.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.	☐
9.	I would like my name used and understand what I have said or written as part of this study will be used in reports, publications and other research outputs so that anything I have contributed to this project can be recognized.	☐
10.	I, along with the Researcher, agree to sign and date this informed consent form.	☐

NAME: _____ Signature: _____

Date (DD/MM/YY): _____

Usability Measures:

Usability measures	How we plan to quantify	Formula

Speed of performance	By considering the start time and end time of each task performed by user, we will measure the speed of performance.	(End time-Start time)
Rate of errors by users	We will record the number of errors displayed while performing each task.	(Number of errors / Time taken to complete the task)
Subjective satisfaction	By asking a few questions to the user we will know to what extent he is satisfied with the website. We would request the user to rate each task on a scale of 1 to 5 (1-poor, 2-fair, and 3-good, 4-very good and 5-excellent).	Use a likert's scale
Retention over time	It is how long a user can remember each task and perform the task. The performance can be better if the user knowledge of remembering the steps is high.	

Usability logs:

User1:

Task	Start time	End time	No of mouse clicks	No of key strokes	No of errors	Defects/comments
T1	08:45:15	08:45:31	1	0	0	-----
T2	08:49:30	08:51:03	11	66	1	User did not fill the address in the registration form
T3	08:57:05	08:57:25	3	24	0	-----
T4	09:01:27	09:02:30	12	55	0	-----
T5	09:05:16	09:05:36	1	0	0	-----
T6	09:12:50	09:13:23	9	0	0	-----
T7	09:18:13	09:18:40	2	0	0	-----
T8	09:25:46	09:27:16	17	82	0	-----
T9	09:29:54	09:30:23	1	0	0	-----
T10	09:34:18	09:35:31	4	77	0	-----
T11	09:38:02	09:39:12	7	8	0	-----
T12	09:42:52	09:43:59	3	0	0	-----
T13	09:44:18	09:44:31	1	0	0	-----
T14	09:48:02	09:48:12	3	0	0	-----
T15	09:52:52	09:53:59	2	8	0	-----

User2:

Task	Start time	End time	No of mouse clicks	No of key strokes	No of errors	Defects/comments
T1	06:15:13	06:15:38	1	0	0	-----
T2	06:18:20	06:19:33	12	78	1	User did not enter the correct password both times in the registration form.
T3	06:23:05	06:23:25	3	13	0	-----
T4	06:25:27	06:25:58	8	34	0	-----
T5	06:28:16	06:28:36	1	0	0	-----
T6	06:29:50	06:30:10	9	0	0	-----
T7	06:33:13	06:33:40	2	0	0	-----
T8	06:35:46	06:36:16	17	45	1	User did not enter the CVV of the card
T9	06:38:54	06:38:23	1	0	0	-----
T10	06:40:23	06:41:31	4	82	0	-----
T11	06:42:02	06:43:12	7	13	0	-----
T12	06:43:52	06:44:26	3	0	0	-----
T13	06:46:10	06:46:31	1	0	0	-----
T14	06:48:02	06:48:12	3	0	0	-----
T15	06:52:52	06:53:47	2	12	0	-----

User1:

Usability measures	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15
Speed of performance	16	93	20	57	21	33	31	92	29	73	48	65	13	10	67
Rate of errors	0	0.0107	0	0	0	0	0	0	0	0	0	0	0	0	0
Subjective satisfaction	1	2	2	1	1	1	2	1	2	1	1	2	1	2	2

NOTE: 1 – Strongly Agree 2- Agree 3- Neutral 4- Disagree 5- Strongly Disagree

User2:

Usability measures	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15
Speed of performance	25	73	20	31	20	21	27	33	29	67	70	34	21	10	57
Rate of errors	0	0.0136	0	0	0	0	0	0.303	0	0	0	0	0	0	0
Subjective satisfaction	1	2	1	2	1	1	2	2	1	1	1	2	1	1	2

NOTE: 1 – Strongly Agree 2- Agree 3- Neutral 4- Disagree 5- Strongly Disagree

Survey using Likert's Scale:

User1:

Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Overall, I am satisfied with how easy it is to use this system		✓			
I can effectively complete my work using this system	✓				
Whenever I make a mistake using the system, I recover easily and quickly		✓			
The interface of this system is pleasant	✓				
It is easy to find the information I needed	✓				

User2:

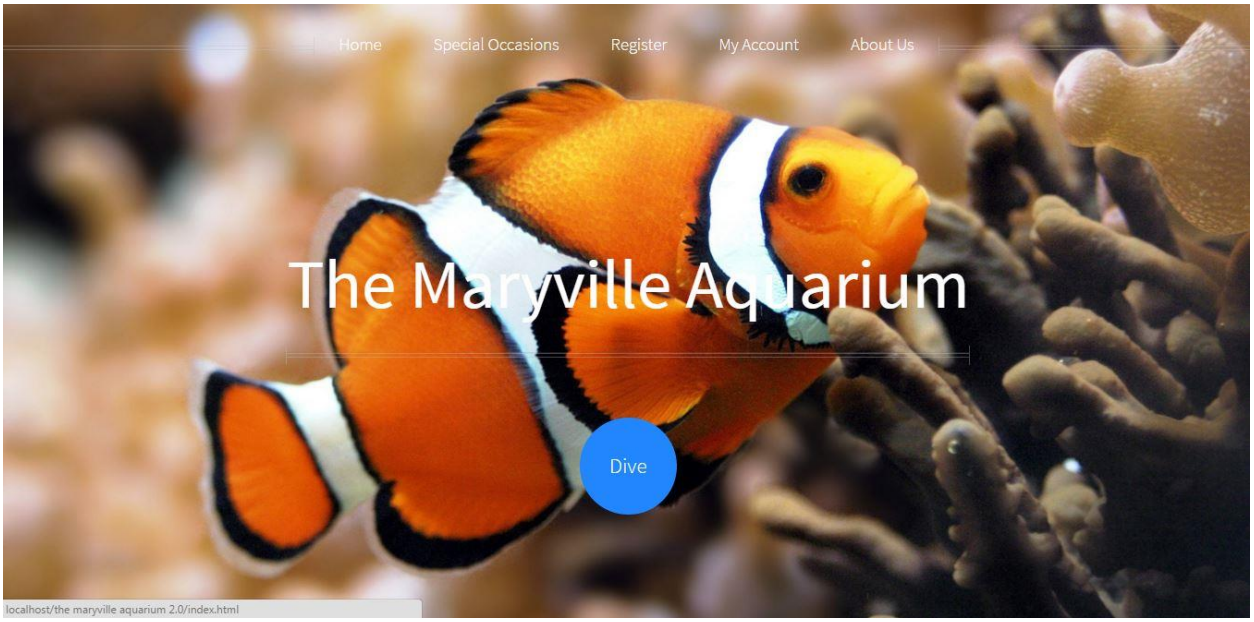
Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Overall, I am satisfied with how easy it is use this system.	✓				
I can effectively complete my work using this system		✓			
Whenever I make a mistake using the system, I recover easily and quickly		✓			
The interface of this system is pleasant	✓				
It is easy to find the information I needed	✓				

Defect List:

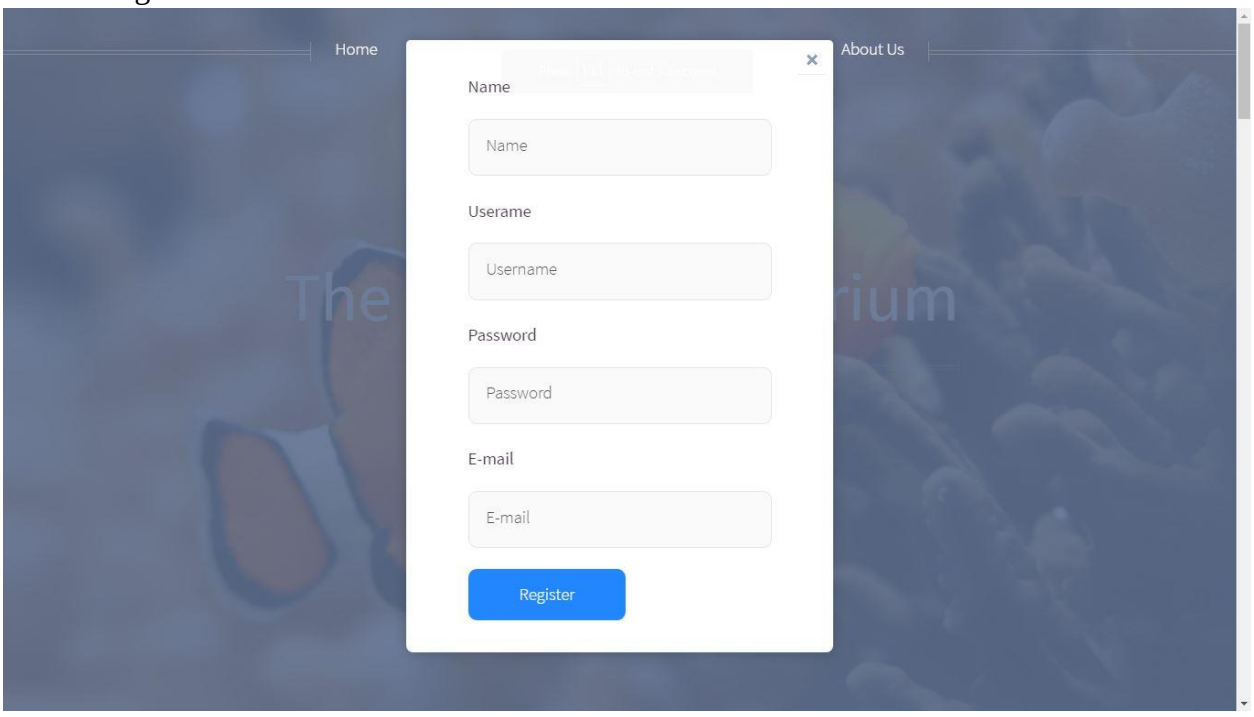
S.No	Defects	User1	User2
1	In the login page, user got confused with username and email id	X	
2	In payments page, user got confused with the CVV text field.		X

Screenshots of the User Interface:

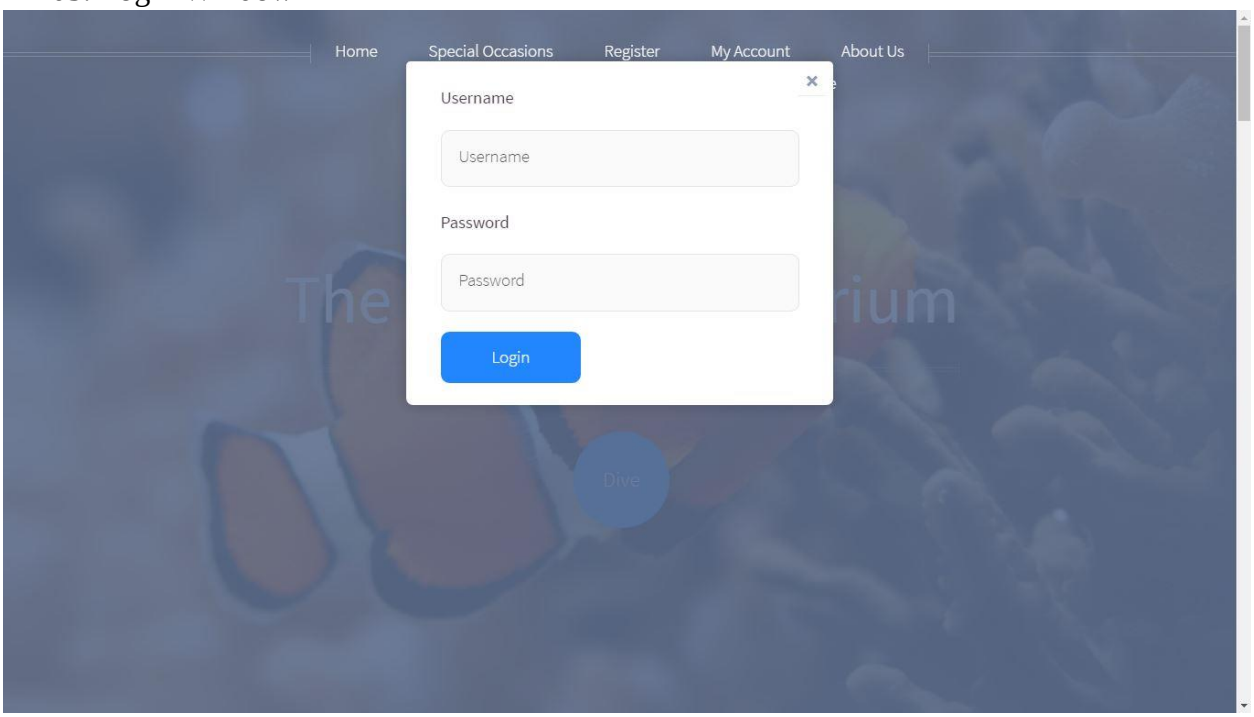
01. Home Screen



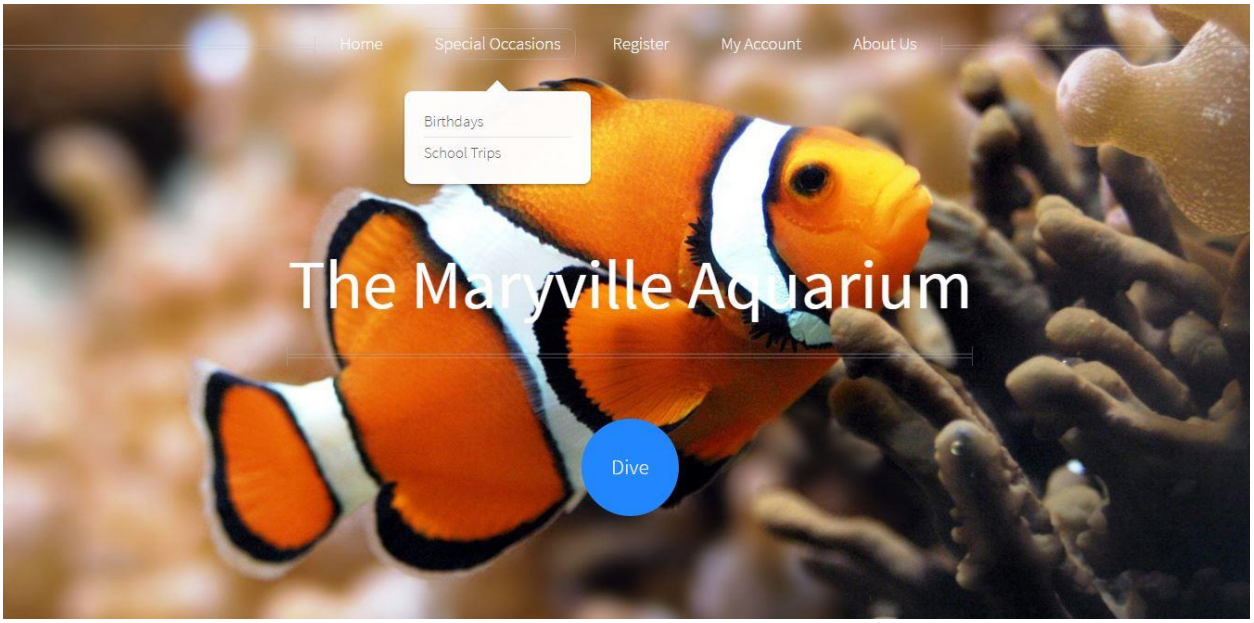
02. Register Window



03. Login Window

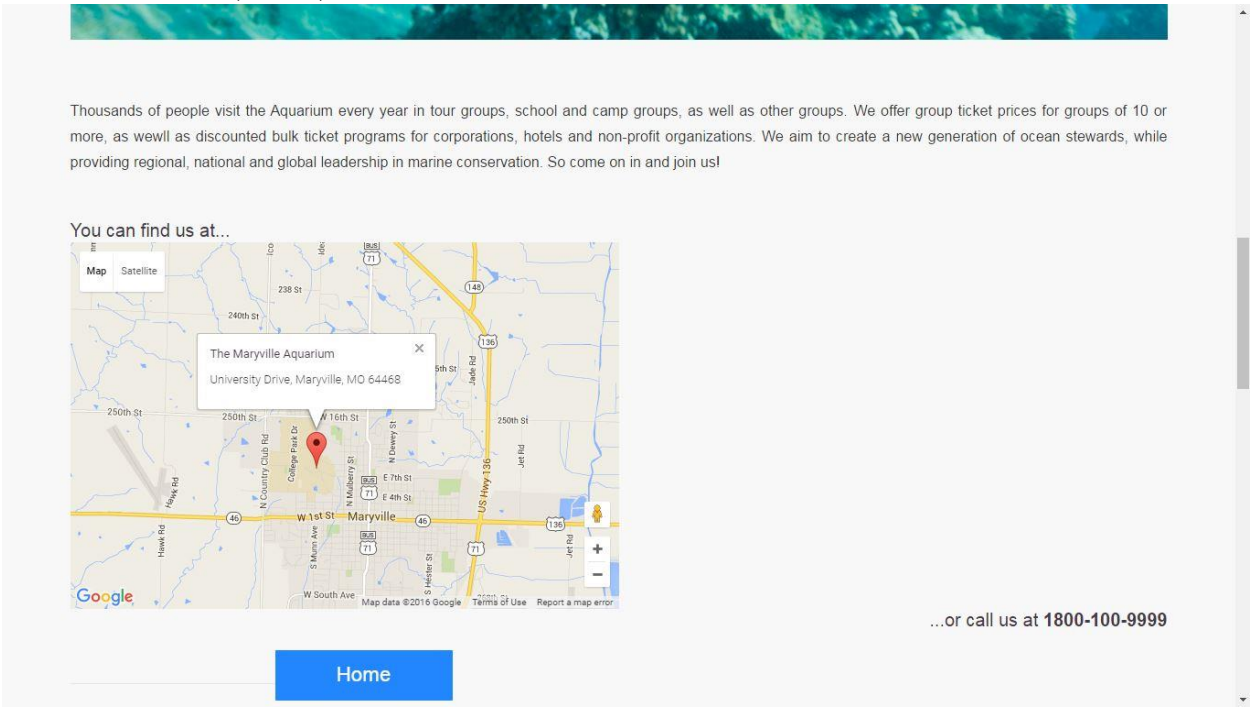


04. Home Sub-Menu

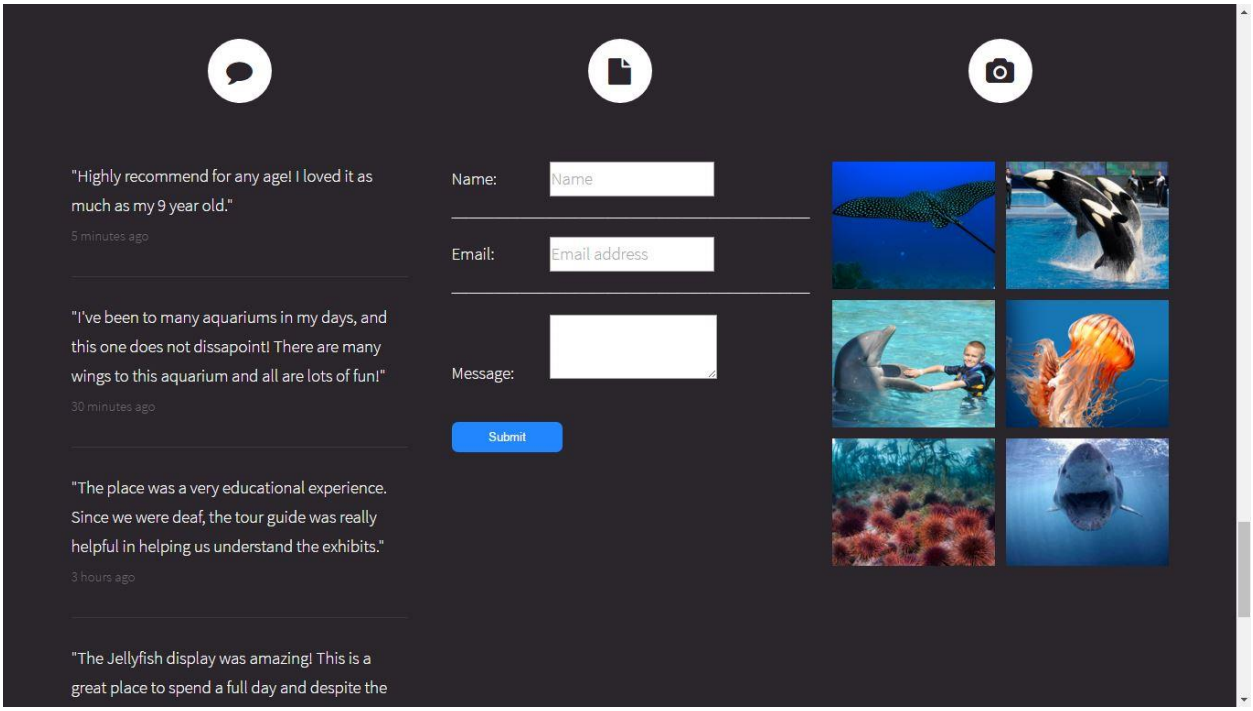


05. About Us

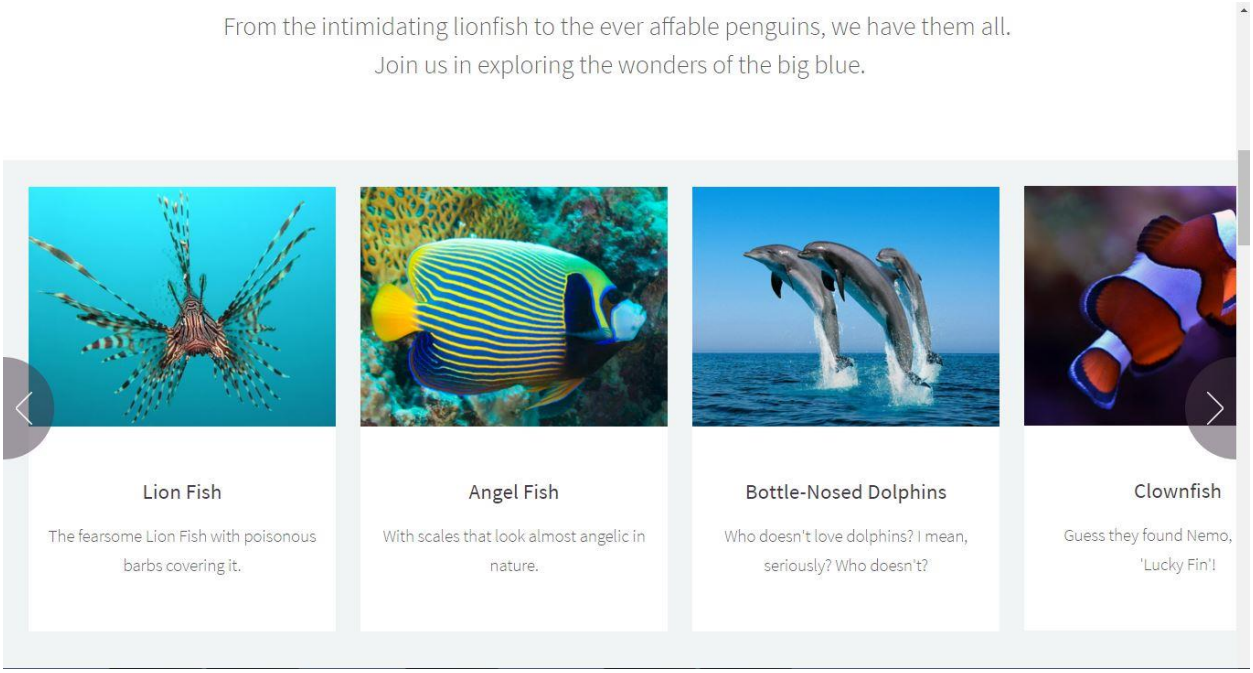
06. About Us (contd.)



07. Contact Us

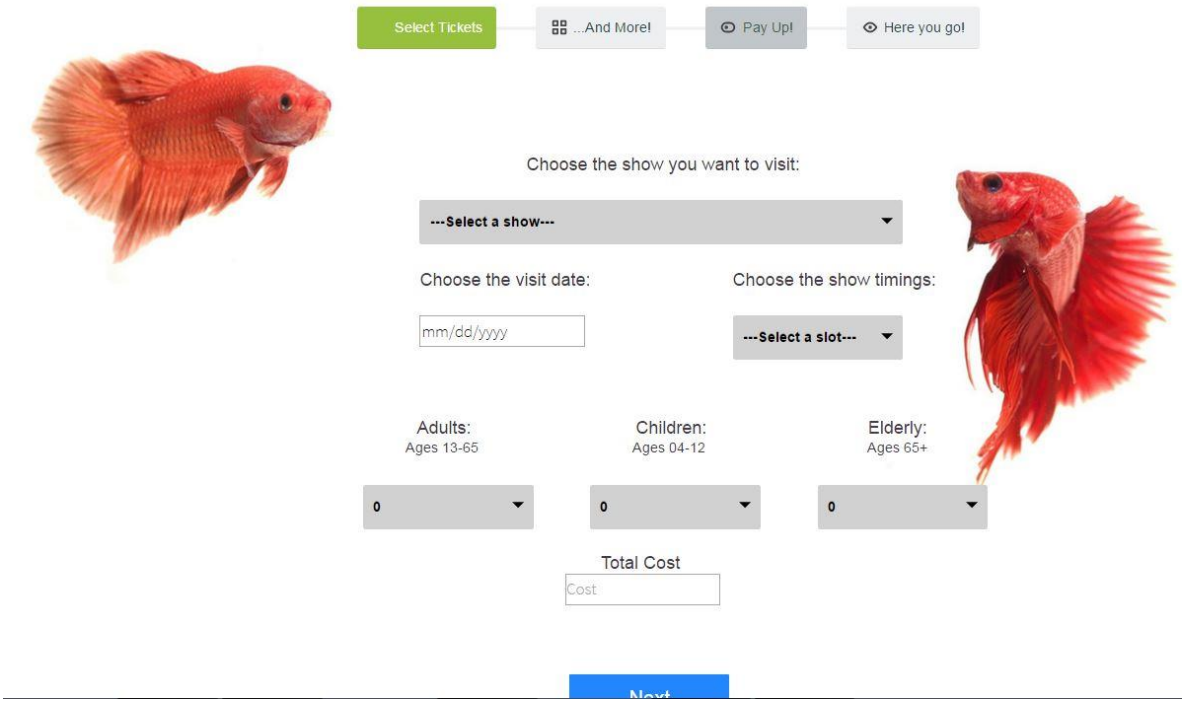


08. Gallery

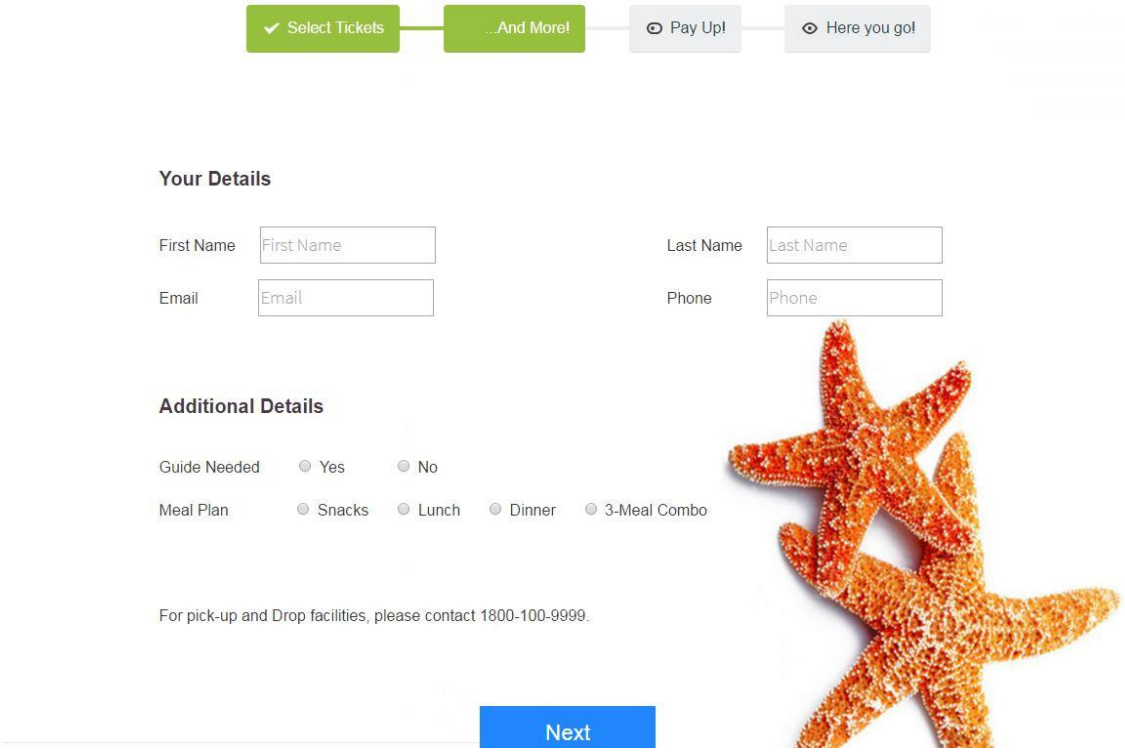


09. Book Tickets

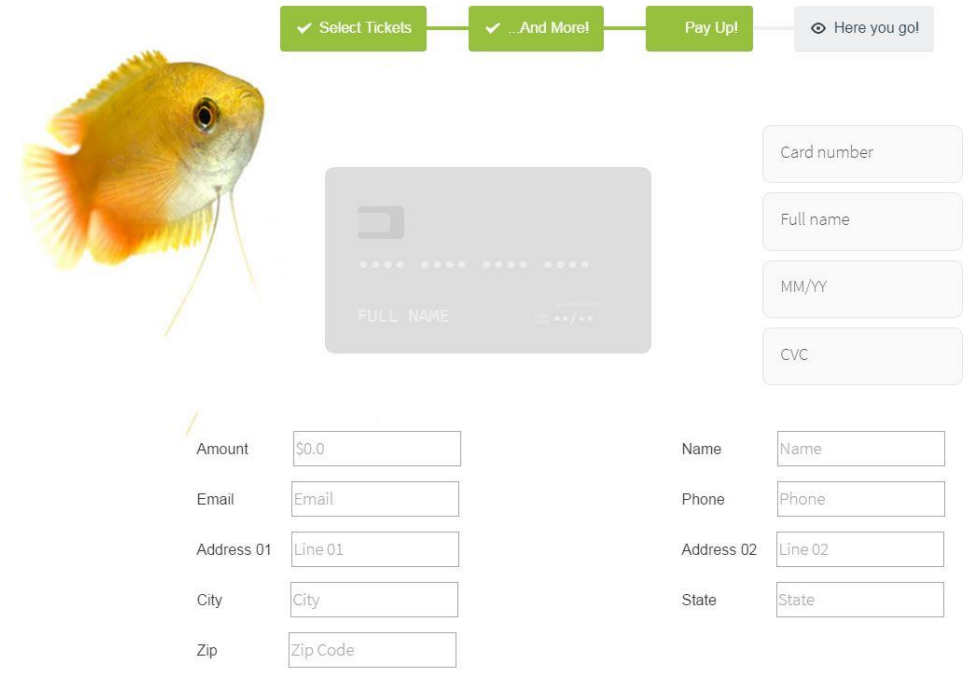
10. Select Tickets



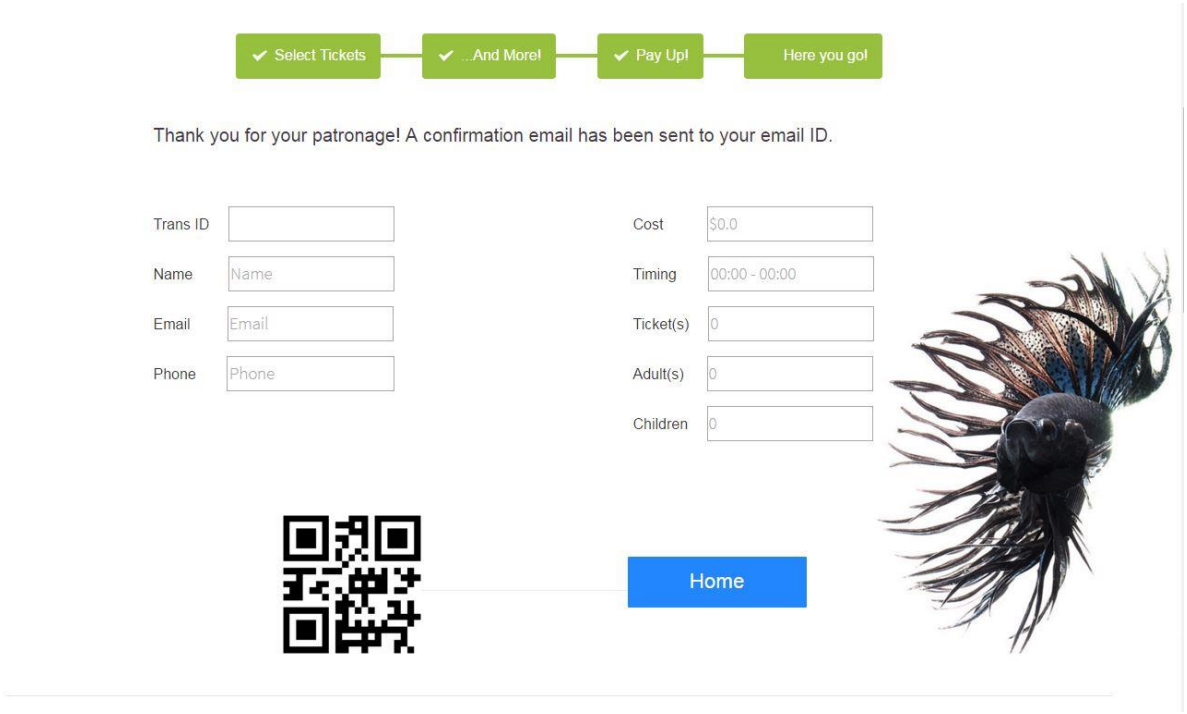
11. Additional Facilities



12. Payment



13. Payment Confirmation



Eight Golden Rules of Design:

Golden Rule #01: Strive for Consistency

Consistency is mandatory for maintaining the look and feel of any website. The Maryville Aquarium (TMA) maintains it perfectly, having approached it with a minimalistic design. We can observe that the menu buttons, tabs font size, color, layout etc., are designed uniformly. Also, the general template of the website also maintains a certain semblance. The design itself is very simple and the navigational tabs are clearly visible to the user, while remaining constant throughout all the pages. The pictures are also of a consistent color tone, and the ones that are different are eye-catching with a specific label.

Golden Rule #02: Cater to Universal Usability

As this is an aquarium website, many people of different age groups will visit this site, the majority being families. The simplicity of the web site allows it to be used effectively by a novice user as well as an experienced user. Overall textual content is less, with a larger focus on clean and square images. Also, the language is uniformly set to English, so language universality is maintained. Lack of language customizability is a con, although online translational tools might be able to help.

Golden Rule #03: Offer Informative Feedback

Feedback plays a pivotal role in any good design, especially when the feedback is informative and immediate. TMA provides simple feedback like highlighting the selected item with a different color or by dropping down the list if there are any sub-items under that menu. Choosing to select a show, or the number of visitors, or entering personal information, there are placeholders in every input field to allow the user to enter the data easily. Also, if the user tries to navigate to a non-existent page, the site offers a nice error feedback with an option to redirect to the home page, as well.

Golden Rule #04: Design Dialogs to Yield Closure

There is no search icon on the top-right corner home page where a user could usually submit the search query. Instead, the site is laden with drop-downs where the user will have a chance of selecting the appropriate option from that list. This makes navigation easy and quick. Also, the results are depicted pictorially and not textually, which also piques the user's interest.

Golden Rule #05: Prevent Errors

While browsing through the website, most of the fields for data entry are replaced with dynamic menus or buttons. In this way, the chances of the user entering the wrong information, is severely reduced.

Golden Rule #06: Permit Easy Reversal of Actions

When the user is navigating through the website, he/she may click on the wrong link, by accident. To go back to the previous page, the user can either click on the BACK button in the browser, or move directly to another section by clicking on one of the navigational tabs.

Golden Rule #07: Support Internal Locus of Control

The simple language on the website allows users to navigate and perform actions easily. Tabs are clearly identified with their intended functions. Menu names like Home, Special Occasions, Register, My Account and About Us are very visible. Account control tab provide for sign in and sign out. Also, the user has full control over navigation and various other activities on the website.

Golden Rule #08: Reduce Short Term Memory Load

The website is simple and intuitive in its design and as such there is very little that the user truly needs to remember while attempting to navigate the website. Most of the webpage has very strong signifiers allowing a flawless user experience. Also, the login session has a 'Remember Me' feature which means that the user does not have to repeatedly login every time he/she visits the website.