

T LEVEL

*Technical Qualification in
Digital Production, Design
and Development*

Grade Standard Exemplification Materials Summer 2024

Occupational Specialism:

Digital Production, Design
and Development

Pass Version 1.0

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Business Str
Management

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Introduction

This document contains the Grade Standard Exemplification Materials (GrSEM) which includes student work.

The purpose of this material is to support centres and students in their understanding of the requirements of the Occupational Specialism component of the Technical Qualification and to prepare for future submissions.

The student work submitted was marked and awarded at the boundary of the grade indicated within the document. It should be noted that the portfolio of work provided may include tasks (and elements of) which perform above, at and below the final awarded grade and the holistic grade for the portfolio is made up of the performance across all tasks.

The portfolio provided is typical of a learner performing at the grade awarded for the Occupational Specialism and should therefore indicate an indicative level of performance to achieve that grade.

This document should be used in conjunction with the task booklets, mark scheme and most notably, the Lead Examiner report. These documents can be found on the Pearson website here [Digital Production, Design and Development | Pearson qualifications](#).

The duration of this assessment is 87 hours of supervised sessions spread over a period of 14 weeks.

The assessment is split into four tasks covering a range of topics. These are summarized below:

Task	Topic	Evidence	Time
1	Analysing the problem and designing a solution	Proposal of the designed solution A set of design documents	20 hours
2	Developing the solution	Prototype	30 hours

Digital Production, Design and Development

		Development documents Test log Code for prototype solution	
3a	Gathering feedback to inform future development	Plan and report on gathering feedback	15 hours 30 minutes
3b	Evaluating feedback to inform future development	Feedback evaluation report	2 hours

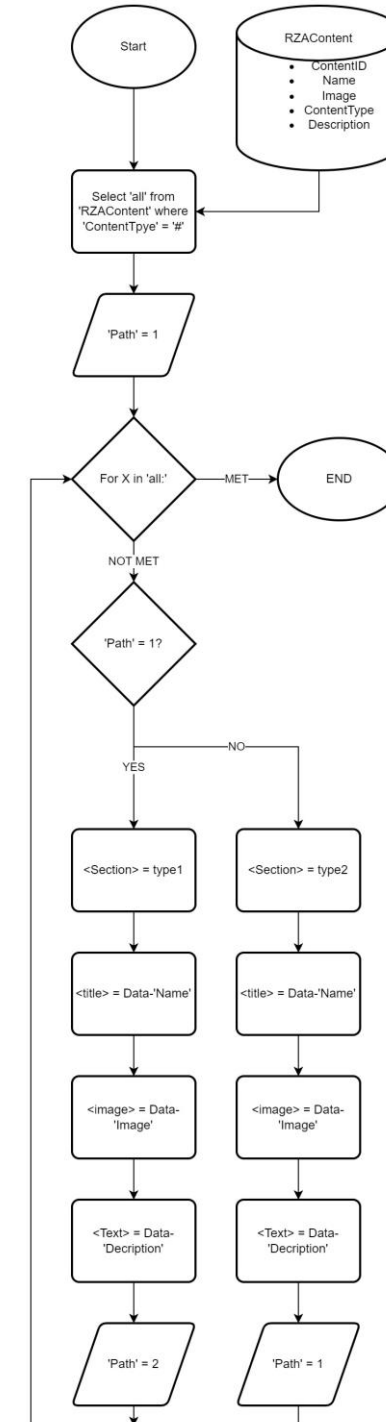
Task 1

Riget Zoo Adventures

Flowcharts

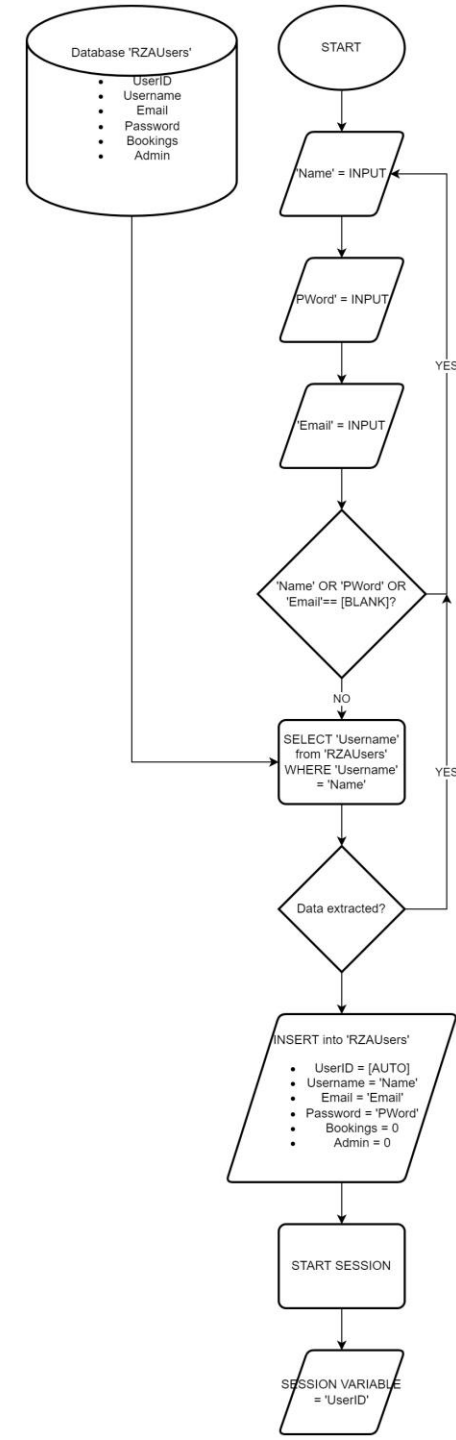
Inserting Content

- Extracts the relevant data from Database 'RZACContent' (Here, it's labelled as '#') and inserts the data into the explore pages (See Interface design document)
- For each row of data, the algorithm prints out what each part of the website is.
- Toggles between two routes that affects the design of the content.
- Ends when it prints all the extracted content.



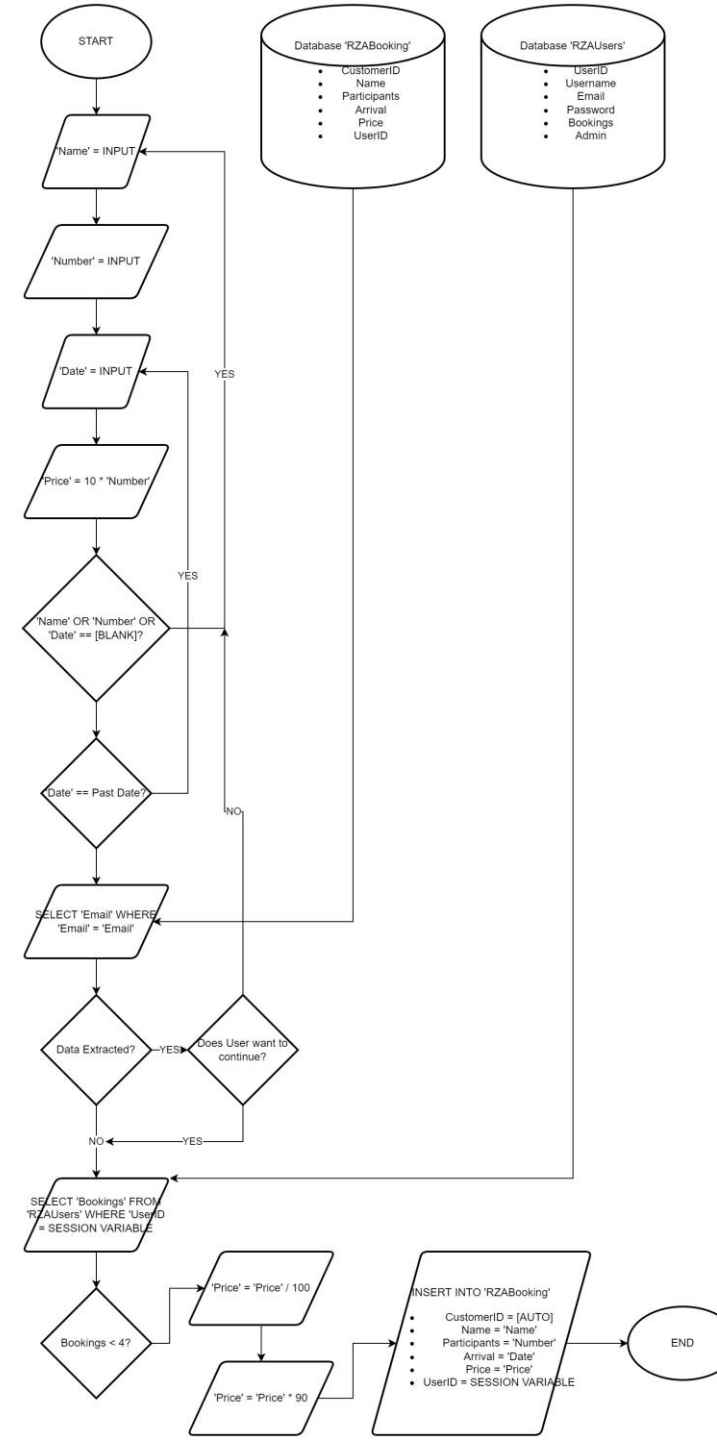
Sign-Up

- Allows the user to sign up to the website and then logs them in thanks to PHP Sessions.
- Includes presence and duplicate checks, which will ask the user to try again.
- Session variable will be the user ID, which will assist in extracting the user's data in the other webpages.



Booking

- Lets the user book a trip to the safari.
- Requires the user's name, how many people will be showing up (min of 1, max of 4) and the date of when they'll visit.
- Includes presence checks for all three inputs. Date is checked for whether it's a past date or not. Checks if the email was already used in the database and if so, asks the user if they want to continue.
- Calculates the price by multiplying preset price by the number of participants. If the user has previously booked more than four times, the price is divided to 1% then multiplied by 100 minus the current discount (10%).
- Session variable is only used to determine discount. The algorithm should still function if the sessions don't work.



Riget Zoo Adventures

Interface Design Mock-ups

Index (Home)

- Light mode design. Colour scheme fulfils zoo aesthetic.
- Content boxes will be links for certain pages of the website. Most likely those from the explore category.
- Navigation buttons will be columns to reduce the number of pages on Navigation.



Explore Pages

- Template for each Explore page:
Animals, Attractions and Facilities
- Each page will be connected to database 'RZAContents,' and the relevant data will be filtered and displayed as shown.
- Taken paths will be highlighted as the contrast colour as shown.



Booking

- For the sake of design, this booking page is for booking safari visits. Additional changes will be made for appropriate pages (E.g: Hotel Booking).
- Includes dropdown and date of arrival boxes.
- If a duplicate Email is used, a notification will ask if the user wants to continue or not. This prevents any accidental duplicate bookings.
- Prices will be calculated via backend PHP.
- The submit button will add all the data to the relevant database, filling in blank data with pre-set data.

Booking

Account

Explore

Booking

Name

Number of People (Max 4) ▾

Date of Arrival

Email

Price: £--.--

Submit

Account

- Image depicts sign-up page. Log-in page will not include 'Email' and 'Confirm Password'
- Sign-up's 'submit' button will add Name, Email and Password to database 'RZAUsers.' Columns 'Bookings' and 'Admin' will be set as 0.
- Log-in's 'submit' button will search 'RZAUsers' for matching row of data, creating a session if so and asking the user to try again if not.

The image shows a wireframe of a web page titled "Account". The page has a light orange background. At the top, there is a dark orange header bar with the word "Account" in white. Below the header, there is a navigation bar with three buttons: "Account" (highlighted in purple), "Explore" (dark orange), and "Booking" (dark orange). The main content area is a light orange rectangle. Inside this area, there is a sign-up form with a dark orange border. The form contains four input fields: "Name", "Password", "Email", and "Confirm Password". Below these fields is a dark orange "Submit" button.

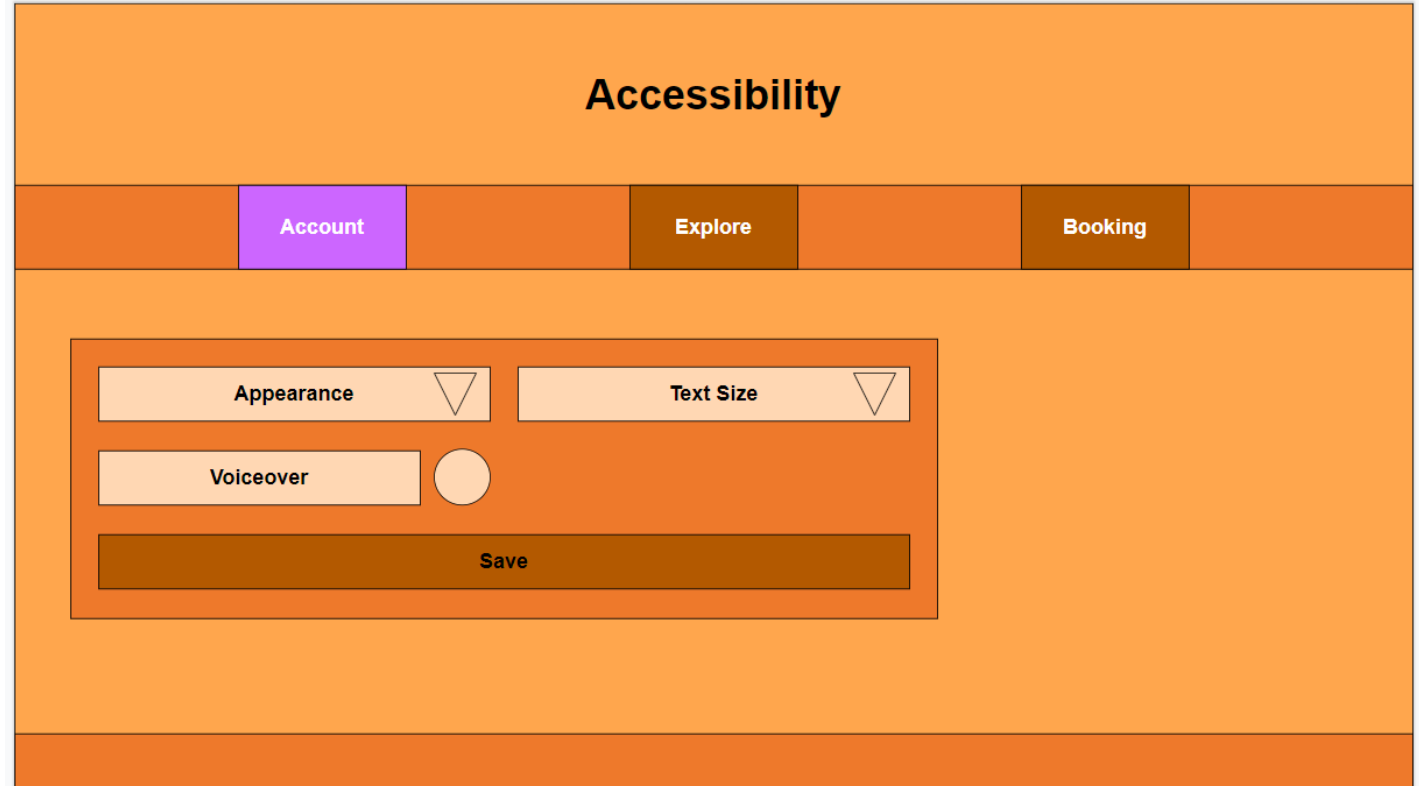
Dark Mode

- An example of dark mode for accessibility purposes
- Still keeping animal aesthetics while reducing eye strain.
- Content is contrasted more than light mode.
- Light mode and dark mode can be toggled via accessibility page in the account section.

The image shows a dark-themed user interface for a booking system. At the top, a dark grey header contains the word "Booking" in white. Below this is a horizontal navigation bar with five orange segments; the fourth segment, labeled "Booking", is highlighted in purple. The main content area is a large orange rectangle. Inside, there are several dark brown input fields: "Name", "Date of Arrival", and "Number of People (Max 4)" (which includes a small downward arrow icon). To the right of the "Date of Arrival" field is a 4x4 grid of small dark squares. Below these fields are two more dark brown boxes: "Price: £--.--" and a "Submit" button. The entire interface is set against a dark background with orange and purple accents.

Accessibility

- Changes the appearance of the website
 - Appearance (Light, Dark)
 - Text Size (1,2,3)
 - Voiceover (Toggle Button)
- Clicking save will add or edit the user's row in database 'RZAAccessibility,' depending on if the database was already present or not.
- Thanks to the sessions, the user's options should carry throughout the website.



The image shows a user interface for accessibility settings. At the top, there is a header bar with the title "Accessibility". Below this is a navigation bar with four buttons: "Account" (highlighted in purple), "Explore", "Booking", and an unlabeled button. The main content area contains a settings panel with three rows: "Appearance" with a dropdown arrow, "Text Size" with a dropdown arrow, and "Voiceover" with a toggle switch. A "Save" button is located at the bottom of the settings panel.

Accessibility

Account Explore Booking

Appearance ▼ Text Size ▼

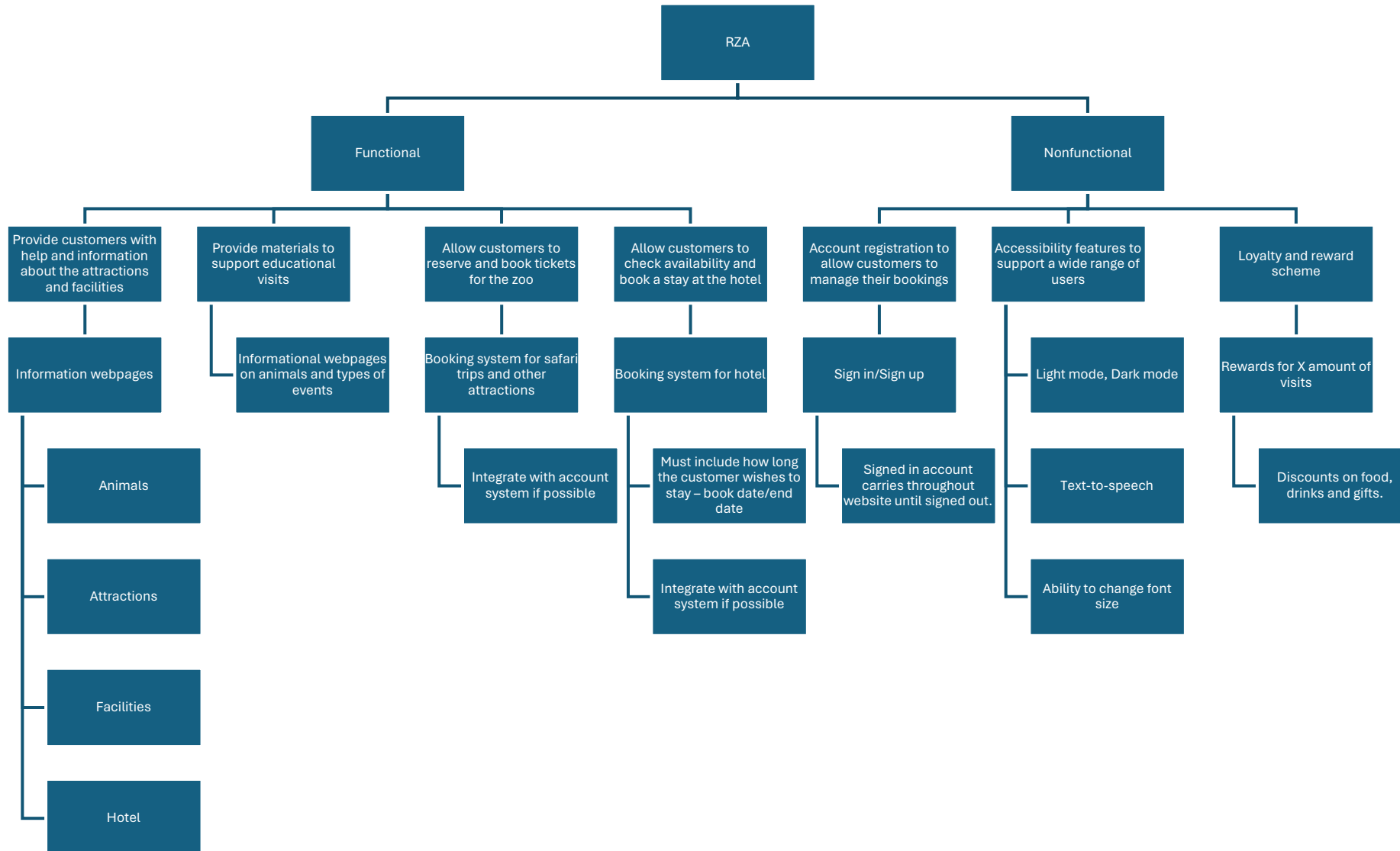
Voiceover ☐

Save

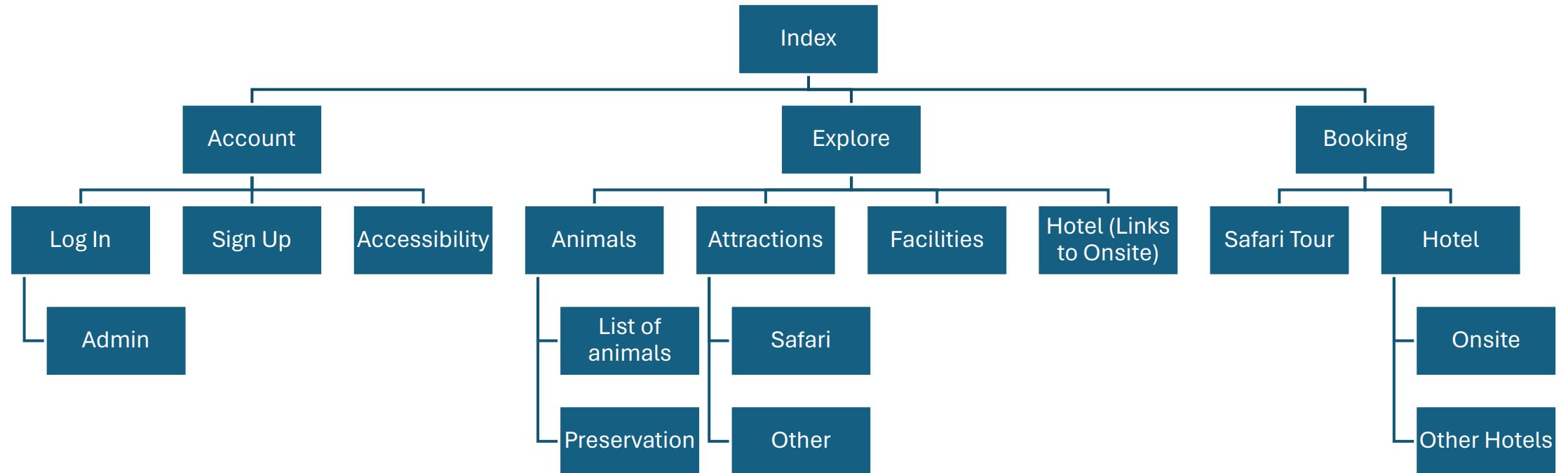
Riget Zoo Adventures

Design

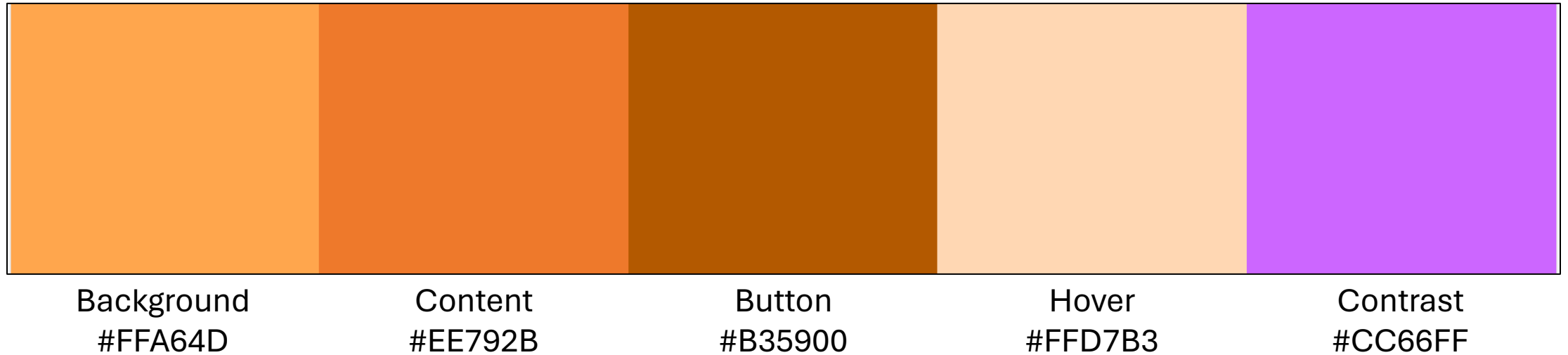
Decomposition



Website Pathing

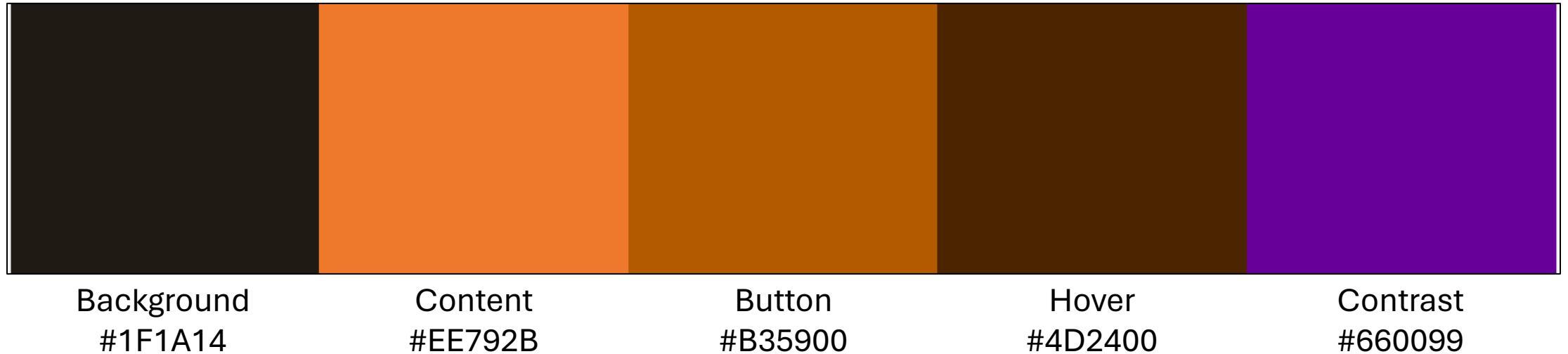


Visual Interface – Light Mode



- Safari Style – Like a giraffe
- Both black and white writing stands out
- Hover shows when hovering over button
- Contrast can be used to indicate current route

Visual Interface – Dark mode



- Dark mode for accessibility – Can be toggled by user.
- Safari Style – Like a giraffe
- White writing stands out
- Hover shows when hovering over button
- Contrast can be used to indicate current route

Database RZAUsers

Column	Data Type	Use	Info
UserID	Integer	Index for database	Auto-Increments, Primary Key
Username	String	The user's name – used for bookings and formalities	
Email	String	Contact information for bookings and emergencies	Encrypted for security purposes
Password	String	Validation to enter the user's account	Encrypted for security purposes
Bookings	Integer	Sees if the user is viable for a discount	
Admin	Boolean	Checks if the user has admin privileges or not.	

Database RZAAccessibility

Column	Data Type	Use	Info
Appearance	Boolean	Determines if the appearance of the website takes on dark or light mode.	Light mode = 0, dark mode = 1
Text Size	Integer	Determines the size of the text within the website	Limited to 1-3
Voiceover	Boolean	Determines if the voiceover feature is enabled or not	On = 0, off = 1
UserID	Integer	Links the table with the relevant user	Secondary key for RZAUsers

Database RZAHotelRooms

Column	Data Type	Use	Info
RoomNum	Integer	Room number. Doubles as Index	Auto-Increments, Primary key
Size	Integer	How many people the room can host	Restricted to 1-4
Vacant	Boolean	Determines if the room is available or occupied	

Database RZABooking

Column	Data Type	Use	Info
CustomerID	Integer	Index for RZABooking	Auto-Increments
Name	String	Name of customer. Assists in user identity	
Participants	String	How many people will be booked	Restricted to 1-4
Arrival	Date	States when the customer/s are visiting the zoo	Cannot be dates that have already passed
Price	Integer	How much the booking costs. Will vary depending on number of people and discounts	Set as British Pounds, price will be determined via frontend PHP
UserID	Integer	Connects the booking with the relevant user	Secondary key for RZAUsers

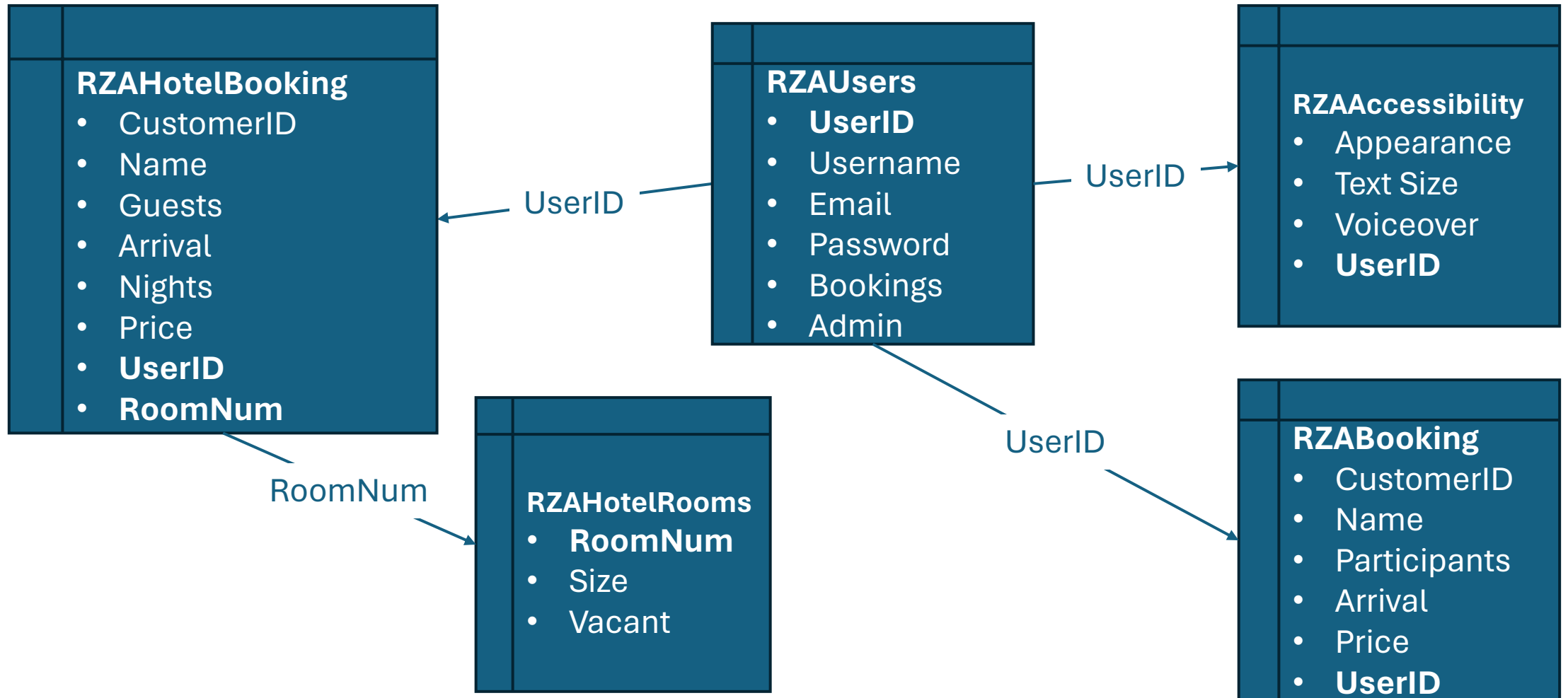
Database RZAHotelBooking

Column	Data Type	Use	Info
CustomerID	Integer	Index for RZABooking	Auto-Increments
Name	String	Name of customer. Assists in user identity	
Guests	String	How many people will be booked	Restricted to 1-4
Arrival	Date	States when the customer/s are booking the hotel	Cannot be dates that have already passed
Nights	Integer	States how many nights the customer/s are staying	Restricted to 1-10 nights
Price	Integer	How much the booking costs. Will vary depending on number of people	Set as British Pounds, price will be determined via backend PHP
UserID	Integer	Connects the booking with the relevant user	Secondary key for RZAUsers
RoomNum	Integer	States what room the customer's will be staying in	Secondary key for RZAHotelRooms




Database RZAContents

Column	Data Type	Use	Info
ContentID	Integer	Index for RZAContents	Auto-Increments
Name	String	The name of the content for sake of clarity	
Image	String	Relevant image for ease of navigation and visual appeal	
ContentType	String	Categorises what content there is	Limited to Animal, Attraction and Facility
Description	String	Short description of the content	




Database Relations






Assets - Images

Image	File Name	Used for	Reference
	Safari1.jpg	Index and Safari Page	https://www.kuoni.co.uk/alfredand/inspiration/family-safaris/
	Safari2.jfif	Safari Page	https://www.adventure-life.com/tanzania/serengeti-national-park
	Lion.webp	Image for Lion in RZAContents	https://www.four-paws.org.uk/campaigns-topics/animals/big-cats/lion-facts



Assets – Images - Continued

Images	File Name	Used For	Reference
	Meerkat.avif	Image for Meerkat in RZAContents	https://www.bbcearth.com/news/meerkats-theyre-just-like-us
	Zebra.jpg	Image for Zebra in RZAContents	https://www.kariega.co.za/blog/interesting-facts-about-plains-zebra-in-the-eastern-cape
	Giraffe.jpg	Image for Giraffe in RZAContents	https://bonamy.co.uk/posts/the-four-giraffe-species-explained




Assets – Images - Continued

Images	File Name	Used For	Reference
	Rhino.avif	Image for Rhino in RZAContents	https://www.theguardian.com/world/2022/feb/26/south-africa-grants-permits-to-hunt-10-critically-endangered-black-rhino
	Cheetah.jpg	Image for Cheetah in RZAContents	https://www.sci.news/biology/cheetahs-size-speed-12760.html
	Elephant.jpg	Image for Elephant in RZAContents	https://phys.org/news/2023-01-climate-african-elephants-desperate.html

Assets – Images - Continued

Images	File Name	Used For	Reference
	Restaurant.jpg	Image for Restaurant in RZAContents	https://www.tripadvisor.co.uk/Restaurant_Review-g315915-d8680692-Reviews-Safari_Restaurant-Fuengirola_Costa_del_Sol_Province_of_Malaga_Andalucia.html
	Shop.jpg	Image for Shop in RZAContents	https://www.longleat.co.uk/things-to-do/shopping-and-souvenirs

Assets – Images - Continued

Images	File Name	Used For	Reference
	Kiosk.jpg	Image for Kiosks in RZAContents	https://www.blackpoolzoo.org.uk/dining/restaurants/nawala
	Restroom.webp	Image for Restrooms in RZAContents	https://stivestowncouncil-cornwall.gov.uk/new-accessible-changing-places-toilet-at-porthminster/
	Hotel1.jpg	Hotel page	https://www.rhinoafrica.com/en/accommodation/safari-park-hotel-casino/25383

Assets – Images - Continued

Images	File Name	Used For	Reference
	Hotel2.webp	Hotel Page	https://www.travelandleisure.com/worlds-best/best-safari-lodges-in-africa-2022
	Hotel3.webp	Hotel Page	https://www.travelandleisure.com/worlds-best/best-safari-lodges-in-africa-2022
	Hotel.jpg	Hotel Page	https://www.tripadvisor.co.uk/Hotel_Review-g528778-d23037855-Reviews-Safari_Lodges_At_West_Midland_Safari_Park-Bewdley_Worcestershire_England.html

Assets - Links

Website	Website Link	Used For
Booking.com	https://www.booking.com/index.en-gb.html?aid=2311236;label=en-gb-booking-desktop-VMmKSr1aafFoLdSbpq0nsAS652828998418:pl:ta:p1:p2:ac:ap:neg:fi:tikwd-334108349:lp1006457:li:dec:dm;ws=&gad_source=1&gclid=EAlaIQobChMIq6Og393zhAMVKZtQBh2KPAZiEAAYASAAEgLBW_D_BwE	Hotel Page – alternative hotels
Trivago	https://www.trivago.co.uk/en-GB/lm?themelId=280&search=200-66&sem_keyword=trivago&sem_creativeid=609768548828&sem_matchtype=e&sem_network=g&sem_device=c&sem_placement=&sem_target=&sem_adposition=&sem_param1=&sem_param2=&sem_campaignid=1671152572&sem_adgroupid=126441158073&sem_targetid=kwd-5593367084&sem_location=1006457&cipc=br&cip=4419000005&gad_source=1&gclid=EAlaIQobChMI5elhd7zhAMVZZtQBh1dUgHkEAAYASAAEgJMIPD_BwE	Hotel Page – alternative hotels

Assets – Links - Continued

Website	Website Link	Used For
AirBnB	https://www.airbnb.co.uk/?c=.pi0.pk179260836_12837552276&gclsrc=aw.ds&&c=.pi0.pk179260836_12837552276&ghost=true&gad_source=1&gclid=EAlaIQobChMliM2zyd7zhAMVd4pQBh22LwHgEAAYASAAEgLPLvD_BwE	Hotel Page – alternative hotels
WWF	https://www.wwf.org.uk/	Educational Info

Style Sheets

Name	Use
CSSMain.css	Primary structure of the website
CSSLight.css	The light mode appearance for the website
CSSDark.css	The dark mode appearance for the website
CSSText.css	Assists in determining the text size for the website

Assets to use

Asset	Type	Purpose
HTML	Technology	Main structure of the webpages
CSS	Technology	Aesthetic structure and appearance of the webpages
JavaScript	Technology	Frontend coding of the webpages
SQL	Technology	Extracting data from the databases
PHP	Technology	Backend coding of extracted data
Visual Studio	Technology	Initial design of website template
Cpanel	Website	Backend PHP and SQL, along with host for databases
W3Schools	Website	Assistance in programming languages

Secure Coding Practices

- Input Validation
 - Ensures that all input from the user are of valid format to prevent vulnerabilities such as SQL injection and cross-site scripting.
- Error Handling
 - Code/Mechanisms that provide minimal info to users and logs detailed error messages for system admins.
- Data Encryption
 - Encrypt sensitive data (Passwords, Emails in both transit and at rest.

Riget Zoo Adventures

Proposal

Aim of Project

- Riget Zoo Adventures (RZA) wants a digital solution that'll provide customers with help and information about the attractions and facilities, along with providing materials to support educational visits.
- They also want the digital solution to allow customers to reserve and book tickets for the zoo, and check availabilities and book a stay at the hotel.
- The client also suggests account registrations, accessibility features, and a loyalty/reward scheme.

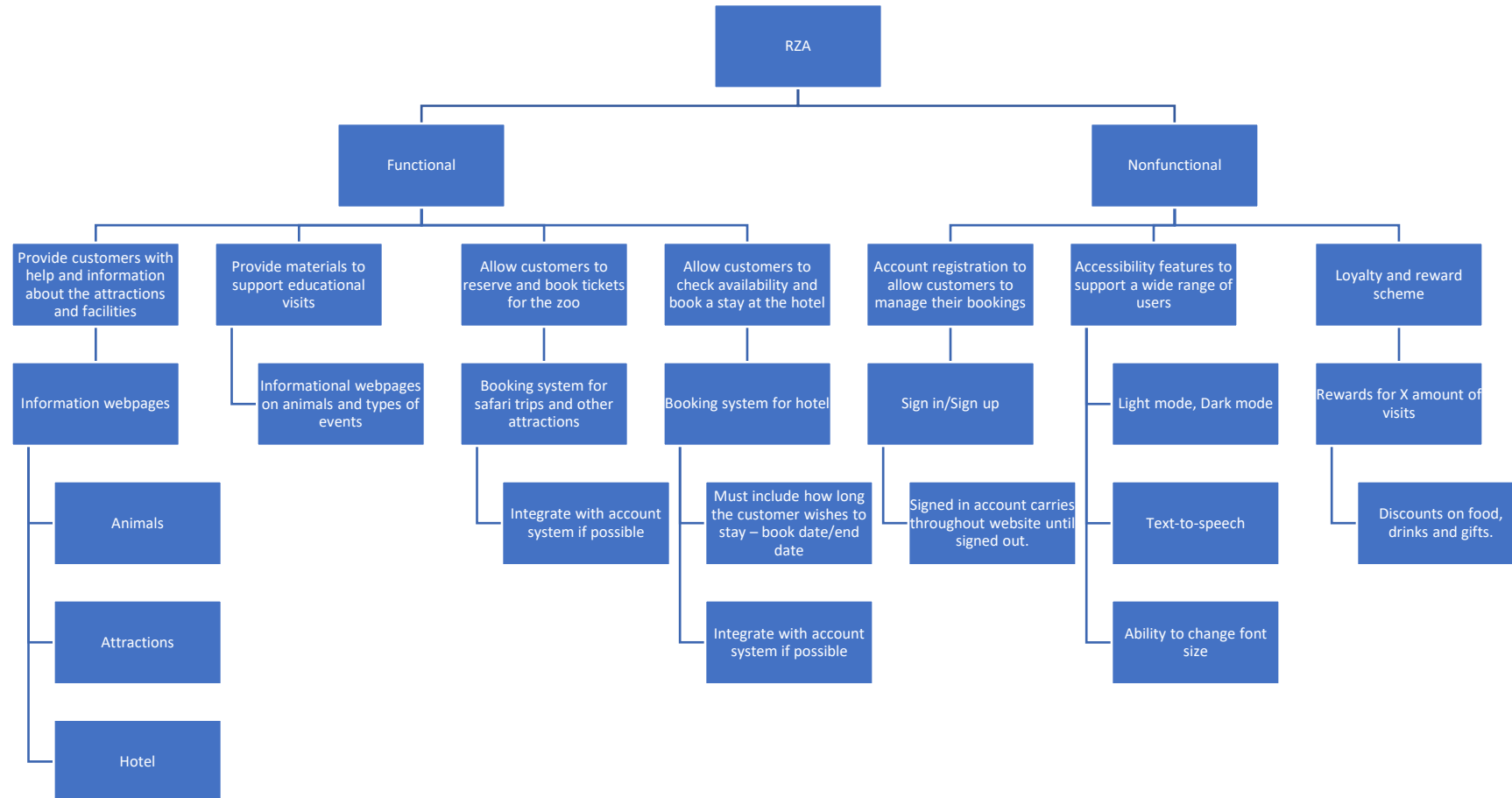
Functional Requirements

Function Requirement (FN)	Details
FN1	Provide customers with help and information about the attractions and facilities
FN2	Provide materials to support educational visits
FN3	Allow customers to reserve and book tickets for the zoo
FN4	Allow customers to check availability and book a stay at the hotel

Nonfunctional Requirements

Nonfunctional Requirement (NF)	Details
NF1	Account registration to allow customers to manage their bookings
NF2	Accessibility features to support a wide range of users
NF3	Loyalty and reward scheme

Decomposition



Key Performance Indicators

KPI are if the following are created, completed and integrated into the website:

- Information for:
 - Attractions
 - Facilities
 - Hotel
 - Events
- Educational info for animals and events
- Booking system for:
 - Safari
 - Hotel
- Account system that allows you to:
 - Log in
 - Carry account throughout website until logged out.
 - Sign up

User Acceptance Criterias

The following can be created, completed and integrated into the website:

- Accessibility features for each account
 - Light mode/dark mode
 - Text-to-speech
 - Ability to change text size
- Discount system for how many times the customer has booked
 - 10% discount for anyone who booked four or more times.

Mock Design Template


Riget Zoo Adventures						
	Account		Explore		Booking	
<div><p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</p></div> <div><p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</p></div> <div><p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</p></div>						

Colour Scheme – Light Mode

Background #FFA64D	Content #EE792B	Button #B35900	Hover #FFD7B3	Contrast #CC66FF

- Safari Style – Like a giraffe
- Both black and white writing stands out
- Hover shows when hovering over button
- Contrast can be used to indicate current route

Colour Scheme – Dark mode



Background #1F1A14	Content #EE792B	Button #B35900	Hover #4D2400	Contrast #660099
-----------------------	--------------------	-------------------	------------------	---------------------

- Dark mode for accessibility – Can be toggled by user.
- Safari Style – Like a giraffe
- White writing stands out
- Hover shows when hovering over button
- Contrast can be used to indicate current route

Key technologies

Component	Technology	Used for
Host Site	Cpanel	Access to Backend components and grants access from the web.
Programming Interface	Visual Studio	Initial structure of Frontend component
Backend: Database	MySQL	Storing customer data such as users and bookings
Backend	PHP, MySQL	Server-side operations
Frontend	HTML, CSS, Javascript	User experience – structure, appearance, and coding of the website

Databases

Database Name	Database Columns	Used For
RZAUsers	<ul style="list-style-type: none">• UserID (Integer, Auto-Increments, Primary Key)• Username (String)• Email (String, encrypted)• Password (String, encrypted)• Bookings (Integer)	User account
RZABooking	<ul style="list-style-type: none">• CustomerID (Integer, Auto-Increments)• Name (String)• No. of participants (Integer)• Arrival date (Date)• Price (Integer)• UserID (Integer, secondary key for RZAUsers)	Bookings to the Safari

Databases - Continued

Database Name	Database Columns	Used For
RZAHotelBooking	<ul style="list-style-type: none">• CustomerID (Integer, Auto-Increments)• Name (String)• No. of guests (Integer, limited to 1-4)• Arrival date (Date)• Departure date (Date, cannot be smaller than <i>Arrival Date</i>)• Price (Integer)• UserID (Integer, secondary key for RZAUsers)• RoomNum (Integer, secondary key for RZAHotelRooms)	Bookings for the hotel
RZAHotelRooms	<ul style="list-style-type: none">• RoomNum (Integer, Primary Key)• Size (Integer, limited to 1-4)• Vacant (Boolean)	Hotel rooms. Connected to RZAHotelRooms

Databases - Continued

Database Name	Database Columns	Used For
RZAContents	<ul style="list-style-type: none">• ContentID (Integer, Auto-Increments)• Name (String)• Image (String)• ContentType (String, Limited to Animal, Attraction, Facility)• Description (String)	Content for lists. Filtered for each page via ContentType Column
RZAAccessibility	<ul style="list-style-type: none">• Appearance (Boolean)• Text Size (Integer, limited to 1-3)• Voiceover (Boolean)• UserID (Integer, secondary key for RZAUsers)	Remembering user's appearance, text size, and voiceover preferences throughout the website while they're signed in.

Justification

This website is an easy way to accomplish all the client's needs and can even accomplish most of the nonfunctional requirements.

Information is held securely in a trusted host system (Cpanel), and DoS attacks can be easily mitigated.

The only data that'd be required (for the booking systems at least) are the customer's name and the date and time of which they're visiting.

There are multiple options for accessibility, such as a dark mode to reduce glare, text-to-speech, and the ability to change font size for visual impairments.

References

Coolors Palette maker

- <https://coolors.co/6b4b3e-c49e85-ffd6af-f8f4f9-bea7e5>

W3Schools

- <https://www.w3schools.com/>

Riget Zoo Adventures

Research

About Client

- Riget Zoo Adventures (RZA) is a local attraction that includes a safari-style wildlife zoo, an on-site hotel, as well as educational visits.
- RZA wants a digital solution that'll provide customers with help and information about the attractions and facilities, along with providing materials to support educational visits.
- They also want the digital solution to allow customers to reserve and book tickets for the zoo, and check availabilities and book a stay at the hotel.
- The client also suggests account registrations, accessibility features, and a loyalty/reward scheme.

Uses of Hardware and Software

Hardware	Why it's used
Computer Systems (Client)	Utility – implement interactive learning systems for customers, maintain/hold the software side of servers.
Computer Systems (Customer)	Accessibility – easily access information, bookings and events from the comfort of the customer's home.
Virtual Reality	Accessibility – view safari trips from the comfort of home. Good for people with disabilities that prevent visits to the zoo. Take West Midland Safari as an example.

Software	Why it's used
Websites	Accessibility - Easily access information, bookings and events regardless of where the customer is. (For example, Cotswold Wildlife's website)
Server database systems	Documentation – Allows the client to document and check user data such as availabilities for bookings or reviews.

Potential digital solutions

- Website
 - Can solve multiple requirements at once, like the booking, educational info, and site information.
 - Can include hotel booking system as well as links to off-site hotels for various budgets.
- VR app
 - Allows customers with Virtual Reality to access the safari from the comfort of their home
 - Does not potentially solve hotel and zoo booking requirements. Could be linked with website.

Guidelines and Regulations

Data Protection Act 2018 (GDPR)

- Ensure that any customer data used is 'used fairly, lawfully and transparently.'
- Customers must have the rights to know how their data is used, along with being allowed access to their personal data, including the deletion of said data.

Secure Coding

- Mitigate risks of Denial of Service (DoS) attacks.
- Ensure any data given by customers are secure and only accessible by the relevant customer and permitted staff.

Web Content Accessibility Guidelines (WCAG)

- Ensure that the digital solution is Perceivable (Text alternatives, audio and visual ease), Operable (Prevent Seizures, ease of navigation), Understandable (Make text readable and understandable, help users avoid and correct mistakes) and Robust (compatibility for current and future tools).

References

Cotswold Wildlife Park

- <https://www.cotswoldwildlifepark.co.uk/>

West Midland Safari and Leisure park – VR river ride

- <https://www.wmsp.co.uk/vr-ride/>

Safari Lodges

- <https://www.safari-lodges.co.uk/>

GOV.uk Data Protection

- <https://www.gov.uk/data-protection>

OWASP security cheat sheet

- <https://cheatsheetseries.owasp.org/>

W3C WCAG 2 summary

- <https://www.w3.org/WAI/standards-guidelines/wcag/glance/>

Test Name	Test Data	Expected Outcome	Actual Outcome	Notes
Database Integration 1	Database 'RZAContents,' Page 'animals.php'	Backend coding will extract relevant data from database and display them in proper format		
Database Integration 2	Database 'RZAContents,' Page 'attractions.php'	Backend coding will extract relevant data from database and display them in proper format		
Database Integration 3	Database 'RZAContents,' Page 'facilities.php'	Backend coding will extract relevant data from database and display them in proper format		
Adding data to database 1	Database 'RZABooking,' Page 'safariBooking.php'	User can add appropriate data to database		
Price calculation 1.1	Databases 'RZABooking' and 'RZAUsers,' Page 'safariBooking.php'	Properly calculates how much the booking costs, taking participants and discounts into consideration.		
Error validation 1.1	Database 'RZABooking,' Page 'safariBooking.php'	Checks if user has left any data blank. If so, asks the user to input data		
Error validation 1.2	Database 'RZABooking,' Page 'safariBooking.php'	Checks if input email is a duplicate and asks the user if they want to continue or not		
Error validation 1.3	Database 'RZABooking,' Page 'safariBooking.php'	Checks if user selected a date that has passed and tells them to try again.		
Integration testing 1.1	Database 'RZABooking,' Page 'safariBooking.php'	User can still input data after previous error validation tests		

Connection Testing 1	Databases 'RZAHotelBooking' and 'RZAHotelRooms' Page 'hotelBooking.php'	Both databases are connected via relevant primary and secondary key		
Adding data to database 2	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	User can add appropriate data to database 'RZAHotelBooking' and the program can modify database 'RZAHotelRooms' as intended.		
Availability Testing 1	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	Checks if the chosen guests have an available room in database 'RZAHotelRooms' and reacts appropriately if otherwise.		
Price calculation 2.1	Databases 'RZAHotelBooking,' and 'RZAHotelRooms,' Page 'hotelBooking.php'	Properly calculates how much the booking costs, taking guests, nights and discounts into consideration.		
Error validation 2.1	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	Checks if user has left any data blank. If so, asks the user to input data		
Error validation 2.2	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	Checks if input email is a duplicate and asks the user if they want to continue or not		
Error validation 2.3	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	Checks if user selected a date that has passed and tells them to try again.		
Integration testing 2.1	Databases 'RZAHotelBooking' and	User can still input data after		

	'RZAHotelRooms,' Page 'hotelBooking.php'	previous error validation tests		
Adding data to database 3	Database 'RZAUUsers,' Page 'signup.php'	User can add appropriate data to database		
Error validation 3.1	Database 'RZAUUsers,' Page 'signup.php'	Checks if user has left any data blank. If so, asks the user to input data		
Error validation 3.2	Database 'RZAUUsers,' Page 'signup.php'	Checks if any inputs are duplicate and asks the user to try again		
Integration testing 3.1	Database 'RZAUUsers,' Page 'signup.php'	User can still input data after previous error validation tests		
Creating Sessions	Database 'RZAUUsers,' Page 'login.php'	User sign in and create a session.		
Error validation 4.1	Database 'RZAUUsers,' Page 'login.php'	Checks if user has left any data blank. If so, asks the user to input data		
Error validation 4.2	Database 'RZAUUsers,' Page 'login.php'	Checks if any inputs are duplicate and asks the user to try again		
Integration testing 4.1	Database 'RZAUUsers,' Page 'login.php'	User can still input data after previous error validation tests		
Session testing 1	Database 'RZAUUsers,' Pages 'login.php' and 'index.php'	Session can carry between pages on the website		
Session testing 2	Database 'RZAUUsers,' Pages 'login.php' and 'index.php'	Session can be destroyed, and all session data is removed as a result		
Admin Testing	Database 'RZAUUsers,' Pages 'login.php' and 'admin.php'	Checks the 'Admin' column in 'RZAUUsers' and allows access to the page if true		

Task 2

Asset	Link	Used for	Date/s of use
W3Schools	https://www.w3schools.com/	References for the following: <ul style="list-style-type: none"> • Dropdown navbar • Dropdown form input • Reset form input • CSS Float code • PHP form validations • MySQLi RZAHotelRooms Query 	26/03/2024 27/03/2024 28/03/2024 16/04/2024 18/04/2024 19/04/2024
ChatGPT	https://chat.openai.com/c/ea0545ba-83c5-41be-a0f5-df25caba242b	References for the following: <ul style="list-style-type: none"> • Dropdown remembering inputs • Multi-form PHP input • Admin Dataset output augmentation • Admin password encryption Bug Fixing the following: <ul style="list-style-type: none"> • Content boxes • Content slides • PHP form validations • Extracting data from databases in HotelBooking • Multi-form PHP input • Admin Update Pre-fill • Admin Update ID problem • Admin password encryption Generating the following: <ul style="list-style-type: none"> • Descriptions and details for RZACContent/boxes/Hotel 	26/03/2024 27/03/2024 28/03/2024 16/04/2024 18/04/2024 19/04/2024 25/04/2024 26/04/2024

Test Name	Test Data	Expected Outcome	Actual Outcome	Notes
Database Integration 1.1	Database 'RZAContents,' Page 'animals.php'	Backend coding will extract relevant data from database and display them in proper format	Nothing was displayed. Worse: parts of the program after the content weren't showing up.	Code seems to be structured correctly. Possible syntax error. Will ask for second pair of eyes (ChatGPT)
Database Integration 1.2	Database 'RZAContents,' Page 'animals.php'	Backend coding will extract relevant data from database and display them in proper format	Data was displayed successfully, though two images were missing.	Images not formatted correctly. Will change file type of both images. Would also note that currently all content is being displayed as 'type1'. Will implement switch first.
Database Integration 1.3	Database 'RZAContents,' Page 'animals.php'	Images will be formatted correctly, and content will be displayed as both 'type1' and 'type2'	Images are correctly displayed, and content is formatted properly	Integration was successful. Moving on to next task.
Database Integration 2	Database 'RZAContents,' Page 'attractions.php'	Backend coding will extract relevant data from database and display them in proper format	Relevant data was extracted and properly formatted	Integration was successful. Moving on to next task.
Database Integration 3.1	Database 'RZAContents,' Page 'facilities.php'	Backend coding will extract relevant data from database and display them in proper format	Relevant data was extracted, but some images didn't properly show.	User error with the database data. Will be an easy fix.
Database Integration 3.2	Database 'RZAContents,' Page 'facilities.php'	Backend coding will extract relevant data from database and display them in proper format	Relevant data was extracted and properly formatted	Integration was successful. Moving on to next task.
Adding data to database 1.1	Page 'safariBooking.php'	Form properly posts and input relevant data	Data is not received	Form did not have the 'post' method included. Problem sorted.
Adding data to database 1.2	Page 'safariBooking.php'	Checks if the inputs in the forms are empty or not and displays an error message.	Form inputs didn't process properly	Syntax error: code was \$POST instead of \$_POST. Problem sorted.
Adding data to database 1.3	Database 'RZABooking,' Page 'safariBooking.php'	Properly inserts data into database	Works correctly	Inserting data was successful, but user cannot see the cost of

				the booking. Will be the next task.
Price calculation 1.1.1	Database 'RZABooking', Page 'safariBooking.php'	Javascript properly calculates how much the booking costs, taking participants into consideration and displaying it in real time.	Calculation is made but not in real time.	Problem is not entirely apparent. Will investigate further.
Price calculation 1.1.1	Page 'safariBooking.php'	Javascript properly calculates how much the booking costs, taking participants into consideration and displaying it in real time.	Calculates and displays correctly.	Testing Successful. Moving on to next task.
Price calculation 1.2.1	Database 'RZABooking', Page 'safariBooking.php'	PHP properly calculates how much the booking costs, taking participants into consideration and inserting it into the database alongside the rest of the data.	Calculates and inserts into database correctly	Coding successful. Moving on to next task.
Error validation 1.1	Database 'RZABooking', Page 'safariBooking.php'	Checks if user has left any data blank. If so, asks the user to input data	Works correctly	Testing successful. Moving on to next task.
Integration testing 1.1	Database 'RZABooking', Page 'safariBooking.php'	User can still input data after previous error validation tests	Works correctly	Booking system for the safari is fully operational. Moving on to next task.
MySQL Query testing 1.1	Database 'RZAHotelRooms'	Query can extract 1 data set that matches parameters	Works correctly	This SQL query will be the backbone of the hotel booking system. Glad to see it works.
MySQL Query testing 1.2.1	Database 'RZAHotelRooms', Page 'HotelBooking.php'	PHP on webpage can execute the SQL correctly	Entire webpage crashes	Another Syntax error. Problem solved.
MySQL Query testing 1.2.2	Database 'RZAHotelRooms', Page 'HotelBooking.php'	PHP on webpage can execute the SQL correctly	Works correctly	Works as intended. Moving on to next task.
Adding data to database 2.1	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	User can add appropriate data to database 'RZAHotelBooking' and the program can modify database 'RZAHotelRooms' as intended.	Database was not added or updated	Unknown. Will investigate
Adding data to database 2.1	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	User can add appropriate data to database 'RZAHotelBooking' and the program can modify database 'RZAHotelRooms' as intended.	Data was added to one database but not updated in the other.	Was able to fix last problem. This issue might be similar.
Availability Testing 1	Databases 'RZAHotelBooking' and	Checks if the chosen guests have an available	Sends user to	Hotel Booking system is almost complete.

	'RZAHotelRooms,' Page 'hotelBooking.php'	room in database 'RZAHotelRooms' and reacts appropriately if otherwise.	appropriate page, just as intended.	
Price calculation 2.1	Databases 'RZAHotelBooking,' Page 'hotelBooking.php'	Properly calculates how much the booking costs, taking guests and nights into consideration.	Works as intended	Booking system complete. Moving on to error checking.
Error validation 2.1	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	Checks if user has left any data blank. If so, asks the user to input data	Works as intended	Error checking – and the whole of hotel booking – is fully coded. Moving on to final tests
Error validation 2.2	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	Checks if user selected a date that has passed and tells them to try again.	Not Applicable	Javascript has made this test unnecessary.
Integration testing 2.1	Databases 'RZAHotelBooking' and 'RZAHotelRooms,' Page 'hotelBooking.php'	User can still input data after previous error validation tests	All works as intended	Hotel Booking webpage is complete. Moving on to next task.
Table implementation 1.1	Database 'RZABooking', Page 'adminSafari.php'	Data is displayed in a table.	Programs says that no data was available.	Another Syntax error. Problem solved.
Table implementation 1.1	Database 'RZABooking', Page 'adminSafari.php'	Data is displayed in a table.	Data is displayed in an unformatted table.	Lack of table format expected – Cpanel doesn't exactly like CSS. Should hopefully fix itself soon. Will check at a later date.
Table implementation 1.1	Database 'RZABooking', Page 'adminSafari.php'	Data is displayed in a formatted table.	Data is displayed correctly.	Figured a new key input that solved the CSS problem. Will be handy in future developments.
Filter check 1.1	Database 'RZABookings', Page 'adminSafari.php'	User can filter how much data is displayed	Whole webpage disappeared .	Definitely not supposed to happen. Thankfully no long-term issues. Will investigate further.
Filter check 1.2	Database 'RZABookings', Page 'adminSafari.php'	User can filter how much data is displayed	Works correctly	Previous was User error: the program called a function that didn't exist. Said function was implemented and now the program works correctly.
Input check 1.1	Page 'adminSafari.php'	Webpage can differentiate what form was submitted	Webpage could not.	Another syntax error. Problem solved.
Input check 1.1	Page 'adminSafari.php'	Webpage can differentiate what form was submitted	Works correctly	Page can differentiate between two forms. This was tested on one form though. Will test on the other form.
Input check 2.1	Page 'adminSafari.php'	Webpage can differentiate what form	No output	Form code was missing several features.

		was submitted by outputting the input		Relevant code was implemented.
Input check 2.2	Page 'adminSafari.php'	Webpage can differentiate what form was submitted by outputting the input	Output successful	Whole program can now differentiate between the two forms. Moving on to next task.
Deletion check 1.1	Database 'RZABooking', Page 'adminSafari.php'	User can delete a dataset from the database	Code did not function.	Cause unknown. Will investigate.
Deletion check 1.2	Database 'RZABooking', Page 'adminSafari.php'	User can delete a dataset from the database	Deletion successful	Code was missing. Said code was implemented successfully and now the function works as intended.
Error validation 3.1	Database 'RZABooking', Page 'adminSafari.php'	Checks if the dataset is present and tells the user if otherwise.	Received two errors.	Wrong variable was used in the PHP code. Now works as intended.
Deletion check 2	Databases 'RZAHotelBooking' and 'RZAHotelRooms', Page 'adminHotel.php'	User can delete a dataset from the RZAHotelBooking database, and the program will update the relevant room in RZAHotelRooms.	Deletion and update successful.	Works as intended. First try as well. Moving onto next task.
Deletion check 3.1	Database 'RZAContents', Page 'adminContent.php'	User can delete a dataset from the database	Error on line 64	SQL was searching for the wrong data. Problem has been solved.
Deletion check 3.2	Database 'RZAContents', Page 'adminContent.php'	User can delete a dataset from the database	Deletion successful	Works as intended. Moving on to next task.
Input check 3.1	Page 'adminContentAdd.php'	Data is inputted correctly.	All but image was inputted correctly	The PHP code for image was using an old variable of when I copied the code over. Problem has been solved.
Input check 3.2	Database 'RZAContents', Page 'adminContentAdd.php'	Data is inserted into database and is displayed in adminContents and the relevant Content page.	Data successfully inserted and displays correctly.	Code functions properly. Moving on to next task.
Pre-fill check 1.1	Database 'RZAContents', Pages 'adminContent.php' and 'adminContentUpdate.php'	adminContentUpdate.php should pre-fill the relevant inputs depending on the ID in adminContent.php	Pre-fill unsuccessful.	A bunch of missing and unassigned variables. Should be able to rectify.
Pre-fill check 1.2	Database 'RZAContents', Pages 'adminContent.php' and 'adminContentUpdate.php'	adminContentUpdate.php should pre-fill the relevant inputs depending on the ID in adminContent.php	All but description was pre-filled	The description input field is different to all the other input fields. Simply needs some code reshuffled and all should be good.
Pre-fill check 1.2	Database 'RZAContents', Pages 'adminContent.php' and 'adminContentUpdate.php'	adminContentUpdate.php should pre-fill the relevant inputs depending on the ID in adminContent.php	Pre-filled successfully	The inputs are pre-filled for the user's convenience of updating the dataset. Just need to

				finish the rest of the code.
Update check 1.1	Database 'RZAContents', Pages 'adminContent.php' and 'adminContentUpdate.php'	Form in adminContentUpdate.php can update chosen dataset from adminContent.php	ID not recognised	The ID is not being passed through the form. Will investigate.
Update check 1.2	Database 'RZAContents', Pages 'adminContent.php' and 'adminContentUpdate.php'	Form in adminContentUpdate.php can update chosen dataset from adminContent.php	ID still not recognised	The ID seems to only pass through the form in adminContentUpdate.php. Why, I still don't know, but I am getting to the bottom of the problem.
Update check 1.3	Database 'RZAContents', Pages 'adminContent.php' and 'adminContentUpdate.php'	Form in adminContentUpdate.php can update chosen dataset from adminContent.php	Successfully Updated.	The ID finally passes through the form and updates the selected dataset. Moving on to next task.
Integration Testing 4.1	Database 'RZAContents', Page 'adminContent.php'	Quantity filter still functions.	Quantity filter still functions.	Test Successful. Moving on to next task.
Integration Testing 4.2	Database 'RZAContents', Pages 'adminContent.php' and 'adminContentAdd.php'	Add a dataset still functions.	Add a dataset still functions.	Test Successful. Moving on to next task.
Integration Testing 4.3	Database 'RZAContents', Pages 'adminContent.php' and 'adminContentUpdate.php'	Update dataset still functions	Update dataset still functions	Test Successful. Moving on to next task.
Integration Testing 4.4	Database 'RZAContents', Page 'adminContent.php'	Delete dataset still functions	Delete dataset still functions	Admin Content section is all functional.
Appearance testing 1.1	Page 'accessibility.php'	Appearance of website changes depending on user's input.	CSS does not function.	Needed to echo the relevant variable for the CSS to function. All works properly now.
Error validation 4				
Adding data to database 3	Database 'RZAUsers', Page 'signup.php'	User can add appropriate data to database		
Error validation 5.1	Database 'RZAUsers', Page 'signup.php'	Checks if user has left any data blank. If so, asks the user to input data		
Error validation 5.2	Database 'RZAUsers', Page 'signup.php'	Checks if any inputs are duplicate and asks the user to try again		
Integration testing 3.1	Database 'RZAUsers', Page 'signup.php'	User can still input data after previous error validation tests		
Creating Sessions	Database 'RZAUsers', Page 'login.php'	User sign in and create a session.		
Error validation 6.1	Database 'RZAUsers', Page 'login.php'	Checks if user has left any data blank. If so,		

		asks the user to input data		
Error validation 6.2	Database 'RZAUsers,' Page 'login.php'	Checks if any inputs are duplicate and asks the user to try again		
Integration testing 4.1	Database 'RZAUsers,' Page 'login.php'	User can still input data after previous error validation tests		
Session testing 1	Database 'RZAUsers,' Pages 'login.php' and 'index.php'	Session can carry between pages on the website		
Session testing 2	Database 'RZAUsers,' Pages 'login.php' and 'index.php'	Session can be destroyed, and all session data is removed as a result		
Admin Testing	Database 'RZAUsers,' Pages 'login.php' and 'admin.php'	Checks the 'Admin' column in 'RZAUsers' and allows access to the page if true		

Task 3a

Riget Zoo Adventures
Exam – Task 3A

Non-Technical

Total Responses: 7

Avg time to complete: 04:04

What do you like about the website's aesthetics?

information page looks appealing
beautiful
I like pictures, but I would change about of information, because it's difficult to read it
like the colour
i like the colours chosen
Simplicity
Clear colour scheme and a dark mode.

All responses are positive over the style of the website, mostly about the colour scheme. Only one suggests changing the amount of information, as they find it difficult to read. Here I agree: the information in the content pages – especially about the animals – are too blocky. Some formatting might break it up into readable chunks.

How was navigation around the website?

fine
Good
it's really good
it was decent
easy
Easy
Very easy!

All responses are positive about the navigation. Good to see that the dropdown navbar design is accepted, though I have noticed that no proper link to the home page is available. Should be a simple thing to add to the navbar.

What do you think about the ‘Explore’ pages?

its informative and has all the information needed
Good
it looks really nice and works properly
i liked it
too much text
They look good
Good but the contrast wasn't easy to read on the yellow background (it was good in dark mode).

Most responses about the explore pages are positive, but two stand out: too much text and too much contrast. As established previously, the text problem can be solved with some formatting. As for the contrast, I don’t see the problem. Not entirely at least: the yellow is indeed light, but not light enough to hinder the text. If it was better in dark mode, that’s more incentive to have the appearance of the website carry throughout the webpages for more ease.

What booking systems did you check out?



Not much here to review, but it’ll allow for better insight in the following question.

How were the booking systems?

they are fine I found no bugs
Good, but nothing happened after i clicked the button
it works properly
good
simple and easy
They were usable and worked so good
Easy to use.

For the booking systems, all respondents gave a positive answer. Most were about the simplicity and the useability of the webpages, meaning the program was successful on those parts.

However, one respondent has mentioned a bug. Thanks to the previous question, I know this user only checked out the Hotel booking page, so I know that there is a potential error within that webpage that will need to be investigated.

What did you prefer: Light mode or Dark mode?

● Light	2
● Dark	3
● Both	2
● Neither	0



The responses to this question are pretty even, though users like the dark mode better than the light mode by a one-point difference. This is unfortunate due to dark mode only currently being accessible via the accessibility page. More of a reason to apply it to the other pages.

What do you like about the admin system?

the information is all there and the staff would be able to see all the booking that they have
good colour
was useful and gave the admins the data they need
It works
I couldn't work out how to access it because the password was different.

The responses for the admin system are positive and most respondents applaud how much the admins will be able to access. However, there is one response that states they weren't able to access the webpage due to password problems. I did supply the password on the same page for this preview, so there shouldn't have been an issue. Still, I will need to investigate.

One liked the colour scheme. The wrong question, and the colour scheme is all the same, but I appreciate the response.

Were there any bugs that you encountered while running the website?



Over half of the respondents didn't encounter any bugs, which is a good sign. Those who did have put in what bugs they encountered in the following question.

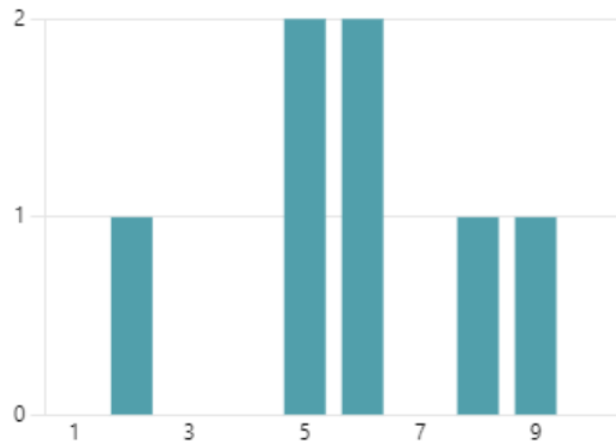
What was the bug/s?

couldn't book
How can I do dark mode?I couldn't find it
When I went to the admin page, it asked if I wanted to translate it from Dutch. I think you need to specify the language in the HTML tag, if you haven't already.

Going down the list: The problem with the booking website is from the same person who had an issue with the hotel booking webpage. This thankfully narrows down the search for whatever the bug might be when I investigate. The second is more user error, though it may have been beneficial to point where the user can change the appearance of the website. The third is a problem I've noticed as well, and the respondent has also pointed out a potential solution. Should be an easy fix.

How would you rate the website?

5.86
Average Rating



The average rating, as shown, is 5.86, with most ratings being either a five or a six. An expected rating, though I'm concerned about the one rating of two. The user who did so answered everything else positively and didn't encounter any issues either. Therefore, this user's responses don't represent the rating they gave, and thus might be unreliable.

If the rating was removed, the average rating would jump up to 6.5, which is even more positive than expected. The following question may help in improving this rating.

Any final thoughts or potential improvements?

the signup page has no form to sign up so I can't login without an account
work more on the back-end of your prototype
I would change amount of information
no
The dark mode only works on the accessibility page
More contrast in light mode. The dark mode didn't seem to carry across onto the other pages so I think you should change that.

Of these final thoughts, four major points stand out: the non-existent account pages, the backend databases, the abundance of information and the appearance of the website.

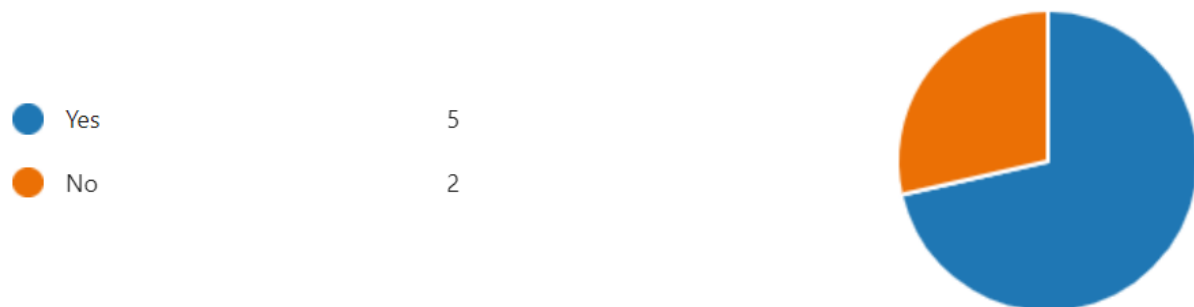
The login and signup pages are not implemented, though the website still functions without it. Still, the bookings will need to have the bookers' emails to function more efficiently, so including that account section will be a heavy improvement. Fortunately, I do have the foundations for the account pages ready to go. All that needs to be done is create the webpages themselves and establish the session networks.

The backend of the website might need polishing, especially if I want to implement the account pages. The databases will need to carry a new primary key (UserID) to connect the accounts up to bookings, appearances and more.

The amount of information has been noted multiple times in the form already. As established, some formatting might break the text down into readable chunks, or maybe a different colour to the light mode. Regardless, this should be an easy thing to solve.

As for the appearance, I understand that dark mode is currently only accessible from the accessibility page. Once the account system has been established, I should be able to carry the dark mode across all the page, which was the intention. In summary, most of the suggested improvements rely on the account system to be up and running, so that must be the priority.

Would you recommend this to another customer?



71.4 percent of respondents would recommend the website to another customer. The two who wouldn't recommend both gave positive answers, one being the two-star rater. Neither have made it clear on why too. While it would be understandable to not account for both those responses, removing 28.6 percent of the responses might not bode well for the form.

Summary

Despite the two abnormal responses, the outlook of the prototype is quite positive. The issues that have been noted include the content being unreadable, a bug in the hotel booking page, and dark mode not carrying between webpages. Most of these problems can be looked at and should be easily solvable. Other features have the foundations to start building. All that matters is implementing the account system so that these features can function.

Technical

Total Responses: 4

Avg time to complete: 06:28

How have the databases been handled?

I think the way that you have handled the page content in the database was very unique. Some of the databases are unused currently tho so pose a security risk
Really well
I like the the database managements especially having an unique id in most tables to make the data easily manageable
Overall good, multiple table is create to keep the record of Room detail, Room Booking, and site content.

Overall, the respondents believe that the databases have been handled well, though one notes the security risk of the unused databases. While I'm unsure if those databases can prove a danger, I'd rather not risk it. It's imperative that those databases are used within the program very soon to avoid exploitation of this potential weakness.

Other than that, most of the users like what was done with RZAContents. It's a unique way of displaying data, and more efficient than manually adding to the content pages. They also applaud the unique IDs in each table, which helps with management in the admin pages.

What do you think of the admin system?

Its good, i like how it has 3 different functionalities
I like it, it's displayed really nicely
I like all the easy to use systems built in to the admin system wish there was a way to navigate between admin pages without having to log back in
Good. The admin can take control of removing tours and hotel bookings. It would be even better if the admin had the ability to modify the items mentioned above.

Thoughts on the admin system are positive as well. They like how you can modify and delete data, including adding new data to the content database. There are only two issues: The first is a complaint about having to log in multiple times. While I admit it can be frustrating, I think it's a necessary evil. Any user can hijack the administrator's device and log into the admin system and mess things up if that 'feature' was removed.

The second, I agree with. Allowing administrators to modify the contents of not only RZAContents, but also safari and hotel bookings too, would allow admins to change the date of bookings or swap the hotel room. And since the necessary code already exists, a few modifications and you can simply copy the code over.

How well does the website function?

Extremely well	0
Somewhat well	4
Neutral	0
Somewhat not well	0
Extremely not well	0



It's good to see all respondents believe the website functions somewhat well. I expected no one might input extremely well but didn't expect a 100% positive response. Their explanations are below.

Can you explain how/why?

the bits that work, work well other bits are just blank
It looks amazing and feels like a real website, booking works which is good, I just wish I didn't have to pardon your dust so much, that is a very smart way to have WIP parts of the website though, very on theme.
All the features that have been added are easy to use, the dark mode only works for that page. good mobile responsiveness except for buttons on admin page.
It would be better if file upload is allowed for the admin to upload images for the content. The lack of prepared statements causes errors when posting special characters. The booking system doesn't check for duplications. The hotel booking system doesn't show the number of nights correctly. (admin view)

While most of the explanations are somewhat positive, they don't hesitate to point out problems. One such problem is the lack of pages – mostly the sign-up and login pages. This is expected and will be solved when the account system is established.

Another is dark mode not carrying between pages. Another expected problem, and one that can also be solved when the account system is made. It's also good to hear that mobile responsiveness works somewhat well.

The fourth response brings up a few points: File upload would definitely be better for selecting the image in the content pages of admin, I was expecting the anti-sql to solve the issue with the special characters, so that'll need to be looked at; duplicates will be checked once the account system is up and running – the UserID can be checked for all the bookings a user made – and I'm glad the user pointed out the variable error in the hotel bookings page of admin. My best guess is that the table row is outputting the wrong variable, which will be a quick and easy fix.

What do you think of the content algorithm (Shown here)?

```

<?php include 'connect.php';
//extract data
$sql="SELECT * FROM `RZAContents` WHERE `ContentType` = 'Animal'";
$result=mysqli_query($conn,$sql);

$type = "type1";//set type as type1

//checks if data was extracted
if (mysqli_num_rows($result)> 0){
    echo " Data Successfully extracted";
    //start content slide
    while ($row=mysqli_fetch_assoc($result)){
        echo"
            <main class='".$type."'>
                <h2>".$row["Name"]."</h2>
                <p><img src='".$row["Image"]."'>".$row["Description"]."</p>
            </main>
        ";
        switch($type){
            case "type1":
                $type = "type2";
                break;
            case "type2":
                $type = "type1";
                break;
        }
    }
}else{
    echo"<span style = 'color:red;'>No data available.</span>";
}
?>

```

the picture is hard to read, other than that it all looks good

This algorithm shows a good understanding of processes and functions, I would add 1 or 2 extra comments saying what it does as a whole

It is an effective way of displaying information

Overall, the algorithm effectively retrieves, displays, and cycles through 'Animal' content from the database, providing a dynamic and engaging user experience.

Other than the one user that had trouble reading it (That's a problem with the form, not the program), reviews are good. They all agree that it's affective at doing what it does, though one has noted that a few more comments could be added. I think so as well – a few of the vital parts of the algorithm aren't commented and explanations of what each part of the algorithm does will help any third-party programmers in understanding it.

What do you think of the real time algorithm?

```

<script>
  //Limits the date input to the current date minimum
  var currentDate = new Date().toISOString().split('T')[0]; //Get current date

  document.getElementById('date').setAttribute('min',currentDate); // Set min attribute of date input to current date


const numInput = document.getElementById('number');
const priceInput = document.getElementById('price');
const nightInput = document.getElementById('nights');

// Function to calculate total cost in real time - separate from PHP code
function calculateTotal() {
  // Parse values from input fields
  const num = parseFloat(numInput.value);
  const cost = 45;
  const nightnum = parseFloat(nightInput.value);

  // Calculates total cost
  const total = num * nightnum * cost;

  // Updates price input field with calculated total.
  priceInput.innerText = isNaN(total) ? '' : 'Price: £' + total.toFixed(2); // Display 2 decimal places
}

// Calls calculateTotal initially to ensure the total is calculated on page load
calculateTotal();

// Listens for input event on numInput and calls calculateTotal
numInput.addEventListener('input', calculateTotal);
nightInput.addEventListener('input', calculateTotal);

</script>

```

Awesome Sauce
Very good for the user experience.
the JavaScript code dynamically calculates the total cost based on user input for the number of items, price per item, and number of nights. It ensures that the total cost is updated instantly as the user modifies the input fields, providing a seamless and interactive experience. Additionally, the script limits the date input to the current date, enhancing the usability and accuracy of the booking process. This real-time functionality enhances user satisfaction by providing immediate feedback and reducing the need for manual calculations.

One user didn't give their thoughts on the algorithm (Somehow, despite the question being a required one). This is the same user that had trouble looking at the last algorithm, so I'll assume they had the same issue here.

Other than that, the responses about the code are positive as well. They all agree that the algorithm is good for the user experience, providing immediate and accurate feedback (hence the algorithm's name) alongside reducing the need for manual calculations.

What do you think of the booking algorithm?


```

<?php include "connect.php"; //connects to database

$nameErr = $dateErr = "<br>"; //Resets variables on page restart
$name = $number = $date = $cost = "";
$success = 0;

if ($_SERVER["REQUEST_METHOD"] == "POST") { //if the submit button was clicked
    if (empty($_POST["name"])) { //checks if all inputs are filled in. Number is the exception - cannot be empty.
        $nameErr = "Name is Required";
    } else {
        $name = test_input($_POST["name"]); //runs each variable through function
        $success = $success + 1; //increases the success variable by one
    }
    $number = test_input($_POST["number"]);
    if (empty($_POST["date"])) {
        $dateErr = "Date is Required";
    } else {
        $date = test_input($_POST["date"]);
        $success = $success + 1;
    }
    $cost = 10 * $number; //determines the cost of the booking: ticket cost multiplied by number of participants

    if ($success == 2) { //Continues if the success variable is 2 - which will only happen if all inputs are successful
        //insert query
        $sql="INSERT INTO 'RZABooking' ('Name', 'Participants', 'Arrival', 'Price') VALUES ('$name','$number','$date','$cost')";
        if($conn->query($sql)==TRUE) { //checks if the query execution was successful
            echo"<script>window.location.href='submitted.php';</script>"; //Takes you to the submitted page if successful...
            $conn->close();
        } else {
            echo "Insert Failed: ".$conn->error; //...sends you an error if not
            $conn->close();
        }
    }
}

function test_input($data) { //anti-SQL injection - relevant variables go through here.
    $data = trim($data);
    $data = stripslashes($data);
    $data = htmlspecialchars($data);
    return $data;
}

?>

```

It's very sound, would add more comments to summarise as a whole.

simple but very effective way to make bookings.

Overall, the algorithm ensures that the booking process is streamlined and user-friendly, while also providing error handling to address any issues that may arise during the process. However, it's important to note that the algorithm does not appear to handle scenarios such as checking for duplicate bookings or validating the format of the date input. Adding such features could enhance the robustness and reliability of the booking system.

This time, three responses have been inputted, the missing response belonging to the same user that had trouble reading the algorithm – meaning he probably couldn't see it properly again this time. This was another required question, that he somehow didn't answer. Don't know what witchcraft he did, but I'm impressed.

The three answers agree that the algorithm is decent, but two say it isn't without flaws. The first suggests more comments to summarize the larger algorithm, not to describe small functions. I don't really see what he means by it – there are comments both big and small to help guide the

user. The second is a critical issue, as the former of checking duplicates can and probably will cause issues (though I have mentioned a while back that adding the account system will involve me fixing this), and the latter will break the admin sorting system if the date format is not addressed. I'm not sure if other areas format their date differently, but it's worth checking and fixing just in case.

What do you think of the booking systems – both booking pages and Admin?

Works well, no issues found
They look amazing and on theme, easy to navigate to, would maybe allow the admin to stay logged in across the page until they log out
The booking is easy wish there was a similar page to admin where the user could see there bookings
The booking system is good, but it would be even better if users and admins could have additional functions such as modifying bookings. Additionally, in the hotel booking admin view, the number of nights doesn't display correctly.

The respondents like the admin system, but they have made suggestions on what to add and what to improve. The first three are already addressed issues: staying logged in with admin (keeping – necessary evil), the ability to also modify bookings (Good feature, will implement) and the overlooked error with the hotel booking not properly showing the nights (A simple case of fixing a variable).

One feature they suggested caught my interest: a page similar to admin where the user can manage their bookings – both hotel and safari. This would assist users accessibility-wise, though the idea is a moot point until the account system is added – otherwise, there'd be no way to filter the bookings by user securely enough.

How secure is the website?



Based on previous answers, I'm not surprised all the answers were heavily positive. Their reasons why are shown below.

Can you explain how/why?

Having it output the database connection on each page will cause a security risk if something goes wrong with that connection

I mean you do display the password for admin on the page which allows any user to see, I would've said what the admin password is in several planning documents and the tutorial

very little text input meaning less risk that someone could sql injection attack the site.

lack of prepare statement prevent SQL injection and Cross Site Scripting, and validation for checking user input.

Most of the answers about the security is also expected. The latter two, at least. While it is true that there is very little text input meaning less risks of SQL injection, the parts with text input are more vulnerable than I anticipated. I also didn't realise outputting the database connection for each page might cause a risk. An error log can sort out that problem – all that needs to be done is remove a part of the code.

As for the password: I did state that the password was an exam note. Not only will it be changed in the final product, the note is there for exam purposes, so that the user can access the admin pages to test it.

Did you encounter any bugs while going through the website?



It's good to know that almost no bugs were encountered. The one bug that was is displayed down below.

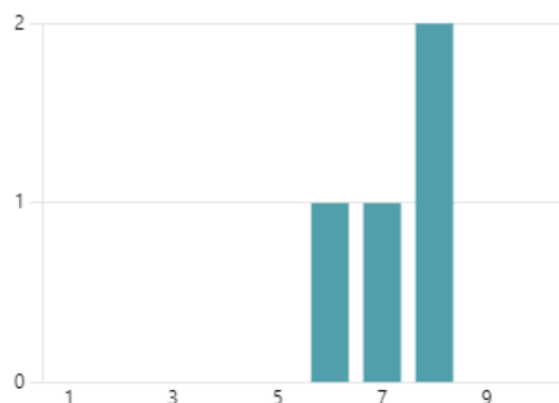
What happened?

When try to upload new content to animal: example: Name: Pikachu Image: test Type: Animal Description: Pikachu is an Electric-type Pokémon known for its yellow fur, large ears with black tips, and a tail shaped like a lightning bolt. It's one of the franchise's most recognizable and beloved characters, often depicted as a small, rodent-like creature with a cheerful and friendly demeanor. You will have the following message: Connection to database successful.Insert Failed: You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 's one of the franchise's most recognizable and beloved characters, often depicte' at line 1 Same things happen if you update the content. for example the contentID 1 the Lion. The error encountered is likely due to special characters in the description text that are causing issues with the SQL query syntax. To resolve this, you should use prepared statements to safely insert the data into the database without worrying about SQL injection or syntax errors.

To summarize: the user tried to put Pikachu into the animals content but ran into an error. They suspect it's because the program isn't designed to handle special characters. What I actually believe is happening is a mistake in quotation marks. The program will close off any sections of the paragraph if the same form of quotation mark is used (For example, if using the "" quotations, a sentence like "Good morning, world!" Said the boy, "It's a lovely day!" will display as "Good morning world! It's a lovely day!" and cause the program to crash attempting to run what it thinks is code in the middle of it). In this case, the program must think that the apostrophes are temporarily ending the paragraph and are trying to run the 'code' in the centre of it, crashing as a result. Hopefully, a simple change of quotation marks in the SQL query will resolve it. If not: it is going to be a very long day.

How would you rate the website?

7.25
Average Rating



The technical respondents have given the program a rating of 7.25 out of 10, with the program commonly being rated at 8. Taking the non-technical rating into consideration, the prototype program has a total rating of 6.4 out of 10. Not bad.

Any final thoughts?

You have done well, good job

Hi Joel :)

Some of the tables in the database are not used, such as Accessibility and Users. I guess they should be used to store user preferences. It would be better if I could have a test for a complete version.

While most are applauding the website, the last points out the unused databases again. As established previously, those databases will be used when making the account system: RZAUsers is used to store the user's details, while RZAAccessibility will be used to carry the user's accessibility preferences across the website. All that is required is implementing the code itself.

Also, hello my friend.

Summary

Not a large number of responses, but quality over quantity has helped here. They've identified a few bugs that should be easily solvable (Admin hotel's nights not displaying correctly, errors attempting to add to the content database), while others might be a little more difficult (More secure coding practices). The respondents also gave out a few more ideas that I can think on, such as a booking management page for non-admin users to check their own bookings. Unfortunately, some of those pages – alongside a few of the bugs – can't be fixed until the account system is finally implemented. But that isn't the top priority – ensuring that the backend of the website is fully secure should be the number one priority. After that, those two inert databases can be used finally to create the account system for a more user-friendly experience.

Riget Zoo Adventures

Feedback Plan

Task

- Use appropriate tools, methods and techniques to prepare demonstrations of the prototype's functionality, suitable for:
 - A technical audience (e.g. programming professionals)
 - A non-technical audience (e.g. the client, users)
- Produce a plan for how you intend to gather feedback
- Use the materials you produce to gather feedback
- Record the feedback received in a format(s) suitable for analysis.

Gathering feedback

- Observations might be too difficult – too much organising within the timeframe.
- A questionnaire form might be the most efficient way of gathering feedback. It can be sent out to several people at once, who fill it at their convenience, then hand it back.
 - Create it digitally – quicker to make and fill out, and more efficient at collating answers and responses.

Feedback forms

Form	Link	Who is seeing it	Date of Creation	Sending on	Collecting and analysing on
Non-Technical	https://forms.office.com/e/9rW5MNRz1x	Client, employees	2/05/2024	2/05/2024	7/05/2024
Technical	https://forms.office.com/e/3R39NntFh8	IT Staff	3/05/2024	3/05/2024	7/05/2024

(Timetable Amended – Both forms have been created and submitted on 02/05/2024. Should give more time for feedback)

Who to send forms to

Non-Technical

- Client
- Potential users – Client's staff, customers.
- Age groups: 16+ – various range of technical ability.
- Students with low technical abilities.

Technical

- Client's Tech group
- Peers/students with high technical abilities
- White-Hat hackers
- College Digitech lecturers

Will be sent to users via the exam spreadsheet.

What to ask

Non-Technical

- Navigation around the website
- Booking, adding, editing and deleting
- Appearance
- Accessibility's light/dark mode.
- Admin
- Multi-platform adaptation

Technical

- Database handling
- Admin
- Functionality
- Algorithms
- Booking systems
- Security

Format of Questions

Qualitative

- Lets the user expand on quantitative questions – such as bug reporting.
- Allows the user to explain in more detail.
- Lets the user submit their Final thoughts of the product.
- All will give a more comprehensive understanding on potential improvements.

Quantitative

- Can be used for simple answers and multiple-choice questions
- Can also use a rating system, for a quick summary of how much people like the website. The higher the number, the better.
- Can compare answers easier, if put into a graph. Relevant graphs include pies charts and bar charts.

A mixture of both might be beneficial – Quantitative will give more efficiency while Qualitative will give more detail.

Analysing data

- Will be handing in and analysing all forms by the end of 07/05/2024
- The site where the form will be created – Microsoft forms – can sort the data into an analysable format.
 - Most quantitative answers will be sorted into pie and bar charts. Qualitative answers will be sorted into word charts.
- After collecting the data, I'll go through each form one-by-one, analysing each question in the questionnaires separately. Will provide relevant graphs/images when necessary.
- The nontechnical form can be used to determine user acceptance, while the technical can be used to determine website security.
- Will be submitted as a PDF file.

Riget Zoo Adventures

Prototype Presentation

Non-Technical

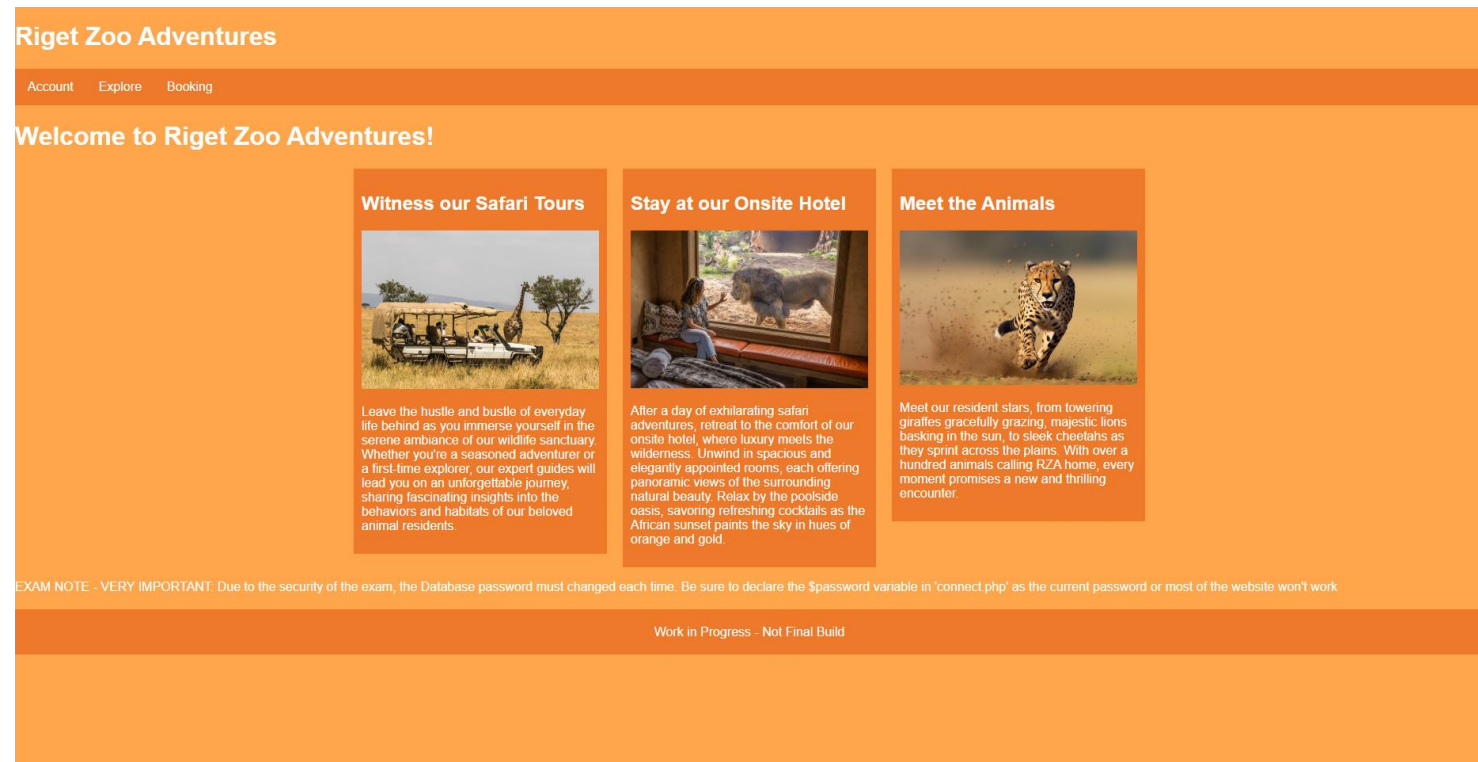
Home Page (Index)

A simple page showcasing most of the important features of the Safari Tour

Can access Account features (Such as accessibility and Admin (Will be restricted to only Admins)), Explore pages and booking pages via the dropdown navbar up top.

The boxes shown are links to specific pages, such as Attractions for the first, Hotel second and the Animals for the third.

The Exam note at the bottom is simply a technical notice should the exam need to change the password. If a majority of the website doesn't function, follow the instructions of said exam note.



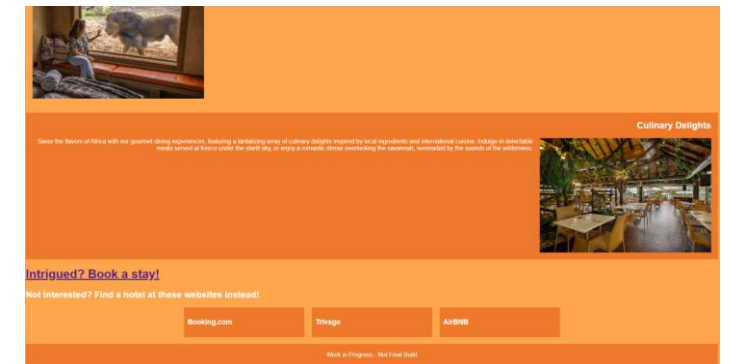
Explore (Content Pages)

The Explore dropdown has four pages: Animals, Attractions, Facilities and the Hotel.

- The Animals page showcases the animals, explaining what they are along with their preservation efforts
- The Attractions page shows the multiple attractions in the Safari, including the safari itself and the hotel.
- The Facilities page demonstrates the numerous facilities of the park, down to the toilets.
- The Hotel page showcases the onsite hotel, and at the bottom (Shown here) the users can book a stay or book at other hotels.

Each page has the same format, but the said format allows you to read the information more clearly.

The displayed information can be updated, added, or deleted from the Admin page (Shown Later)



Booking (Safari and Hotel Booking)

The two booking pages allow you to book for both the Safari and the Hotel

Each one allows you to select the name of the booking, the number of people, the date of arrival, and the number of nights you are staying (Hotel only), all calculating the price accordingly.

When you submit, the booking allows you to go to either the home page, Safari booking or Hotel booking for the user's convenience.

For the Hotel, it automatically selects a hotel room for you. If a properly-sized room isn't available, it'll tell you so and asks you to try again at a later date. The page will even repeat the other hotels from the Hotel's explore page.

Riget Zoo Adventures

Account Explore **Booking**

Connection to database successful

Book a Safari tour

Name

Number of Participants
1 ▼

Date

Price: £10.00

Submit

Work in Progress - Not Final Build

Riget Zoo Adventures

Account Explore **Booking**

Connection to database successful

Book a Hotel Room

Name

Number of Guests
1 ▼

Date

Number of Nights
1 ▼

Price: £45.00

Submit

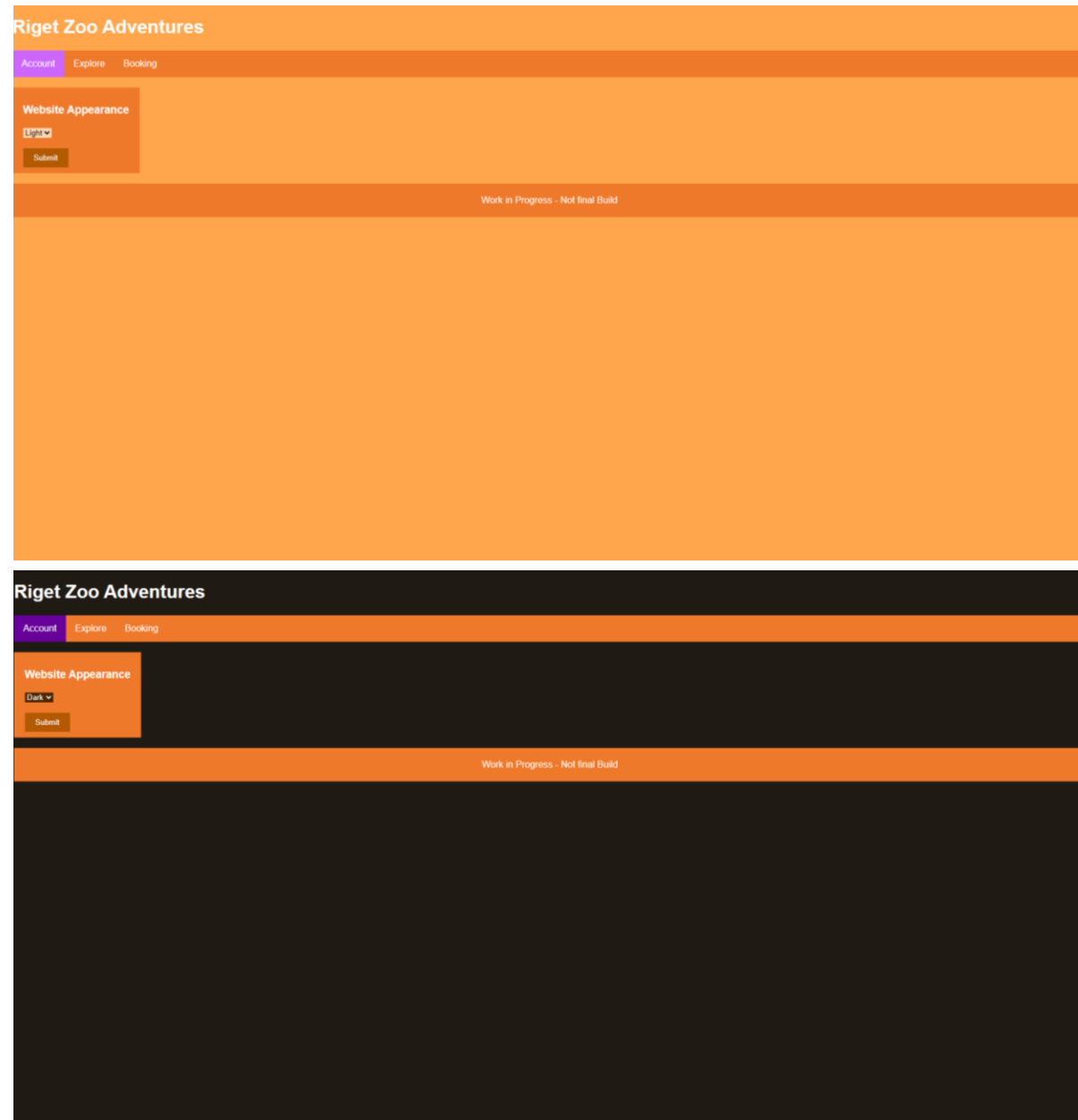
Work in Progress - Not Final Build

Accessibility

Allows you to change the appearance of the website.

As of now, the only thing the user can change currently is the Light or dark mode of the website (Both shown here). This is only available for this webpage currently.

Other intended features includes a voiceover ability, and a way to change the size of the website's text.



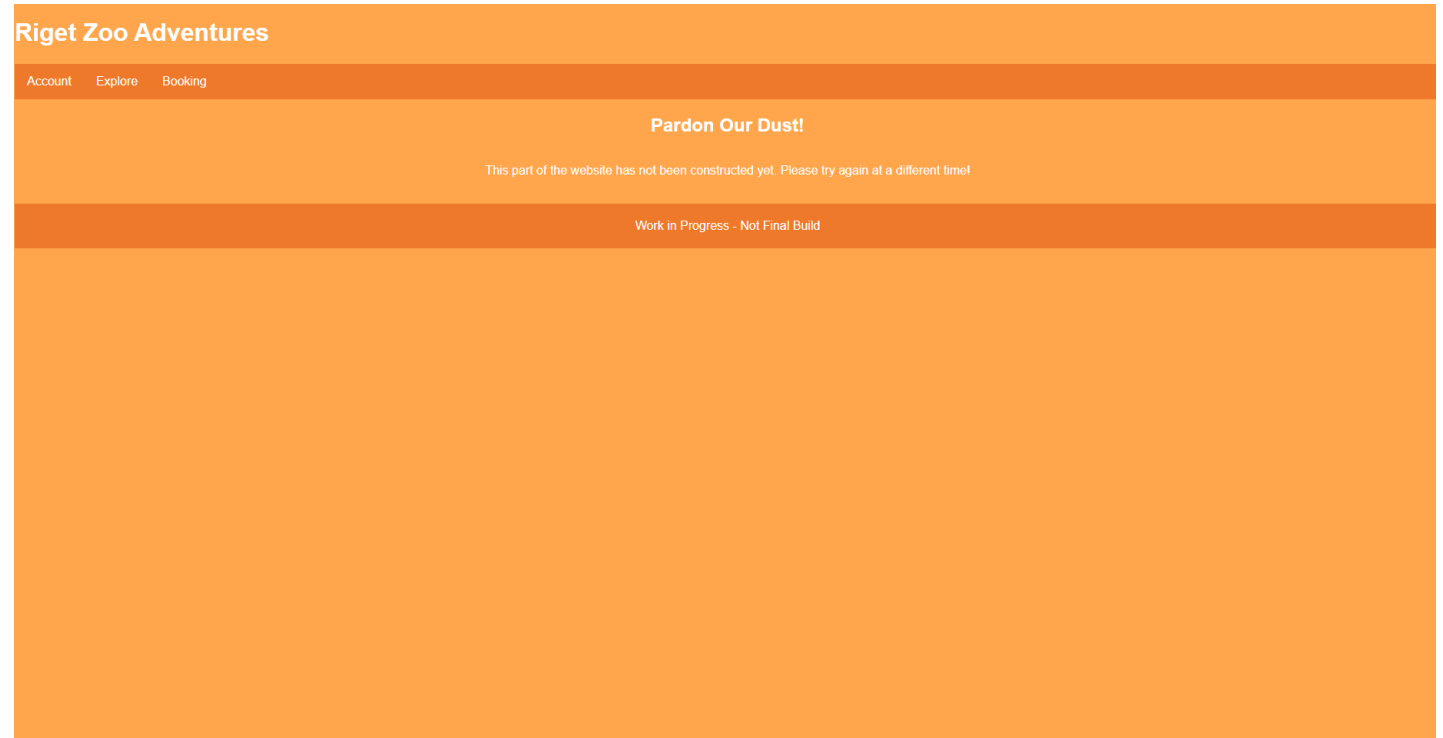
Account (Log In/Sign Up)

Currently, both the log in and sign-up feature is not added yet, though a majority of the website can still function without it.

The sign-up page would've allowed the user to create an account and would automatically log the user in that said account for convenience.

The Log in feature would've let the user log in to the website, and the user's account would carry through each webpage until logged out.

Currently though, accessing either page sends you to the Pardon Our Dust page shown here.

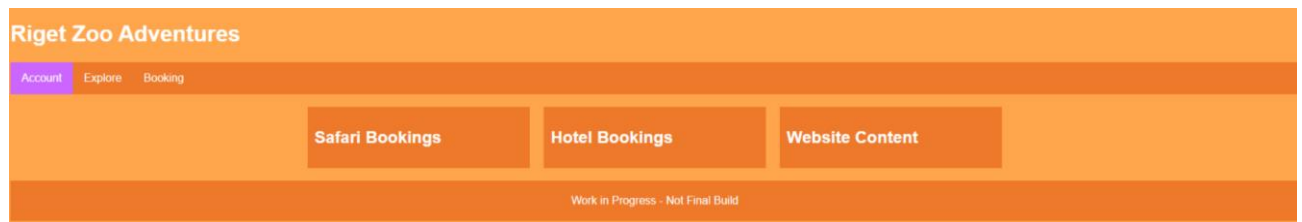
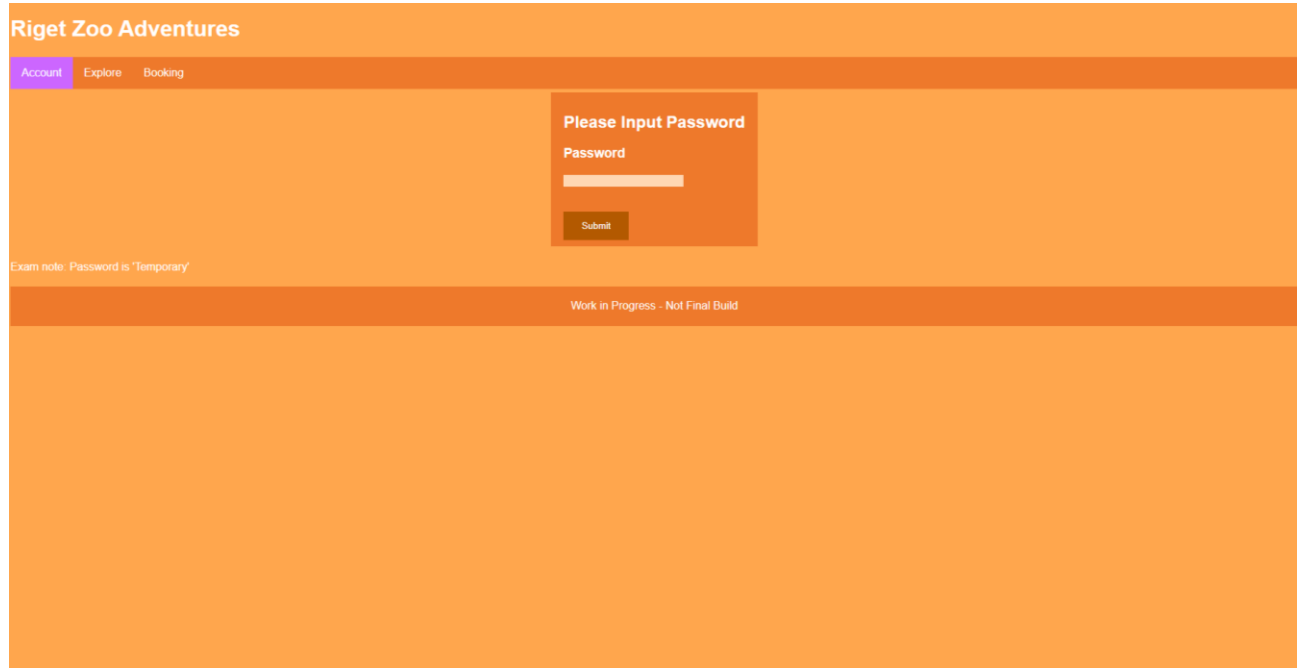


Admin (1/3)

The Admin pages (accessible by the account dropdown) are locked behind a password. Only the users that know the password can access the other pages. As of now, that password is 'Temporary.' this can be changed in the code.

When the users enters the right password, they can access all the bookings for the Safari and Hotel, along with the contents in the explore pages (All three shown later)

When the account system is added, the admin page will automatically reject any user that is not permitted, though the password page will remain for security purposes.



Admin (2/3)

The bookings for both safari and hotel can be seen via their relevant admin pages

Both shows each booking and their data in a table. The user can filter how many datasets they wish to see.

The user can also delete a dataset of the Customer ID they select. At present, this is instant and does not double-check with the user. When deleting a hotel booking, it makes the relevant room available again.

Riget Zoo Adventures

[Account](#) [Explore](#) [Booking](#)

Connection to database successful

Filter Quantity

Submit

Delete dataset

Select Customer ID

Submit

Reset

Data collected

CustomerID	Name	Participants	Arrival	Price	UserID
1	Joel Sayer	3	2024-04-25	£30	0
2	Rachel Bailey	2	2024-04-30	£20	0
3	Aden Cal	2	2024-05-30	£20	0
4	Amelia Gray	4	2024-08-10	£40	0
5	Janet Sayer	3	2024-05-09	£30	0
6	Roya Mantemom	1	2024-07-30	£10	0
7	Ulder Ravenguard	1	2024-10-13	£10	0
8	Jack Cooper	2	2024-07-04	£20	0

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Riget Zoo Adventures

[Account](#) [Explore](#) [Booking](#)

Connection to database successful

Filter Quantity

Submit

Delete dataset

Select Customer ID

Submit

Reset

Data collected

CustomerID	Name	Guests	Arrival	Nights	Price	UserID	RoomNum
2	Joel Sayer	1	2024-04-25	2024-04-25	£180	0	1

Work in Progress - Not Final Build

Admin (3/3)

The Contents of the explore pages can also be accessed here. Like the Bookings, the user can filter the quantity they see and delete a dataset of the relevant Content ID.

You can also add and update datasets from this page, both will take you to a form where you can add/update (Shown here).

Updating a dataset automatically fills the form for the user’s convenience.

Riget Zoo Adventures

Account

Explore

Booking

Connection to database successful

Filter Quantity

10

Submit

Delete Dataset

Select Customer ID

Submit

Reset

Add Content Dataset

Update Dataset

Select Customer ID

Submit

Reset

Data collected

ContentID	Name	Image	ContentType	Description
1	African Lion	Images/Lion.webp	Animal	The African lion (Panthera leo) stands as an iconic symbol of strength, beauty, and pride across the savannas of sub-Saharan Africa. With its majestic mane and powerful physique, this apex predator plays a crucial role in maintaining the balance of its ecosystem. However, African lions face significant threats, primarily due to habitat loss, human-wildlife conflict, poaching, and depletion of prey species. These factors have led to a decline in lion populations, with some estimates suggesting a reduction of up to 50% over the past few decades. To address these challenges, various conservation efforts have been implemented. This includes the establishment of protected areas and national parks where lions can thrive without human interference. Additionally, community-based conservation initiatives engage local communities in lion conservation by providing incentives for coexisting with these big cats. Furthermore, anti-poaching measures and stricter enforcement of wildlife protection laws are essential in combating illegal hunting and trade of lion parts. Educational programs and ecotourism also play a vital role in raising awareness about the importance of lion conservation and generating funds for their protection. Through these combined efforts, there's hope for securing a future for African lions, ensuring that they continue to roam the African savannas for generations to come.
3	Elephant	Images/Elephant.jpg	Animal	The African elephant (Loxodonta africana) is the largest land animal on Earth, revered for its intelligence, complex social structures, and iconic tusks. Found across various habitats in sub-Saharan Africa, these gentle giants play a crucial role in shaping their ecosystems by maintaining vegetation and creating water sources for other species. However, African elephants are under severe threat from habitat loss, human-wildlife conflict, and poaching for their ivory tusks. This has led to a significant decline in their populations, with some estimates suggesting a reduction of up to 30% over the past few decades. To safeguard African elephants, conservation efforts focus on habitat protection, anti-poaching measures, and community-based initiatives. Establishing protected areas and wildlife corridors helps preserve crucial elephant habitats and allows for safe migration routes. Moreover, engaging local communities in conservation efforts through education, alternative livelihoods, and sustainable tourism fosters coexistence and reduces human-elephant conflicts. Stricter enforcement of anti-poaching laws, along with international bans on ivory trade, aims to curb the illegal killing of elephants for their tusks. Additionally, innovative technologies such as drones and GPS tracking devices are utilized to monitor elephant movements and deter poachers. Collaborative efforts between governments, NGOs, and local communities are essential for ensuring the long-term survival of African elephants, securing their place as keystone species in Africa's ecosystems.
				The cheetah (Acinonyx jubatus) is a magnificent big cat renowned for its incredible speed and sleek, spotted coat. Native to various habitats across sub-Saharan Africa, these agile predators are built for speed, capable of reaching astounding velocities of up to 60 miles per hour in just a few strides. However, cheetahs face numerous threats to their survival, including habitat loss, human-wildlife conflict, and poaching. With their populations declining due to these challenges, conservation efforts are crucial to safeguarding the future of cheetahs. Initiatives focus on habitat

Riget Zoo Adventures

Account

Explore

Booking

Connection to database successful

Lorem Ipsum

Name

Image

ContentType

Animal

Description

Submit

Work in Progress - Not Final Build

100

Summary

A website that meets most of the asked for functional requirements.

- Provides customers with help and information about the attractions and facilities (Explore pages).
- Does not provide materials to support educational visits, though information is available
- Allows customers to reserve and book tickets for the zoo and the Safari.
- Allows customers to check availability and book a stay at the hotel.

This website partially meets non-functional requirement 2 in the accessibility webpage. The foundations for NF1 and NF3 are present, but not fully implemented.

Links

Link to the Feedback Form (Non-Technical):

- <https://forms.office.com/e/9rWSMNRz1x>

Link to the website:

- <https://wtocc.awctechnology.co.uk/OCCWT/JoelS/>

Riget Zoo Adventures

Prototype Presentation

Technical

Databases -

RZAContents

The Database for all the Content in the explore pages.

The Column ContentType sorts which page the dataset is displayed.

The database can be interacted with in adminContent.php, which allows you to update, add or delete datasets.

Currently has 13 datasets. All datasets have their image file path to 'Images/.'

Column Name	Data	Used For	Notes
ContentID	Integer	Index for database	Auto-Increments
Name	String	Header for content	
Image	String	Image file path for content	
ContentType	String	Determining where the content is displayed	Limited to Animal, Attraction and Facility
Description	String	Description for content	

Databases - RZABooking

Database used to store safari booking details.

Was intended to be connected to RZAUsers via UserID. If done so, the number of bookings the user did would've been accounted for when determining price.

The database can be interacted with in adminSafari.php, which allows you to delete any bookings.

Column Name	Data	Used For	Notes
CustomerID	Integer	Index for Database	Auto-Increments
Name	String	Showing the name booked under	
Participants	Integer	Determining how many people are booked	Limited by 1 to 4
Arrival	Date	The date of arrival	
Price	Integer	Price of Booking	Determined by base price multiplied by Participants
UserID	Integer	Secondary key for RZAUsers	Currently Inert

Databases - RZAHotelBooking

Database used to store hotel booking details. Similar to RZABooking with two new columns: Nights and RoomNum.

The database is connected to RZAHotelRooms; When booking, the form will automatically select a big enough hotel room and assign it to the dataset. The program reacts accordingly if no rooms are available.

Was intended to be also connected to RZAUUsers via UserID. If done so, the number of bookings the user did would've been accounted for when determining price.

The database can be interacted with in adminHotel.php, which allows you to delete any bookings.

Column Name	Data	Used For	Notes
CustomerID	Integer	Index for Database	Auto-Increments
Name	String	Showing the name booked under	
Guests	Integer	Determining how many people are booked	Limited by 1 to 4
Arrival	Date	The date of arrival	
Nights	Integer	Determining the number of nights the guest/s are staying	Limited by 1 to 4
Price	Integer	Price of Booking	Determined by base price multiplied by Participants and nights
UserID	Integer	Secondary key for RZAUUsers	Currently Inert
RoomNum	Integer	Secondary key for RZAHotelRooms	

Databases -

RZAHotelRooms

Database for all the rooms in the hotel.
Connected to RZAHotelBooking.

Cannot be accessed via Admin, but is
automatically updated through
adminHotel.php

The database currently has 80 datasets, 20
for each room size.

Column Name	Data	Used For	Notes
RoomNum	Integer	Index for database and the room number	
Size	Integer	Determining how many can sleep in the room	Limited by 1-4
Vacant	Boolean	Determines if the room is available to avoid a double-booking	

Databases - RZAUsers

Inert database not currently in use. Would be connected to the booking databases and RZAAccessibility (See next)

The Bookings part of the database would assist in determining the price of bookings. Five or more bookings and the user would receive a discount.

The Admin part of the dataset would determine if the user has access to the admin pages. Admin could only be granted by someone who already has admin privileges via the admin page.

While not in use, the database does have one user already inputted.

Column Name	Data	Used For	Notes
UserID	Integer	Index for database	Auto-Increments, Primary Key
Username	String	The User's name – used for bookings and formalities	
Email	String	Contact Information for bookings and emergencies	Encrypted for Security purposes
Password	String	Validation to enter the user's account	Encrypted for Security purposes
Bookings	Integer	Sees if the user is viable for a discount	
Admin	Boolean	Checks if the user has admin privileges or not	

Databases -

RZAAccessibility

Unused database that would be somewhat accessible in accessibility.php. Would also be connected to RZAUsers so that, when logged in, the appearance of the website carries throughout the webpages.

While accessibility has an example of the light and dark mode, text size and voiceover is currently not available.

Column Name	Data	Used For	Notes
Appearance	Boolean	Determines if the appearance of the website takes on dark or light mode.	Light mode = 0, dark mode = 1
Text Size	Integer	Determines the size of the text within the website.	Limited to 1-3
Voiceover	Boolean	Determines if the voiceover feature is enabled or not.	On = 0, off = 1
UserID	Integer	Links the table with the relevant user.	Secondary key for RZAUsers

connect.php

A simple but essential program that must be included in order to connect to the database.

Due to the nature of the exam, the password must be changed for security purposes. If none of the database code functions, check the password (Noted in this image)

```
<?php
    $servername = "rs08";
    $username = "wtocc";
    $dbname = "wtocc_JoelS_Data";
    $password = "AWC_Tlevel30"; //EXAM NOTE: Change this variable

    $conn = new mysqli($servername,$username,$password,$dbname);

    //check connection
    if ($conn->connect_error){
        die("Could not connect to database:" . $conn->connect_error);
    }else{
        echo"Connection to database successful.";
    }
?>
```


Content Display Algorithm

A snippet of PHP code that displays the content as shown in the explore pages.

First extracts the data from RZAContents (In this case, Animal), then prints out each result as shown here.

Every time a dataset is printed, it checks what style that dataset was using (Type1 or Type2) and swaps it around. It keeps repeating until the last dataset is printed.

This algorithm allows users to easily add new content to the contents pages – by only using the RZAContents database. Through the Admin page.

Note the connect.php at the top – the algorithm wouldn't function without it.

```
<?php include 'connect.php';
//extract data
$sql="SELECT * FROM `RZAContents` WHERE `ContentType` = 'Animal'";
$result=mysqli_query($conn,$sql);

$type = "type1";//set type as type1

//checks if data was extracted
if (mysqli_num_rows($result)> 0){
    echo " Data Successfully extracted";
    //start content slide
    while ($row=mysqli_fetch_assoc($result)){
        echo"
            <main class='\".$type.\"'>
                <h2>\".$row[\"Name\"].\"</h2>
                <p><img src='\".$row[\"Image\"].\"'>\".$row[\"Description\"].\"</p>
            </main>
        ";
        switch($type){
            case "type1":
                $type = "type2";
                break;
            case "type2":
                $type = "type1";
                break;
        }
    }
}else{
    echo"<span style = 'color:red;'>No data available.</span>";
}
?>
```

RealTime Price Algorithm

The following JavaScript determines the price for the booking and displays it in real time.

The three variables numInput, priceInput and nightInput comes from a form above. The cost variable is how much for one booking.

It is important to note that the javascript is NOT CONNECTED to PHP. The function to determine the cost in PHP is somewhere else within the program.

```
<script>
//Limits the date input to the current date minimum
var currentDate = new Date().toISOString().split('T')[0]; //Get current date

document.getElementById('date').setAttribute('min',currentDate); // Set min attribute of date input to current date


const numInput = document.getElementById('number');
const priceInput = document.getElementById('price');
const nightInput = document.getElementById('nights');

// Function to calculate total cost in real time - separate from PHP code
function calculateTotal() {
  // Parse values from input fields
  const num = parseFloat(numInput.value);
  const cost = 45;
  const nightnum = parseFloat(nightInput.value);

  // Calculates total cost
  const total = num * nightnum * cost;

  // Updates price input field with calculated total.
  priceInput.innerText = isNaN(total) ? '' : 'Price: £' + total.toFixed(2); // Display 2 decimal places
}

// Calls calculateTotal initially to ensure the total is calculated on page load
calculateTotal();

// Listens for input event on numInput and calls calculateTotal
numInput.addEventListener('input', calculateTotal);
nightInput.addEventListener('input', calculateTotal);

</script>
```

Booking Algorithm

The algorithm used to book a user into one of the two booking databases.

The algorithm shown here is for booking the Safari. Hotel Booking has additional code for selecting the hotel room.

To avoid SQL injection, there is a function that tests all the variables. All variables (received by a form in the same webpage) go through here except for number: number is determined by a dropdown box, and therefore will always be one of four inputs.

After the variables are checked if they are empty or not, a 'success' variable increases. This variable is reset every time it does not equal the given number, and the form isn't fully posted until that criteria is met.

```
<?php include "connect.php"; //connects to database

$nameErr = $dateErr = "<br>"; //Resets variables on page restart
$name = $number = $date = $cost = "";
$success = 0;

if ($_SERVER["REQUEST_METHOD"] == "POST") { //if the submit button was clicked
    if (empty($_POST["name"])) { //checks if all inputs are filled in. Number is the exception - cannot be empty.
        $nameErr = "Name is Required";
    } else {
        $name = test_input($_POST["name"]); //runs each variable through function
        $success = $success +1; //increases the success variable by one
    }
    $number = test_input($_POST["number"]);
    if (empty($_POST["date"])) {
        $dateErr = "Date is Required";
    } else{
        $date = test_input($_POST["date"]);
        $success = $success +1;
    }
    $cost = 10 * $number; //determines the cost of the booking: ticket cost multiplied by number of participants

    if ($success == 2) { //Continues if the success variable is 2 - which will only happen if all inputs are successful
        //insert query
        $sql="INSERT INTO `RZABooking`(`Name`, `Participants`, `Arrival`, `Price`) VALUES ('$name','$number','$date','$cost')";
        if($conn->query($sql)==TRUE) { //checks if the query execution was successful
            echo"<script>window.location.href='submitted.php';</script>"; //Takes you to the submitted page if successful...
            $conn->close();
        } else {
            echo "Insert Failed: ".$conn->error; //...sends you an error if not
            $conn->close();
        }
    }
}

function test_input($data) { //anti-SQL injection - relevant variables go through here.
    $data = trim($data);
    $data = stripslashes($data);
    $data = htmlspecialchars($data);
    return $data;
}

?>
```

CSS Files

Each webpage has two CSS stylesheets included: CSSMain and CSSLight. The first is a constant, while the second can be swapped out for CSSDark.

As of now, this swap is only available in accessibility.php. See RZAAccessibility for more details.

There was going to be a stylesheet for the text as well, but that hasn't been implemented yet.

File	Used for
CSSMain.css	Main structure of the website
CSSLight.css	The light mode for the website
CSSDark.css	The dark mode for the website

Links

Link to Feedback Form (Technical):

- <https://forms.office.com/e/3R39NntFh8>

Link to Website:

- <https://wtocc.awctechnology.co.uk/OCCWT/JoelS/>

Task 3b

Riget Zoo Adventures

Evaluation

Assets – Programming

Asset	Purpose	Used?	Why
HTML	Main Structure of Webpages	Yes	A necessary part of the program – it defines the structure of each webpage. Most of the website wouldn't function without HTML.
CSS	Aesthetic structure and appearance of webpages	Yes	A necessary part of the program – created two effective styles of the website. The appearance wouldn't be appealing without the CSS
JavaScript	Frontend coding of webpages	Yes	Was not essential but was important for the smaller features of the website such as the realtime price calculation and date limiter.
SQL	Extracting data from the databases	Yes	Was important for several webpages in not just extracting but updating and deleting databases. Works effectively in all the relevant pages.
PHP	Backend coding of the extracted data	Yes	Essential for the backend scripting and in using the data extracted via SQL. Works well, if not without a few hiccups.

Assets – Websites

Asset	Purpose	Used?	Why
Visual Studio	Initial Design of website template	Yes	Was important in the initial stages of the development. Created the Template of the webpages and the three CSS files. Did its sole purpose effectively.
Cpanel	Backend PHP and SQL, along with host for databases	Yes	Vital in storing the databases and also held the completed pages. Was also the latter editing site after Visual Studio done its purpose. It became the backbone of the entire website.
W3Schools	Assistance in programming languages	Yes	Was used to increase my knowledge about forms, connecting them to PHP, the dropdown boxes, and more. A few of the website's features came from references within the website.
ChatGPT	Generating nonessential content and bug fixing	Yes	An unintentional fourth website asset, but a useful one. Was used for bug fixing and generating nonessential content.

Assets – Files/Links

Asset	Purpose	Used?	Why
Images	Improve the visual style of the website	Yes	Was important to the website and also important to the RZAContent database. All but one image was used – that image had nowhere to insert into.
Links to external websites	Provides options for users	Yes	Gave the users options if they did not wish to book at the hotel. Made the website appear more professional.
ChatGPT Content	Generating nonessential content	Yes	Saved time producing content for webpages, though generated content might not be reliable.

Research Resources – Validity/Reliability

Resource	Link	Reliable?	Notes
Cotswold Wildlife Park	https://www.cotswoldwildlifepark.co.uk/	Yes	Official Zoo website – A good reference
West Midland Safari and Leisure park – VR river ride	https://www.wmsp.co.uk/	Yes	While VR was not used, it was vital at providing options during the early stages of research.
Safari Lodges	https://www.safari-lodges.co.uk/	Yes	Gave ideas for the onsite hotel. Reliable due to being an actual safari lodge.
GOV.uk Data Protection	https://www.gov.uk/data-protection	Yes	Official Government website – accountable for information they provide.
OWASP security cheat sheet	https://cheatsheetseries.owasp.org/	Uncertain	Created by security professionals, though who they are is unclear.
W3C WCAG 2 summary	https://www.w3.org/WAI/standards-guidelines/wcag/glance/	Yes	Government funded website – goes through them first.
ChatGPT	https://chatgpt.com/	No	Generated from data scraped together by AI. Not all data from the internet can be trusted.

Ethical

Databases

- Databases need to be secure – a goal that might not be fulfilled.
PRIORITY NO 1.
- Data protection act has been considered, and only certain people are allowed to access bookings. The DPA will be looked at again when the account system is established.

Copyright

- All images have been referenced on where they were acquired – not in website, but in development form.
- Will need to check for company approval on images – both internal and external.

Meeting Criteria - Functional

Functional Requirement (FN)	Details	Met?	Notes
FN1	Provide customers with help and information about the attractions and facilities	Yes	Created the 'Explore' content pages that provides information about the Animals, attractions and Facilities. Also includes the Hotel.
FN2	Provide materials to support educational visits	No	While information about endangerment and conservation was included, there was no official materials to provide.
FN3	Allow customers to reserve and book tickets for the zoo	Yes	Created the Booking webpage that allows the users to book for the safari. Also allows them to see the price. Bookings can be managed through the Admin system.
FN4	Allow customers to check availability and book a stay at the hotel	Yes	Created the Booking webpage that allows the users to book for the. Also allows them to see the price. Bookings can be managed through the Admin system.

Meeting Criteria - Nonfunctional

Nonfunctional Requirement (NF)	Details	Met?	Notes
NF1	Account registration to allow customers to manage their bookings	No	The foundations for the account system are in place, but not fully implemented. A soft copy of the Admin system can save time coding.
NF2	Accessibility features to support a wide range of users	Yes	Website has an accessibility page and an unused accessibility database. All that is available right now is a light and dark mode.
NF3	Loyalty and reward scheme	No	Was planned but requires the account system to be up and running to function.

Key Performance Indicators

Key Performance Indicator (KPI)	Details	Met?	Notes
KPI1	Information for Attractions, Facilities, the Hotel and Events	Yes	Created the Database RZAContents, which provided images and information for animals, attractions and facilities. Created a hotel webpage to provide information for said hotel. Can add, modify or delete information via the Admin system. Event info wasn't created.
KPI2	Educational info for animals and events	No	Generated quick but unreliable educational info for animals. No information for events.
KPI3	Booking System for the safari and the hotel	Yes	Created two separate pages for each form of booking. All bookings go into two different databases and can be accessed via the Admin system.
KPI4	Account system that allows you to sign up and log in.	No	Foundations for the account system was created but had insufficient time to implement it.

User Acceptance

- From the feedback forms submitted and analysed, users – both technical and non-technical – have given the website a rating of 6.4 out of 10.
- Outlook was positive on the non-technical form. User liked the colours. Admin system and booking systems but complained about content being unreadable and noted an error in the hotel booking page.
- Users of the technical form pointed out the vulnerabilities of the databases and SQL. Website might not be secure and will need to be rectified immediately. On a brighter note, they approved of the Admin system and the handling of databases.

Potential Improvements

- Account system that allows the user to sign up and log in.
- Bookings page that lets the user view and manage their bookings.
 - Will require the account system to function.
 - Can copy and edit the Admin page for efficiency.
- More secure coding – secure databases.
- Further develop the accessibility page
 - Change font size
 - Text-to-speech for visually impaired users
 - Unique to each user and carries throughout the website (Account system must function first)
- More educational information and a content page for events.
- Reward system for bookings
 - Will require the account system to function
- Virtual Reality and relevant booking.
 - Allow users to go on safari trips in the comfort of their own homes.
 - Will require research into VR systems.



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