**Login page:**

Understanding user authentication is crucial because it’s a key step in the process that keeps unauthorized users from gaining access to sensitive information. The ID and key are enough to confirm the user’s identity, which will allow the system to authorize the user. We can’t create a login system with HTML, CSS and JavaScript alone, we have to do some back-end using languages like PHP, Python and Ruby. We also have to get ourselves a database (PostgreSQL, MySQL, SQLite, MongoDB), so when users register, their information would securely get saved there.

**To put it simply, user authentication has three tasks:**

1. Manage the connection between the human (user) and the website’s server (computer).
2. Verify users’ identities.
3. Approve (or decline) the authentication so the system can move to authorizing the user.

**A password-based user authentication process generally looks like this:**

* Firstly, the user has to register on the website so that the credentials used during registration can be stored in the database.
* Then on the login page, user will be asked to enter their username and password.
* User credentials are sent to the website’s server and compared with the information they have on file.
* When a match is found, user will be able to enter their account.
* If not, user will be asked to re-enter their credentials and try again.
* If user object doesn't exist in the database, user will be redirected to registration page.
* After several unsuccessful attempts, the account may be flagged for suspicious activity or require alternative authentication methods such as a password reset or a one-time password.

**Online payment:**

**The 7 Steps of Online Payment Transactions**

To make the online payment transaction possible, the merchant had previously set up an internet merchant account (IMA) and a payment gateway. Here is precisely how it all plays out when the user hits that final button on the website’s checkout page:

1. User provides their payment information (credit card details) and hits the **Place order** button, committed to purchasing a certain product.
2. The payment gateway picks up the online payment transaction information and encrypts it, before swiftly sending it to the approved payment processor, along with other concurrent online payment transactions.
3. The payment processor passes the payment information along to the relevant card network.
4. The card network performs a check with the issuing bank whether user's transaction can be authenticated. If everything checks out at this stage, the online payment transaction is authorised and user's card is immediately debited by the issuing bank.
5. The issuing bank sends a confirmation of the payment authorization to the card network, thus letting the card network know that user has been authorized to complete the online transactions. By the way, this is when the issuing bank also informs user that their card is being debited.
6. The card network further confirms the validity of the online payment transaction to the payment processor and the payment gateway.
7. The payment gateway delivers the good news to the merchant and merchant is now free to inform user that their order is successfully placed.

**Let's Sum Up**

Basically, when the customer places an order on the merchant’s website, the payment gateway securely gathers and stores the transaction data, which is processed and forwarded to the financial institution and to the credit card networks, which, in turn, transfer the encrypted information to the customer’s card issuing bank for approval.

When the payment is confirmed by the issuing bank, the information chain is backtracked, and the merchant informs the customer, within three seconds since the order, that the transaction has been completed successfully.

At no point in time does the payment gateway directly interact with the customer’s or the merchant’s money. That remains the banks' job.

**Pre-ordering feature:**

No one likes to wait for delicious food. Especially students who have short lunch breaks. Our website tries to solve exactly this problem. With our website, users can order food prior to their lunch breaks and collect their hot and tasty order on time. With this feature, user can order food at least 15 minutes.

* After logging in, user can browse through the website and select their favourite dishes.
* Add them to the cart.
* Select the appropriate time to pick-up the order from the counter.
* Check the total amount to be paid at the counter while receiving the order.
* Finally, place their order.
* After the user places their order, the order details are stored at the server side.
* The order will then be shown in the canteen owner’s database from where they can start preparing the order.
* User must place the order at least 15 minutes prior.

**References:**

1. <https://swoopnow.com/user-authentication/#:~:text=The%20process%20is%20fairly%20simple,them%20access%20to%20their%20accounts>.
2. <https://www.quora.com/What-happens-in-between-login-page-and-our-page-in-a-website-Can-you-explain-clearly-with-a-bit-of-code>
3. <https://www.twispay.com/en/blog/how-does-an-online-payment-transaction-work/>