



# Design Document

University of British Columbia Okanagan  
COSC 304 - Fall 2017

Team Members:  
Removed

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# Introduction

## 1.1 Purpose

The purpose of this document is to outline the design requirements and framework for the Perfectly Legal Wildlife Trade website using UML diagrams and SQL DDL.

## 1.2 Mission Statement

Our mission is to give everyone the opportunity to collect glorious animal parts, without having to hunt and hack them off yourself, in a perfectly legal way.

## 1.3 Executive Summary

There has always been a humongous demand for the trade of prestigious animal trophies. Unfortunately, due to the draconic and oppressive restrictions imposed by the United Nations, this noble enterprise has been forced to conduct itself through shady black market avenues. Here at the Perfectly Legal Wildlife Trade (PLWT) we seek to legitimize this trade and dispel the international stigma towards our perfectly ethical and acceptable business model.

The PLWT contacts and verifies suppliers in order to bring the finest animal parts to the consumer. Our website aims to compile and catalogue a wide array of rare and high quality biological memorabilia in order to appeal to a broad variety of needs. All of our products are acquired humanely as we only deal with the finest of poachers and smugglers.

Users can browse our exhaustive catalogue or search for their specific requirements. They can add orders to their cart, and when they checkout we have the most secure and confidential payment structure available. There is absolutely no paper trail that can connect you to our highly “legal and legitimate” business operation. We guarantee that your data will not be immediately sold upon entering it into our site.

When a user checks out, the orders in their cart are split into multiple shipments depending on the location of the product’s supplier. They are then shipped to the customer by the chosen shipping method. If the customer lives in a country that does

not permit the sale of endangered animal parts, the only shipping option available will be smuggling.

## 1.4 Implemented Features

**Implemented Features (Note: Only show rows that you have implemented.)**

Final Overall System Features	Points	% Complete	Code Files
<b>Main Page</b>			
Home page running on web server	2	100%	home.jsp
Search for a product by name	2	100%	listprod.jsp
Browse products by category	2	100%	listprod.jsp
List products (by search/browse)	2	100%	listprod.jsp
List products with image	2	100%	listprod.jsp
Page header with menu	1	100%	home.jsp
Page header shows current logged in user	1	100%	home.jsp
Dynamic product on page based on sales	2	100%	Home.jsp (product is chosen based on average review rating, not sales)
Product recommendation based on user	4	100%	home.jsp
<b>Order History</b>			
Page listing all orders for user	2	100%	listorder.jsp
<b>Shopping Cart</b>			
Add to shopping cart	2	100%	product.jsp
View shopping cart	2	100%	showcart.jsp
Update item quantity in shopping cart	1	100%	showcart.jsp
Remove item from shopping cart	1	100%	showcart.jsp
Shopping cart data validation on updates	1	100%	showcart.jsp
Improved formatting/UI (e.g. in header bar)	1	100%	home.jsp

Cart stored in database between sessions	3	100%	addcart.jsp
<b>Checkout</b>			
Checkout with customer id	2	100%	order.jsp
Checkout with payment/shipment info	2	100%	order.jsp
Checkout with data validation	2	100%	order.jsp
Multiple shipments per order supported	3	100%	orderdetails.jsp
Calculate taxes and shipping cost	2	100%	order.jsp
<b>Product Detail Page</b>			
Product detail page and item description	2	100%	product.jsp
Product detail has an image	1	100%	product.jsp
Product detail has an image from database	3	100%	product.jsp
<b><u>User Accounts and Login</u></b>			
Create user account page	2	100%	register.jsp
Create user account with data validation	2	100%	registerUser.jsp
Improved formatting/UI for create account page	2	100%	register.jsp
Login/logout	2	100%	login.jsp
Register user/Forgot password email	4	75%	register.jsp (Forgot password uses security question, not email.)
<b><u>Product Reviews</u></b>			
Ability to enter a review on a product	2	100%	addreview.jsp
Display product review on product detail	1	100%	product.jsp
Restrict to one review per user on item purchased	2	100%	addreview.jsp
<b><u>Administrator Portal</u></b>			
Secured by login	1	100%	admin.jsp

List all customers	1	100%	listcustomers.jsp
List report showing total sales/orders	1	100%	salesreport.jsp
Add new product	2	100%	addanimalpart.jsp
Update/delete product	2	50%	editproduct.jsp (can update, but not delete)
Upload a photo to file system for product	2	N/A	
OR: Upload a photo to database for product	4	75%	addanimalpart.jsp (Image upload works in eclipse browser, but not in google chrome)
Add/update warehouse, customer	2	100%	addeditcustomer.jsp
Database System			
<i>Other (add rows):</i>			
<i>Theme compatibility (Dark and Light themes implemented, Sunset and Sunrise Themes coming soon)</i>	<i>100</i>	<i>100%</i>	<i>Changetheme.jsp / usersettings.jsp</i>

## 1.5 Missing Features/Known Bugs:

### Our current design is missing the following features:

Remove Product: In our current design, admins cannot remove products from the inventory list. If we were to implement this, we would add a boolean flag to the AnimalPart table, and only list products for sale if they have the flag set to true.

Tracking Quantities of Products: In our current design, suppliers are treated as though they can supply an infinite amount of any part they supply.

Database Restore: Not currently implemented.

Sales Graph: There is currently no option to display sale data as a graph or chart.

### Current Bugs:

In the admin portal, admins are unable to add an image for a product when using a web browser. Image upload does work when using the eclipse browser.

# Domain Assumptions

## 2.1 Users

Each user account is designated as either a customer account or a supplier account. If a user requires both services then they must make two separate accounts.

### Customer

- a. A customer account will store the user's shipping address, payment information, contact information, cart, and login credentials (unique username and password).
- b. Customers can browse the available animal parts, add parts to their cart, and purchase parts when logged into their account.
- c. Customer accounts cannot sell animal parts.

### Supplier

- a. Suppliers must go through a verification process and be certified by Perfectly Legal Wildlife Trade.
- b. A supplier account will store the supplier's address, contact information, and login credentials (unique username and password).
- c. Supplier accounts cannot purchase animal parts from other suppliers.

## 2.2 Countries/Shipping

If the customer's country has strict laws regarding the selling of parts of endangered species and are unwilling to establish a deal with PLWT, then smuggling will be required to get the product from supplier to customer and an extra shipping fee will be applied.

## 2.3 Payment

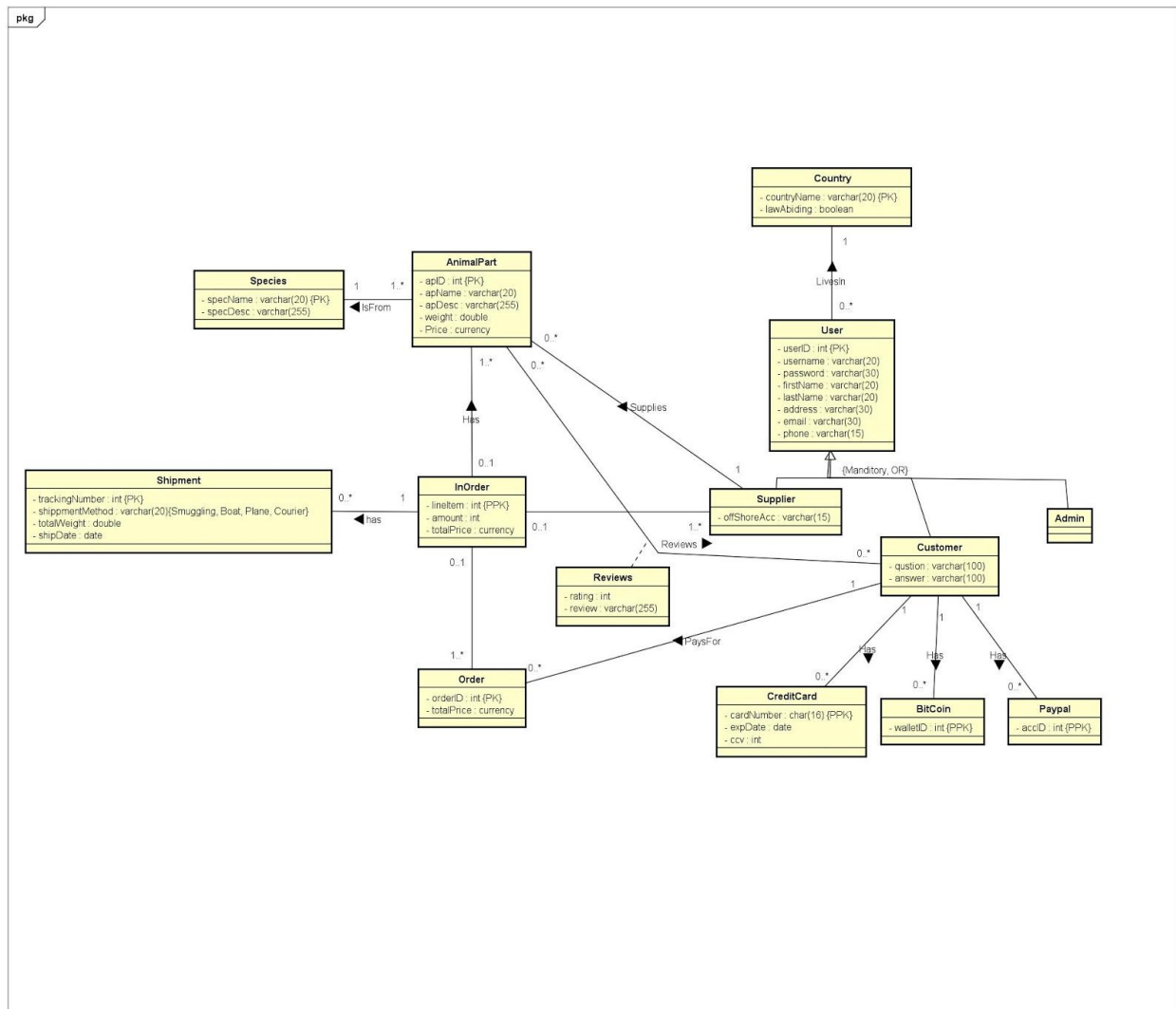
A user account can link three different types of payment options to their account: Paypal, Credit Card, and Bitcoin. A user can have multiple instances of the same type of payment option linked to their account. Supplier accounts cannot link payment options to their account.

## 2.4 Products

We have an expansive catalogue of animal parts available for sale and when a user orders a part we request the part from its supplier and add the part to the user's cart. It is then shipped from the supplier to the customer. Each product is only associated with a single supplier, as the PLWT proudly supports monopolizing business tactics.

## Data Model

### 3.1 UML Diagram





## 3.2 Relational Assumptions

Relationship	Description
User LivesIn Country	This is a one to many relationship. A user lives in one country and a country can have many users.
Customer has Cart	This is a one to one relationship. A customer must have a cart and a cart must have a customer. (A customer is assigned a cart upon creation of their account)
Cart GoesTo Shipment	This is a one to many relationship. A cart can result in many shipments from different areas but a shipment is only the result of one cart.
Animal Part IsFrom Species	This is a one to many relationship. An animal part is from one species but a species potentially has many sellable parts.
Customer Has Credit Card, Bitcoin, Paypal	This is a one to many relationship. A customer can have many credit cards, many bitcoin wallets, and many paypal accounts, but each credit card, bitcoin wallet, and paypal account is only associated with one customer.
InOrder	This is a three way many to many relationship between AnimalPart, Supplier, and Cart. There are many AnimalParts that could be ordered, many Suppliers that could provide the part, and many Carts the item could be ordered for.
PaysFor	Links a order to a Customer. The Customer pays for this order with one of their payment options.

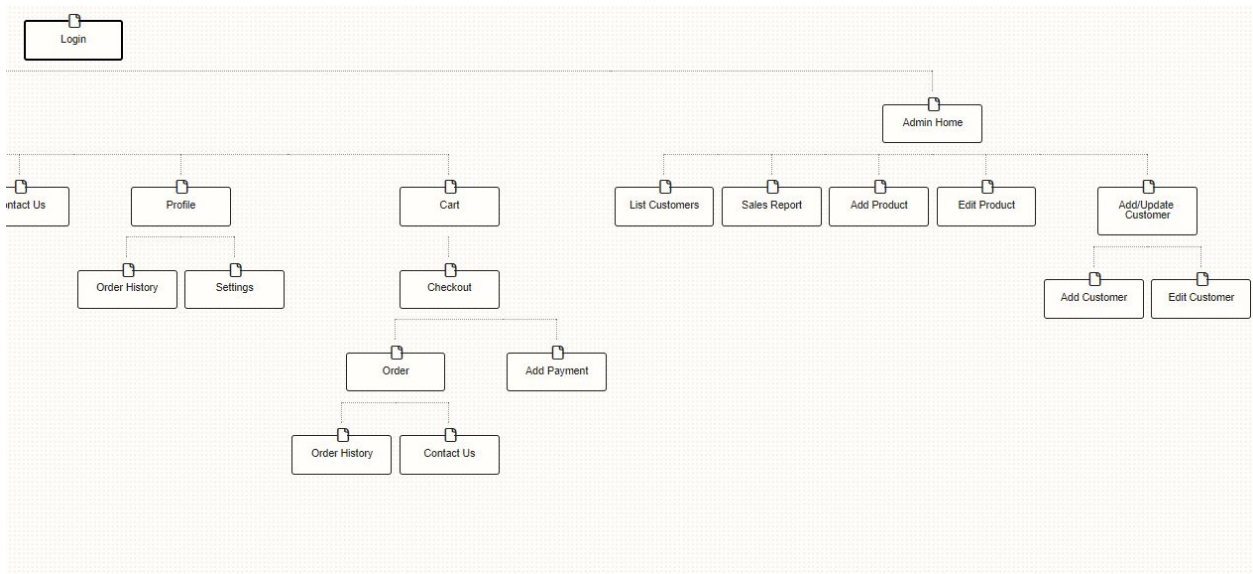
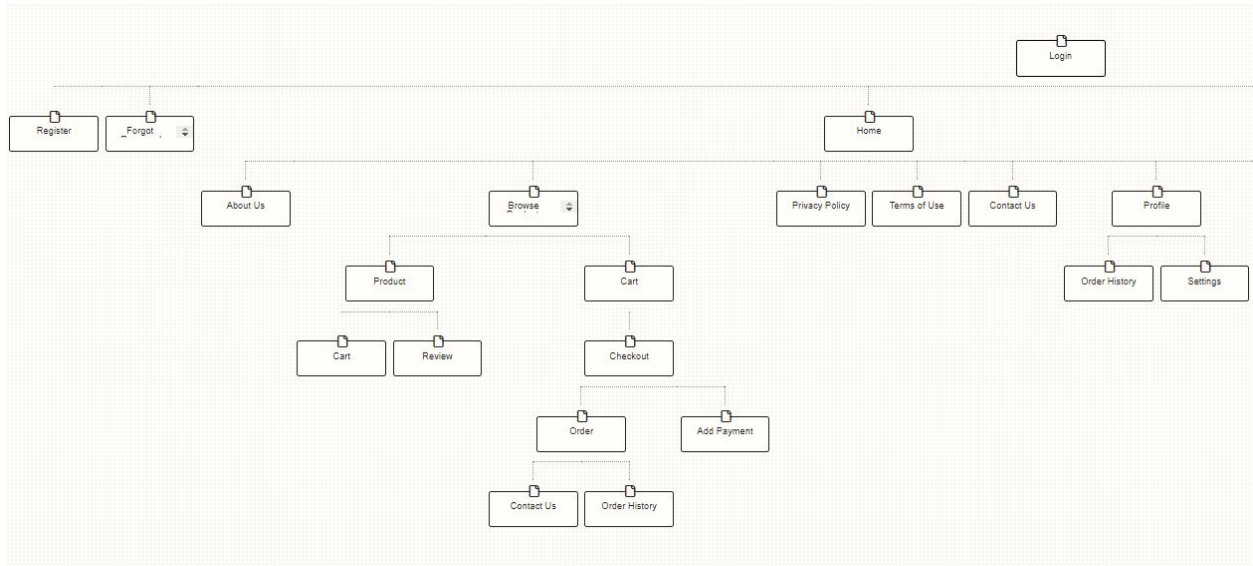
## 3.3 Relational Schema - SQL DDL

<pre> create table Species(     specName varchar(20) NOT NULL,     specDesc varchar(255) NOT NULL,     PRIMARY KEY (specName) ); </pre>	<pre> create table AnimalPart(     apID int NOT NULL AUTO_INCREMENT,     apName varchar(20) NOT NULL,     apDesc varchar(255) NOT NULL,     weight double NOT NULL,     Price decimal(8,2) NOT NULL,     specName varchar(20) NOT NULL,     Image MEDIUMBLOB,     sid int NOT NULL,     PRIMARY KEY (apID),     FOREIGN KEY (sid) REFERENCES Supplier(sid)         ON UPDATE CASCADE ON DELETE NO ACTION     FOREIGN KEY (specName) REFERENCES Species(specName)         ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>
<pre> create table Country(     countryName varchar(20) NOT NULL,     lawAbiding boolean NOT NULL,     PRIMARY KEY (countryName) ); </pre>	<pre> create table User(     userID int NOT NULL AUTO_INCREMENT,     username varchar(20) NOT NULL UNIQUE,     password varchar(30) NOT NULL,     firstName varchar(20) NOT NULL,     lastName varchar(20) NOT NULL,     address varchar(30) NOT NULL,     email varchar(30) NOT NULL UNIQUE,     phone varchar(15) NOT NULL,     countryName varchar(20) NOT NULL, </pre>

	<pre> PRIMARY KEY (userID), FOREIGN KEY (countryName) REFERENCES Country(countryName) ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>
<pre> create table Supplier(   offShoreAcc varchar(15) NOT NULL,   sid int NOT NULL,   PRIMARY KEY (sid),   FOREIGN KEY (sid) REFERENCES User(userID)   ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>	<pre> create table Customer(   cid int NOT NULL,   question varchar(100) NOT NULL,   Answer varchar(100) NOT NULL,,   PRIMARY KEY (cid),   FOREIGN KEY (cid) REFERENCES User(userID)   ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>
<pre> create table CreditCard(   cardNumber char(16) NOT NULL UNIQUE,   expDate Date NOT NULL,   ccv int NOT NULL,   cid int NOT NULL,   PRIMARY KEY (cardNumber, cid),   FOREIGN KEY (cid) REFERENCES Customer(cid)   ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>	<pre> create table BitCoin(   walletID int NOT NULL UNIQUE,   cid int NOT NULL,   PRIMARY KEY (walletID, cid),   FOREIGN KEY (cid) REFERENCES Customer(cid)   ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>
<pre> create table Paypal(   accID int NOT NULL UNIQUE,   cid int NOT NULL,   PRIMARY KEY (accID, cid),   FOREIGN KEY (cid) REFERENCES Customer(cid)   ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>	<pre> create table Orders(   orderID int NOT NULL AUTO_INCREMENT,   totalPrice decimal(8,2) NOT NULL,   cid int NOT NULL,   PRIMARY KEY (orderID),   FOREIGN KEY (cid) REFERENCES Customer(cid)   ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>
<pre> create table Shipment(   orderID int NOT NULL,   sid int NOT NULL,   cid int NOT NULL,   apID int NOT NULL,   shipmentMethod varchar(15) CHECK (shipmentMethod IN ('Smuggling', 'Boat', 'Plane', 'Courier')),   amount int NOT NULL,   weight double NOT NULL,   shipDate TIMESTAMP DEFAULT CURRENT_TIMESTAMP,   PRIMARY KEY (orderID,sid,cid,apID),   FOREIGN KEY (orderID) REFERENCES Orders(orderID)   ON UPDATE CASCADE ON DELETE NO ACTION,   FOREIGN KEY (sid) REFERENCES Supplier(sid)   ON UPDATE CASCADE ON DELETE NO ACTION,   FOREIGN KEY (cid) REFERENCES Customer(cid)   ON UPDATE CASCADE ON DELETE NO ACTION,   FOREIGN KEY (apID) REFERENCES AnimalPart(apID)   ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>	<pre> create table InOrder(   sid int NOT NULL,   cid int NOT NULL,   orderID int NOT NULL,   lineItem int NOT NULL,   amount int NOT NULL,   totalPrice decimal(8,2) NOT NULL,   PRIMARY KEY (sid, cid, cartID, lineItem),   FOREIGN KEY (sid) REFERENCES Supplier(sid)   ON UPDATE CASCADE ON DELETE NO ACTION,   FOREIGN KEY (cid) REFERENCES Customer(cid)   ON UPDATE CASCADE ON DELETE NO ACTION,   FOREIGN KEY (cartID) REFERENCES Cart(cartID)   ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>
<pre> CREATE TABLE Admin(   aid int NOT NULL,   PRIMARY KEY(aid),   FOREIGN KEY(aid) REFERENCES User(userID) ); </pre>	<pre> CREATE TABLE Reviews (   cid int NOT NULL,   apID int NOT NULL,   rating int NOT NULL,   review varchar(255),   PRIMARY KEY (cid,apID),   FOREIGN KEY (cid) REFERENCES Customer(cid)   ON UPDATE CASCADE ON DELETE NO ACTION,   FOREIGN KEY (apID) REFERENCES AnimalPart(apID)   ON UPDATE CASCADE ON DELETE NO ACTION ); </pre>

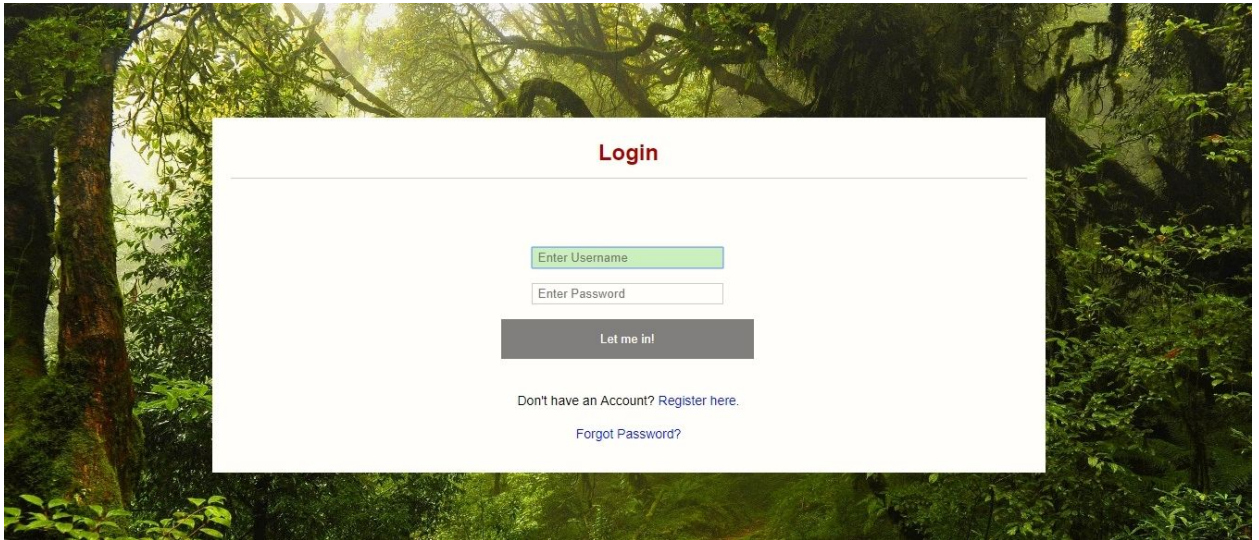
# Interface

## 4.1 Site Map



## 4.2 User Walkthrough

1. Visit the link [http://csc304.ok.ubc.ca/20600152/tomcat/304\\_Proj/login.jsp](http://csc304.ok.ubc.ca/20600152/tomcat/304_Proj/login.jsp)

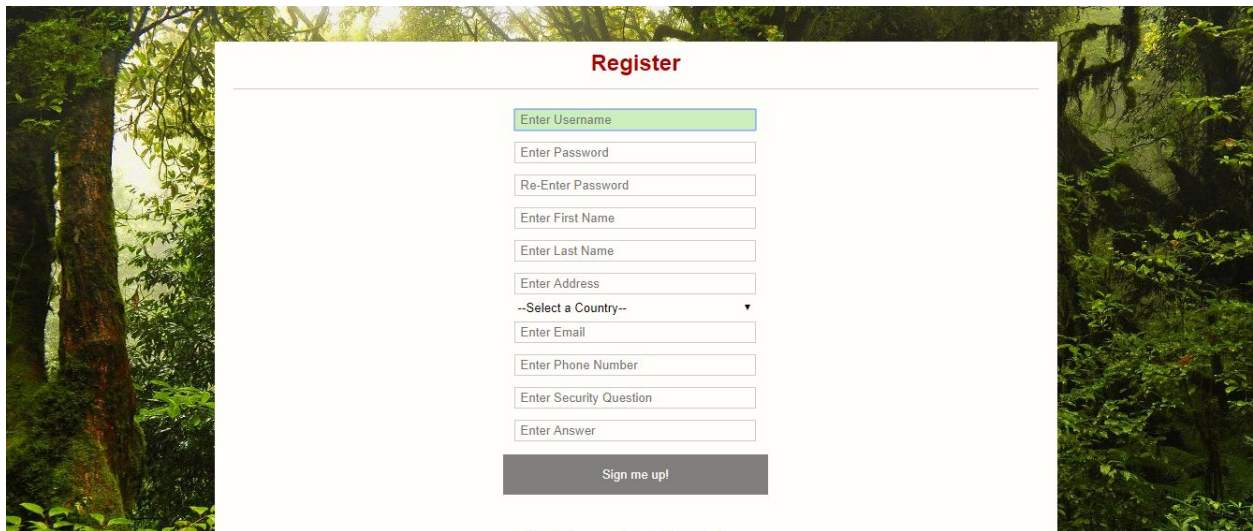


2. You should arrive at the login page. Feel free to register a new account, or if you'd rather skip straight to the website, we have provided a newly made account with:

Username: user

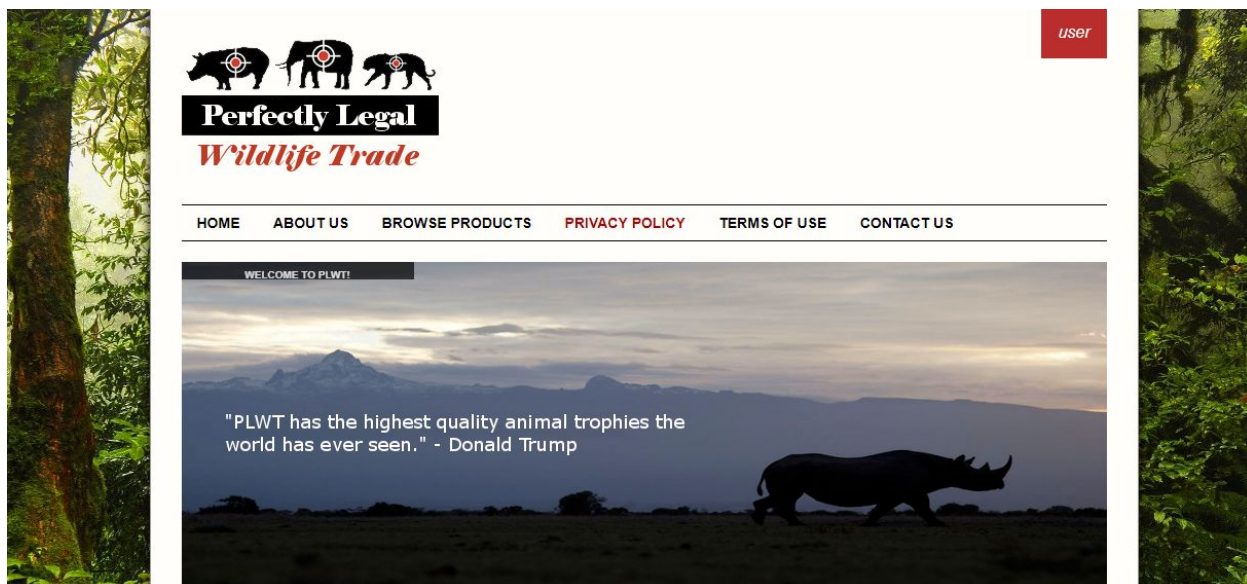
Password: (removed)

- 3.



At the register page, you can enter your personal information and create your customer account. Note that the email field requires an input containing a “@”, and that the two passwords entered must match. A phone number between 9 and 12 characters is also required. The country you select here will determine whether your shipments will need to be smuggled to you as opposed to regular delivery options.

4.



Once you reach the home page, take a moment to marvel at the impeccable design. There is a menu bar across the top of the page with links to the various pages. Once you have sufficiently appreciated it, click on browse product to see our products.

### Welcome to Perfectly Legal Wildlife Trade

Our mission is to give everyone the opportunity to collect glorious animal parts without having to hunt and hack them off yourself, in a perfectly legal way.

#### Highest Rated Product:



#### Cassowary Crest

With an average of 5.0 stars

Used to attract a mate. Works for more than one species ;)

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Note the promotion for our highest rated product at the bottom of the page. This product has the highest average review rating. Once you have made a purchase, there will also be a selection of products recommended based on your purchase history.

5.









HOME ABOUT US BROWSE PRODUCTS PRIVACY POLICY TERMS OF USE CONTACT US

**Search for the products you want to buy:**

Category ▼ Species ▼


**Product List:**

Product Name	Price	Quantity	
 African Elephant Tusk	\$229,999.99	1 ▼	<input type="button" value="Add to Cart"/>
 American Alligator Tooth	\$49.99	1 ▼	<input type="button" value="Add to Cart"/>
 Reticulated Giraffe Hoof	\$5,999.99	1 ▼	<input type="button" value="Add to Cart"/>
 African Cheetah Tooth	\$89.99	1 ▼	<input type="button" value="Add to Cart"/>
 Spider Monkey Paw	\$8,399.99	1 ▼	<input type="button" value="Add to Cart"/>
 Cape Lion Head	\$189,999.99	1 ▼	<input type="button" value="Add to Cart"/>

You can use the search bar to search the names of our inventory, and you can select a category to narrow your search to items within a single category. For example, we'll order a Cassowary Crest. Click on "Species" and select Cassowary. Now click on the thumbnail for Cassowary Crest.

6.

**Product:**

Product	Price	Quantity	
	\$3,999.99	1 ▼	<input type="button" value="Add to Cart"/>

**Cassowary Crest**

Used to attract a mate. Works for more than one species ;)

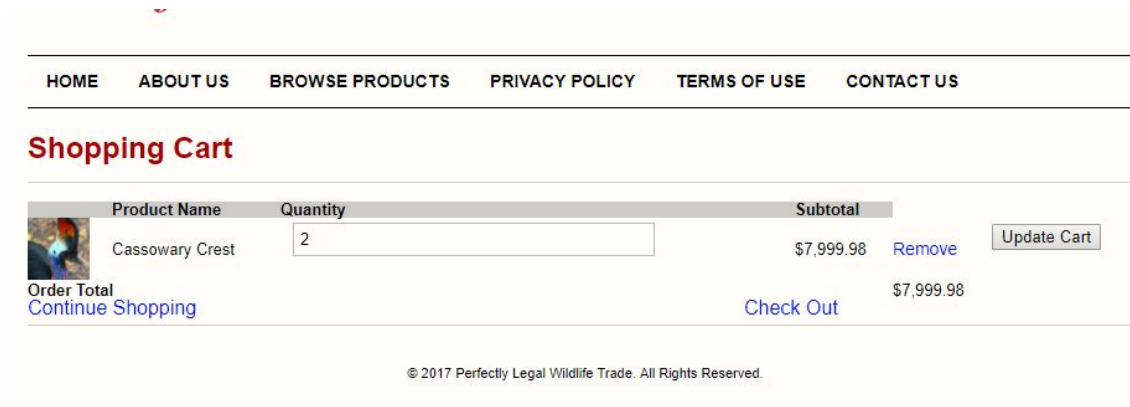
**Reviews:**

User	# of Stars
smugs Absolutely delicious	5

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On the product page, you can see the details and description for the product, as well as the reviews left by other users. Select a quantity, and click "Add to Cart".

7.

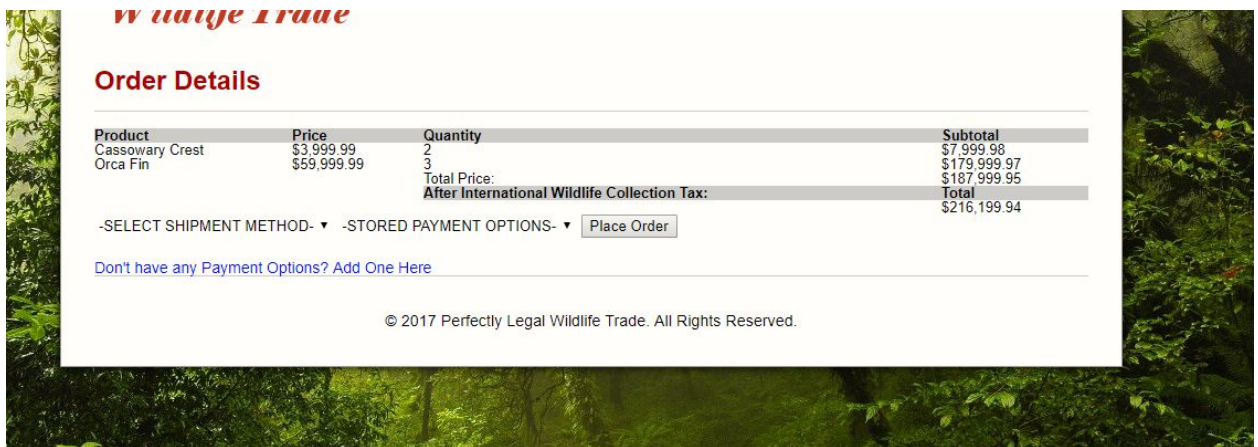


At the cart page, you can update the quantity of the items in your cart. Simply change the number in the quantity field and click “Update Card” Note that entering an invalid quantity will lead to the amount remaining unchanged, and printing a warning to the user.

8. Now you can click on “Continue Shopping” to go back to our product list. Use the search bar to find more items, and add them to the cart as well.

9. If you’d like to remove a product from the cart, click the remove button next to the item.

10.



Once you’re satisfied with your cart, click on “Check Out” to go to our checkout page.

11. To place your order, you’ll need to add a payment option first.

12.

**Perfectly Legal Wildlife Trade**

### Add Payment

Credit Card ▼

Card Number:

CVV:

Expire Date: January, 2012

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Select a payment type from the dropdown menu, and add the necessary information to the dynamic fields that appear.

13.

### Order Details

Product	Price	Quantity	Subtotal
Cassowary Crest	\$3,999.99	2	\$7,999.98
Orca Fin	\$59,999.99	3	\$179,999.97
Total Price:			\$187,999.95
After International Wildlife Collection Tax:			Total
			\$216,199.94

Plane ▼ CC: \*\*\*\* \* 4513 ▼

[Don't have any Payment Options? Add One Here](#)

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Once you have added your payment option, you will be returned to the checkout page. Select your shipping method (If you are in a country designated as “Law Abiding,” the “Smuggling” option will be autoselected.) Your total order price will be displayed, as well as the final price after taxes. If your shipping method is smuggling, then the taxes will be replaced by our standard smuggling fee. Click Place Order when finished.

14.

### Order Details

**Successful Order | Shipping Details:**  
OrderID: 70

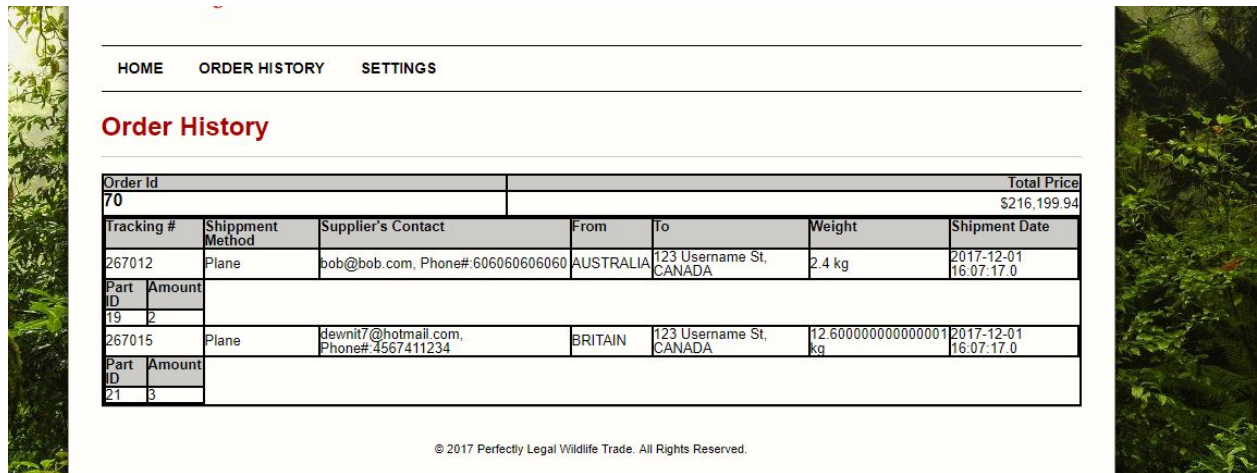
Shipment #	Shipment Method	Supplier's Contact	From	To	Weight	Shipment Date
1	Plane	bob@bob.com, Phone#:606060606060	AUSTRALIA	123 Username St, CANADA	2.4 kg	2017-12-01 16:07:17.0
2	Plane	dewnit7@hotmail.com, Phone#:4567411234	BRITAIN	123 Username St, CANADA	12.600000000000001 kg	2017-12-01 16:07:17.0

Thank you user. We really appreciate your support for our entirely legitimate enterprise. We hope you enjoy your new Animal Parts. If you need our help or have any questions, feel free to use our [Contact Us](#) page. See your [Order History](#) for more shipping information.

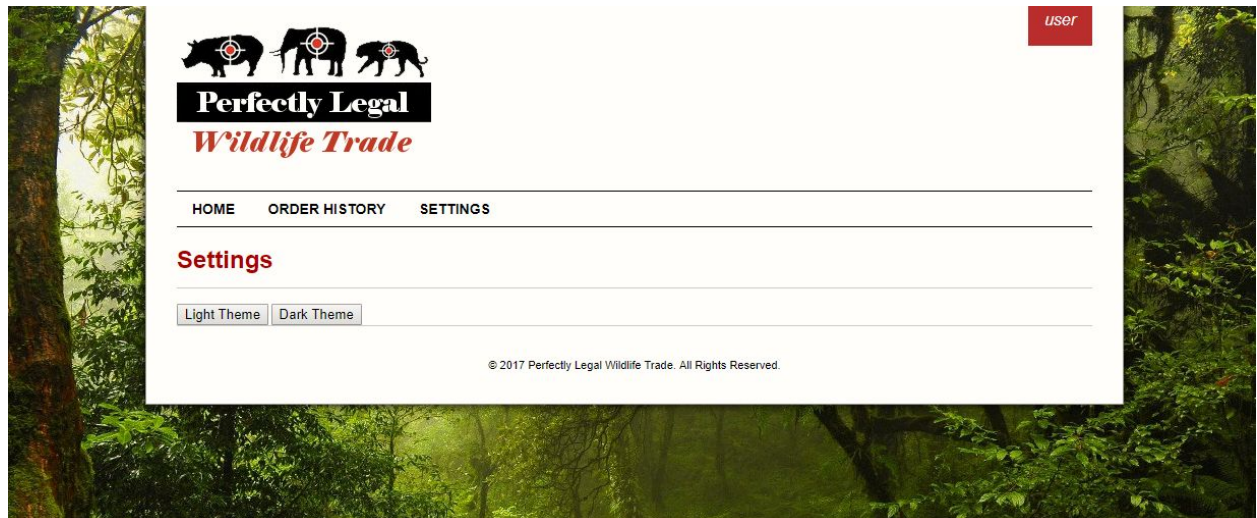
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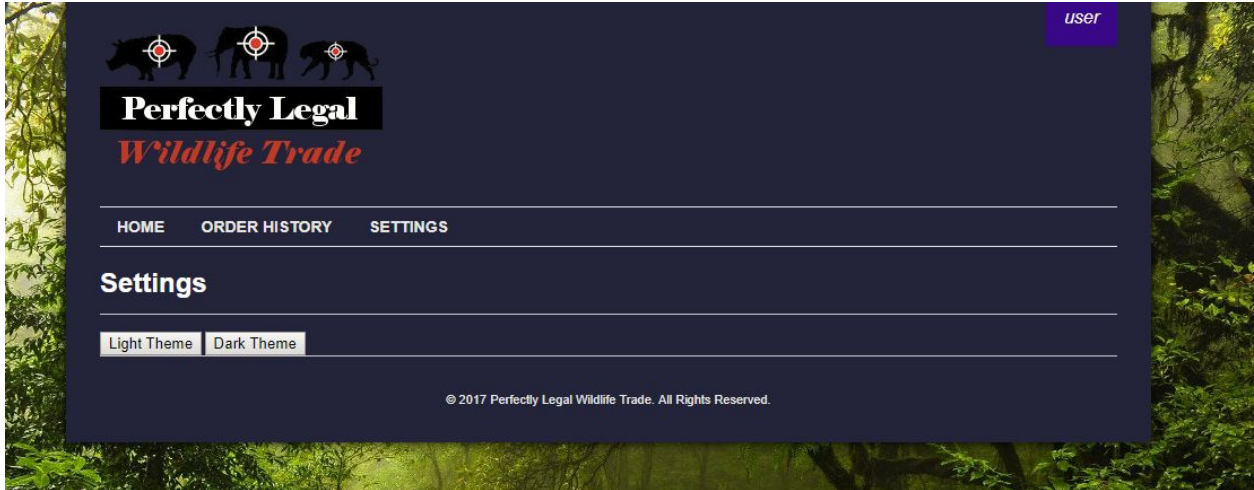
Once the order has processed, you will see your order details. If you are purchasing multiple parts from different suppliers, your order will be split into a separate shipment for each supplier. If you would like to review this information later, you can click the “Order History” link below. You can also view Order History through the profile menu in the top right.



15.



In the profile page, you can also click on “Settings” to change your theme.



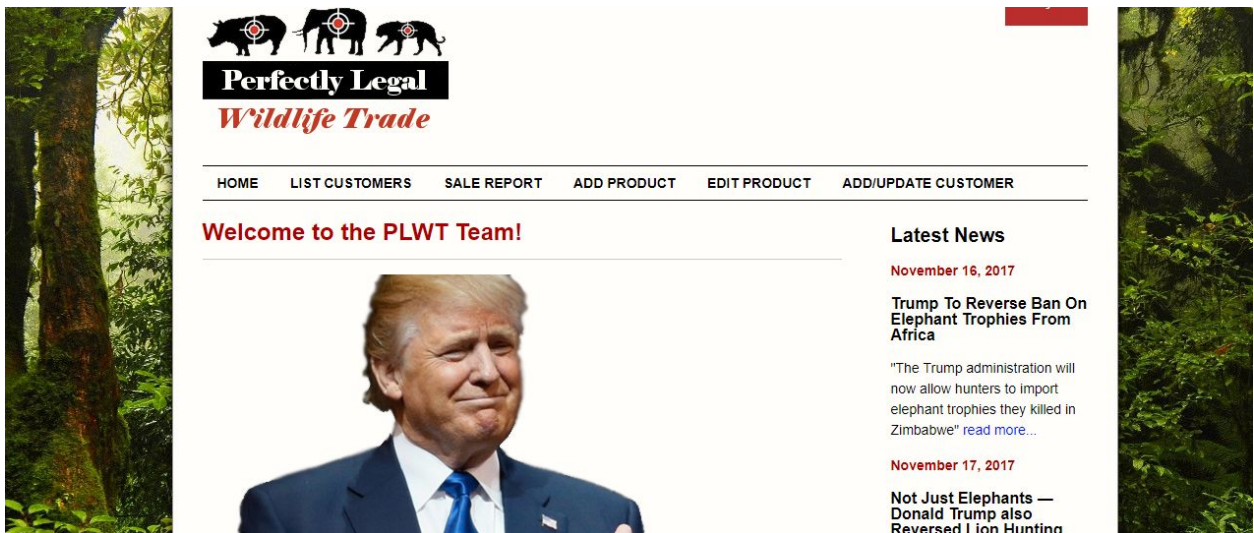
Now we'll look at the features available to admins of the site.

16. Click on the profile menu in the top right, and select logout. When you are returned to the login screen, login as an admin with the following information:

Username: admin

Password: (removed)

17.



Enjoy the home page of our admin portal, and reflect on the correct life choices that lead to this moment. Note that all pages in the admin portal are only accessible when logged in as an admin.





20.

### Add an Animal Part

Part Name:

Description:

Weight:

Price:

Species:

Category:

Supplier:

Photo:  No file chosen

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Click on "Add Product" to add a new product to our inventory.

21.

### Search for the product you want to edit:

Category ▼ Species ▼

#### Product List:

	Product Name	Price	
	African Elephant Tusk	\$229,999.99	<input type="button" value="Edit Product"/>
	American Alligator Tooth	\$49.99	<input type="button" value="Edit Product"/>
	Reticulated Giraffe Hoof	\$5,999.99	<input type="button" value="Edit Product"/>
	African Cheetah Tooth	\$89.99	<input type="button" value="Edit Product"/>
	Spider Monkey Paw	\$8,399.99	<input type="button" value="Edit Product"/>
	Cape Lion Head	\$189,999.99	<input type="button" value="Edit Product"/>

Click on "Edit Product" to browse current products, and click "Edit Product" to edit one.

22.

### Search for the customer you want to edit (by username):

#### Add New Customer/Supplier/Admin

User Name	Customer ID	First Name	Last Name	Email	
kony65	1	kony	jefferson	kony65@hotmail.com	<input type="button" value="Edit"/>
wt	4	wt	wt	W@	<input type="button" value="Edit"/>
jordems	5	jordan	emslie	JEFFJAMESDOG@JAMIN.CO	<input type="button" value="Edit"/>
James12	6	james	johnson	James12@gmail.com	<input type="button" value="Edit"/>
Matt	7	Matt	Blanke	matt@blanke.com	<input type="button" value="Edit"/>
jeff	9	jeff	johnson	jeffJohny@jas	<input type="button" value="Edit"/>
Kyle42	10	Kyle	James	Kyle42zero@doggin.ca	<input type="button" value="Edit"/>
Levi	11	Levi	Magnus	leviwebguy@gmail.com	<input type="button" value="Edit"/>

Click “Add/Update Customer” to see a list of current customers, and click edit to change their account information. Click the “Add New Customer/Supplier/Admin” link to add a new account. You can now log out.

23.

### Enter your username to see your security question!

---

Enter Username

Show me the question!

Don't have an Account? [Register here.](#)

[Back to login.](#)

### Answer the security question to see your password!

---

user is answer

Enter Answer

Show me my password!

Don't have an Account? [Register here.](#)

[Back to login.](#)

### There you go! Hopefully you are who you say you are!

---

Your password is: password

[Back to login.](#)

If a user forgets their password, they can click “Forgot Password”

Note that their password is displayed in plain text, a gesture of the trust we have in our customers. We know you would never misuse this information.

24.

**Recommend Products:**

	<b>Orca Fin</b>
	This fin creates the most enticing breakfast know to man.
	<b>Camel Brain</b>
	Delicious

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Logging back in with the customer account from before, we can see that we are now being offered a list of recommended products based on our earlier purchases.

25.

[Review This Product](#)

**Reviews:**

User	# of Stars
jordems	5
My Favorite, wow	
Levi	4
Best tooth eval	

Returning to the product page for a previously purchased product, we can now submit a review for the product. Note that if we attempt to submit a review for a product we haven't purchased, or a product that we have already viewed, we will receive an error message.

# Conclusion

## 5.1 Conclusion

In summary, the Perfectly Legal Wildlife Trade is the ultimate solution for all your animal poaching needs. Thank you for time. We hope you remember our website next time you need to purchase endangered animal parts.