

# PAYMENT CONFIRMATION

## BLOCKCHAIN DEVELOPMENT

**Time:** 60 mins

### Introduction

In this class, the student/s will create the payment confirmation functionality.

### New Commands Introduced

- |   |   |
|---|---|
| • <code>new XMLHttpRequest()</code>               | Creates a new request instance to interact with the server  |
| • <code>open(method,url,async)</code>             | Sends a request to the server<br>method: Defines the type of request GET or POST<br>url: States the file location<br>async: true - Keeps sending request while waiting for the response<br>async: false - Waits till the response is received |
| • <code>setInterval(function,milliseconds)</code> | Continues calling the function at the specified intervals   |
| • <code>onreadystatechange</code>                 | Defines a function to be called every time the readyState property changes  |
| • <code>readyState</code>                         | Holds the status of the XMLHttpRequest.   |
| • <code>status</code>                             | Returns the status-number of a request  |

### Vocabulary

- **XMLHttpRequest** object is used to request data from the server to update a web page without reloading the page.
- **Wait/ Loading Page** are used to inform the users that the system is processing a request, loading a content or performing an action.

### Learning Objectives

Student/s should be able to:

- **Recall** how to create an app route to the functions.
- **Explain** the ready state and status of a HTTP request.
- **Demonstrate** the addition of a wait page while the payment is confirmed.

# Activities

## 1. Class Narrative: (3 mins)

- Brief the student/s that in this stage of payment management, they would learn to wait till the payment is confirmed before the order is placed.

## 2. Concept Introduction Activity: (4 mins)

- Let the student/s undertake the explore-activity to observe that a wait page is displayed while the payment for the order is confirmed.

**Note:** Run the payment gateway before ordering from the Volts Mills website. Ask the student/s to visit the Volt Mill page to view the wait page.

- Using the slides, explain that the student/s will learn:
  - to add a wait page
  - to send and receive response
  - to confirm the payment

## 3. Activity 1: Add a Wait Page (14 mins)

### Teacher Activity: (7 mins)

- Explain how a wait page or a loading page is used to enhance the user experience. The wait page provides visual feedback to inform users that the system is processing a request, loading content, or performing an action.
- Give examples of where a wait page is used.
  - Content Uploads
  - Processing Complex Calculations
  - Authentication and Authorization
  - E-commerce
  - Form Submission
- Explain what the values of `readyState` and `status` mean.
  - An XMLHttpRequest object `xhr` is created to get the response of the requests.
  - `xhr.readyState` provides the state of the HTTP request.
  - `xhr.status` provides the outcome of the HTTP request.
- Demonstrate how to add a wait page while the payment is processed.

### Student Activity: (7 mins)

- Guide the student/s to initiate an HTTP request to the server and load the wait page.

#### **4. Activity 2: Send and Receive Response (12 mins)**

**Teacher Activity:** (6 mins) .

- Recall an app routing technique to send the response from the web page to the wallet page.
- Demonstrate how to send a response from the server and receive it on the wait page.

**Student Activity:** (6 mins)

- Guide the student/s to create an app route to send a response to place the order.

#### **5. Activity 3: Confirm the Payment (12 mins)**

**Teacher Activity:** (6 mins)

- Ask the student/s about the next step after the payment is done from our end and conclude with the payment needs to be confirmed.
- Explain how payment status can be updated after the payment is received and further the payment confirmation status is reflected on the webpage.
- Demonstrate how to confirm the payment before the order is placed.

**Student Activity:** (6 mins)

- Guide the students to send the payment status to the Volts Mills web page.

#### **6. Introduce the Post class project: (2 min)**

- Send the refund amount to the account address that made the payment for the order.

#### **7. Test and Summarize the class learnings: (5 mins)**

- Check for understanding through quizzes and summarize learning after respective activities.
- Summarize the overall class learning towards the end of the class.

#### **8. Additional activities:**

- Encourage the student/s to create a payment ID and update its status.
- Encourage the student/s to send the updated payment status for the specific order.

#### **9. State the Next Class Objective: (1 min)**

- In the next class, student/s will learn to add multiple features to the wallet.

# U.S. Standards:

CSTA: 2-AP-11, 2-AP-12, 2-AP-13, 2-AP-14, 2-AP-19

Links Table		
Activity	Activity Name	Link
Class Presentation	Payment Confirmation	<a href="https://s3-whjr-curriculum-uploads.whjr.online/fa6f8be6-4bc4-49d6-bb66-512d57dc7029.html">https://s3-whjr-curriculum-uploads.whjr.online/fa6f8be6-4bc4-49d6-bb66-512d57dc7029.html</a>
Explore Activity	Payment Confirmation	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP</a>
Teacher Activity 1	Add a Wait Page	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS-BP">https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS-BP</a>
Teacher Reference: Teacher Activity 1 Solution	Add a Wait Page	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS">https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS</a>
Student Activity 1	Add a Wait Page	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP</a>
Teacher Reference: Student Activity 1 Solution	Add a Wait Page	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS</a>
Teacher Activity 2	Send and Receive Response	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS-BP">https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS-BP</a>
Teacher Reference: Teacher Activity 2 Solution	Send and Receive Response	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS">https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS</a>
Student Activity 2	Send and Receive Response	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP</a>
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Teacher Reference: Teacher Activity 3 Solution	Confirm the Payment	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS">https://github.com/Tynker-Blockchain/TNK-M13-C103-TAS</a>
Student Activity 3	Confirm the Payment	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP</a>
Teacher Reference: Student Activity 3 Solution	Confirm the Payment	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS</a>
Student's Additional Activity 1	Create Payment ID	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP</a>
Teacher Reference: Student's Additional Activity 1 Solution	Create Payment ID	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS</a>
Student's Additional Activity 2	Send the Payment ID Status	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS-BP</a>

Teacher Reference: Student's Additional Activity 2 Solution	Send the Payment ID Status	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS">https://github.com/Tynker-Blockchain/TNK-M13-C103-SAS</a>
Post Class Project	Refund Confirmation	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-PCP-BP">https://github.com/Tynker-Blockchain/TNK-M13-C103-PCP-BP</a>
Teacher Reference: Post Class Project Solution	Refund Confirmation	<a href="https://github.com/Tynker-Blockchain/TNK-M13-C103-PCP">https://github.com/Tynker-Blockchain/TNK-M13-C103-PCP</a>