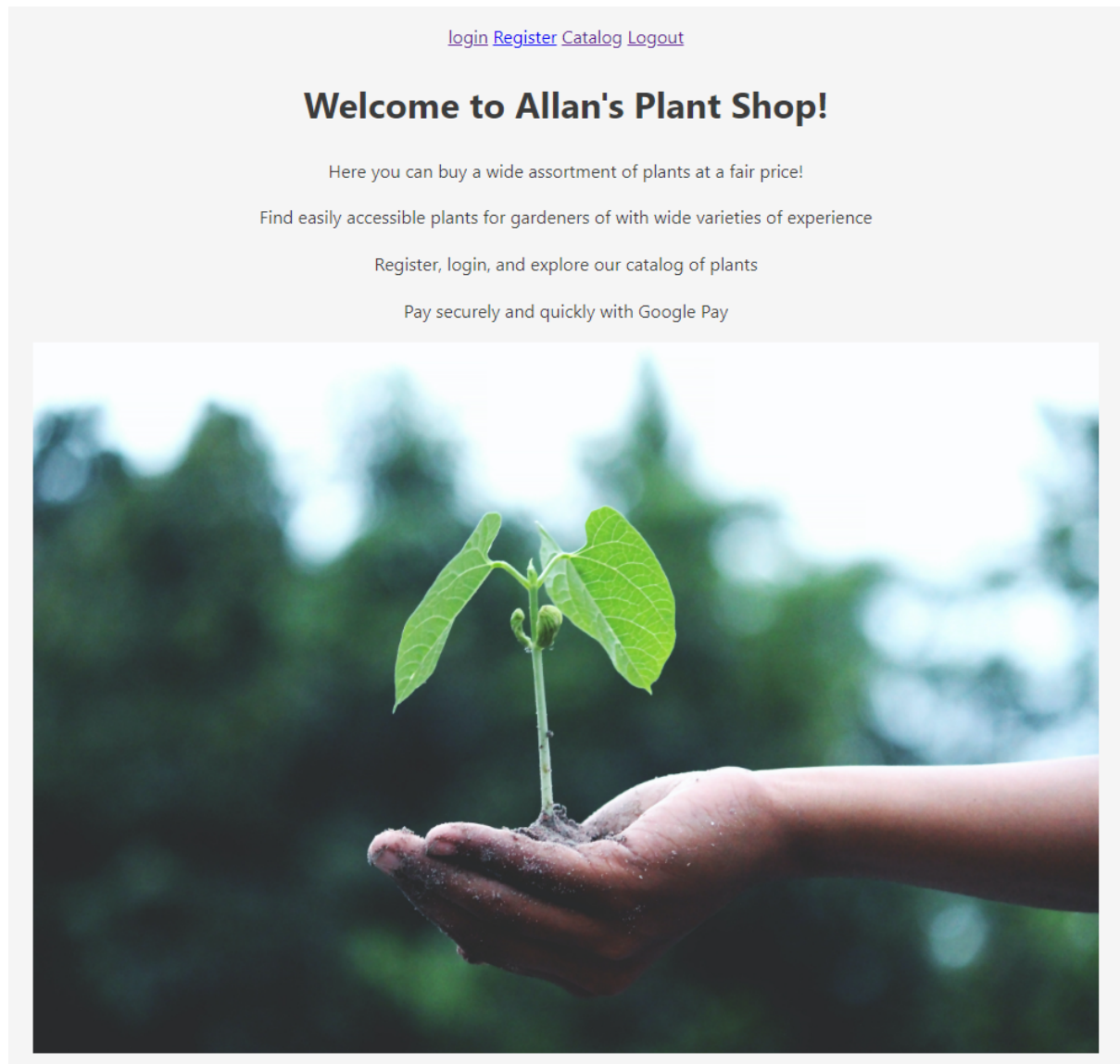Upon entering the site the user will be welcomed by the following page. This page contains a brief description of what the site's purpose is, as well as its capabilities and tells the user of the use of Google Pay API for payments. From here the user can login, register, view the catalog if they are logged in, or logout.

Should the user click "login" or "catalog" while not logged in at the top of the page, they will be redirected to the login screen. The following alert will be displayed should the user have clicked "catalog" :
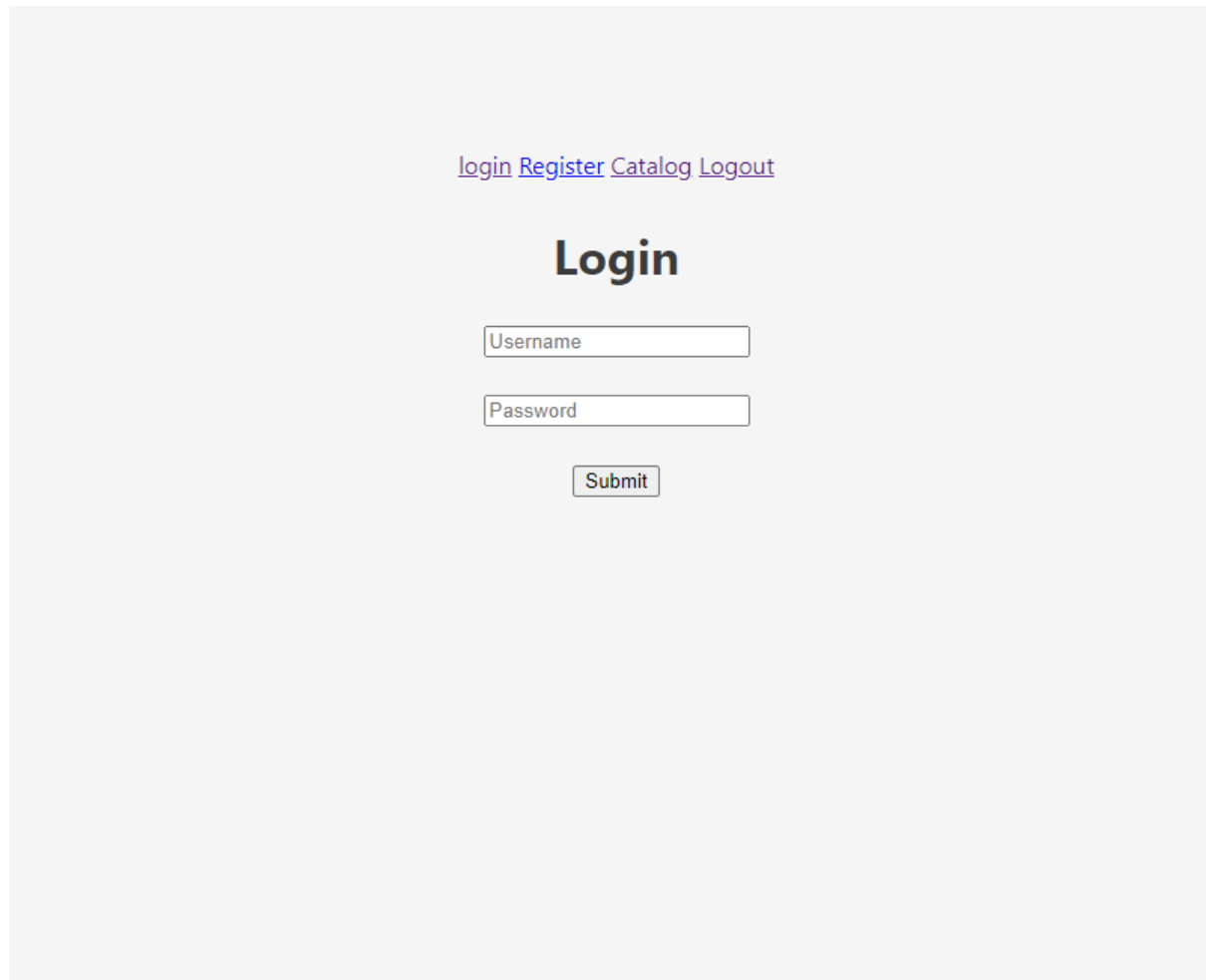

From the login page, users can input a username and password. The user's device then generates a random DES key, which is used to encrypt a hashed version of the input password. The DES key is also sent to the server after being encrypted by the server's

public key. The server will then decrypt the DES key using its private key, and it will use the DES key as a session key henceforth with the user until they log out or the site is closed. The user will then be redirected to the catalog if their credentials are found in the database.
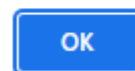
login Register Catalog Logout

Login

Username

Password

Submit

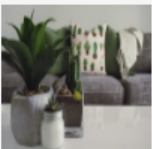The following alert will be displayed if the credentials are not found in the database:

jupiter.csit.rmit.edu.au says

Invalid username or password

OK

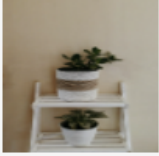Shown here is the catalog, here users can view items with their price, image, and description being shown. Users can also enter the quantity of the item they wish to purchase. These fields are validated such that they cannot be less than 0. If all quantities are set to 0 then the user cannot proceed to checkout. At the bottom of the page is a dynamic display for the total price of the selected item quantities. Next to this display is the checkout button, which when clicked will send the total price of the cart encrypted by the session key.

Catalog

Image	Description	Price	Quantity
	some cacti	$0.05	0
	5 succulents	$0.01	0
	desk plants	$0.10	0
	random indoor plant	$10.00	0
	cacti for sale	$5.00	0
	indoor plant	$13.00	0
	indoor plants	$2.00	0

	succulent sets easy to maintain	$0.10	0
	house plants	$0.05	0
	indoor plants for anyone	$0.20	0
	easy to care for succulents	$0.30	0
	small cacti	$0.50	0
	indoor plants and succulents	$0.10	1

Total: $0.10 [Checkout]

The user is then redirected to the checkout where the total is decrypted by the client, and the user is prompted to pay with GPay

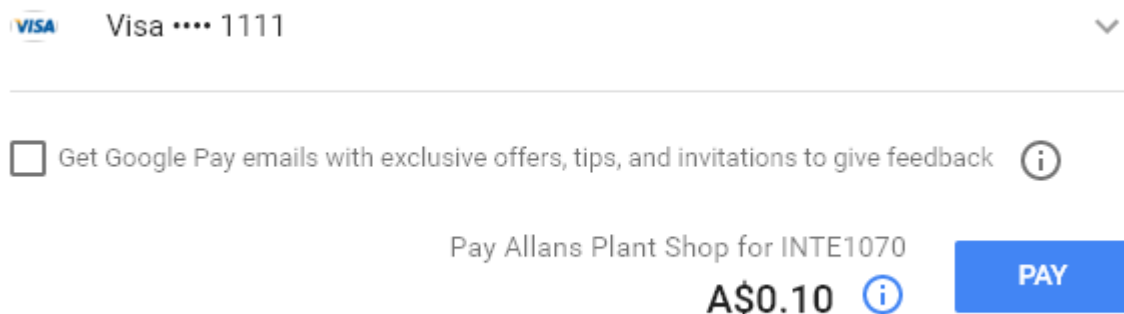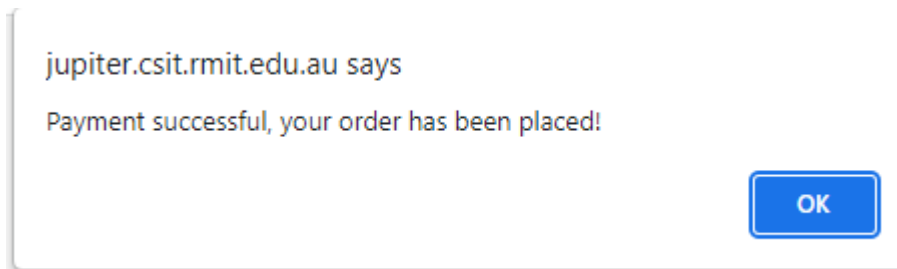# Checkout

Total: $0.10

Buy with G Pay

Here the user will follow the prompts in GPay and choose a payment method. They will also see the name of the business as well as the price they will be charged. If the payment is unsuccessful then an alert will be sent to the user prompting them to try again.

Once the order is successful the following alert will be displayed:

The user will then be redirected to the following page:
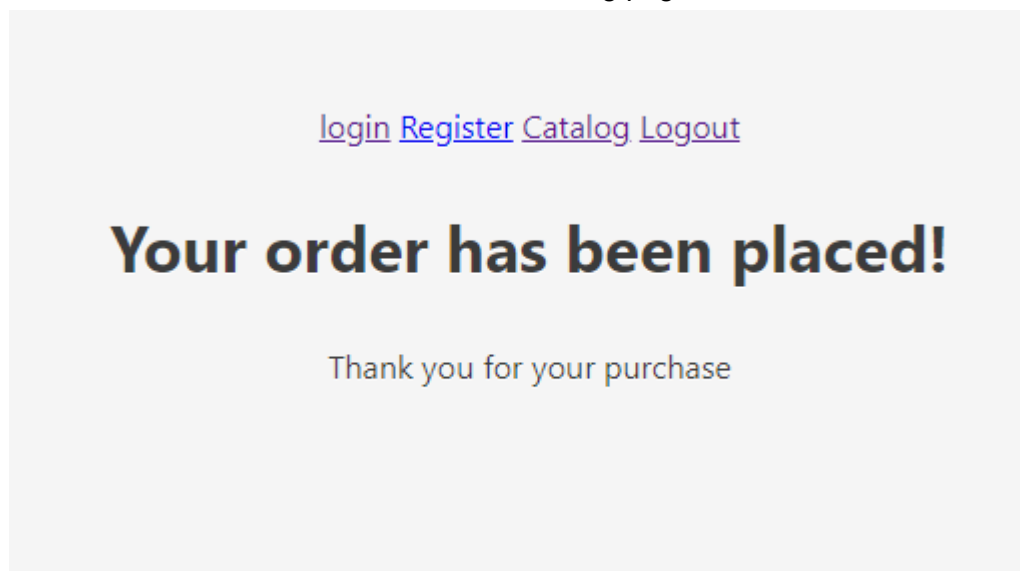
The following page is displayed to users for registering:

Register

Username

Password

email@address

012345678

Submit

Here the fields are validated to match the format of the fields. The user is also logged in when they register.