On-Chain Market Test Script

Test Setup

Local In-Memory Blockchain

Step Number	Script
1	Run either the Ganache desktop client or CLI instance
2	Inside the truffle-config.js, ensure that the development network settings are correctly pointing to the local IP and the port specified by Ganache, which is by default 7545 for the desktop client and 8545 for the CLI instance.
3	From the command line inside the project folder, run "truffle compile" "truffle migrate" To compile and migrate the solidity smart contracts to the running local in-memory blockchain provided by Ganache.
4	From the command line inside the project folder, run "npm run dev" Which will start the web server and automatically open a browser to the index page
5	Open the MetaMask chrome extension (Install this extension from https://chrome.google.com/webstore/detail/metamask/nkbihfbeogaeaoehlefnkodbefgpgknn)
6	If MetaMask is not already connected to the ganache instance Choose "Restore from seed phrase" and copy the Mnemonic from the Ganache client along with a password of your choosing (the password does not matter as the account can restored from the seed phrase each time).
7	If MetaMask does not already have the local network available in the drop down at the top left, then choose "Custom RPC" and enter http://localhost:#### replacing "####" with the correct port (which is by default 7545 for the desktop client and 8545 for the CLI instance)
8	Ensure that you have 3 accounts available within MetaMask using the account selection menu. Use the "Create Account" option to generate each new account if required.
9	Refresh the browser page and then Ethereum Status panel should display the current account address, balance and the ID of the connected network

Test Cases

As a user I can list items for sale with a listing name and price in Ether.

Step Number	Script	Expected Outcome	Actual Result
1	From the MetaMask menu, use the account selector to select account 2	Account 2 will now be selected in MetaMask	Account 2 selected
2	Select the "My Listings" link from the navigation bar	Browser will be redirected to the "My Listings" page	Redirected successfully
3	Using the form under the "Create Listing" heading, filling in both the "Listing Name" and "Price in Ether" using the values: Listing Name: "Item 1" Price in Ether: 2.5	The "Create Listing" form will be filled out with the entered values.	Form filled out
4	Click the "Create Listing" button below the form	MetaMask will show a "Confirm Transaction" window displaying a transaction for 0 ETH.	Popup displayed
5	Click "Submit" below the transaction details	The MetaMask window will close and the "Ethereum Status" panel should update with the transaction hash	Transaction hash: 0x5ab32ec670b5cfc3160fd87c113373c89256b690a927dab2bd77f36d6ad28ef1
	After 5-10 seconds, refresh the page	The page will refresh showing the new listing under "My Listings" with the name "Item 1" and the price "2.5 ETH"	Item 1 with price 2.5 ETH is displayed in list

As a user I can browse existing listings for sale

Step Number	Script	Expected Outcome	Actual Result
1	Select the "Browse Listings" link from the navigation bar	Browser will be redirected to the "Currently Listed" page	Redirected to browse listings page
2	Confirm that the page contains the previously created listing with name "Item 1" and price "2.5 ETH"	The page will display a list with just the previously created listing for "Item 1"	Item 1 is listed with price 2.5 ETH

As a user I can purchase an available listing

Step Number	Script	Expected Outcome	Actual Result
1	From the MetaMask menu, use the account selector to select account 3	Account 3 will now be selected in MetaMask	Account 3 selected
2	Select the "Browse Listings" link from the navigation bar	Browser will be redirected to the "Currently Listed" page	Redirected to browse listings page
3	Select the hyperlink "Item 1" from the "Currently Listed" listing	Browser will be redirected to the "Listing Details" page	Redirected to the listing page for Item 1
4	Select the "Begin Purchase of Listing" button	A "Delivery Address" text box input will appear	Text box shown
5	Enter "Test Address" into the text box and click "Confirm Purchase"	MetaMask will show a "Confirm Transaction" window displaying a transaction for 2.5 ETH (the price of the listing)	Popup displayed with value of 2.5 ETH
	Click "Submit" below the transaction details	The MetaMask window will close and the "Ethereum Status" panel should update with the transaction hash	Transaction hash: 0xe845f67ac7a2b 41e545afb7305 537afa8deb8f3 26f373dfd2f18 32b5f1b8bdd9
	After 5-10 seconds, refresh the page	The page will refresh showing the new escrow details. If the escrow details are not there, wait 5-10 seconds and then refresh the page. This is due to the latency of blocks being mined.	Escrow details section shown

As a user I can fund an escrow for the purchase of a listing

Step Number	Script	Expected Outcome	Actual Result
1	Following the steps from the previous test case, first ensure that the escrow balance displayed is 2.5 ETH (the price of the listing)	The escrow balance will be 2.5 ETH	Balance is 2.5 ETH

2	Open MetaMask, ensuring "Account 3" is selected. Confirm that the balance has decreased by at least 2.5 ETH	The balance of "Account 3" will be below 97.5 ETH	Balance of account 3 is 97.499 ETH

As the buyer of a listing, I can approve the linked escrow.

Step Number	Script	Expected Outcome	Actual Result
1	With "Account 3" selected in MetaMask, select the "My Orders" link from the navigation bar	Browser will be redirected to the "My Orders" page	Redirected to My Orders page
2	Select the hyperlink "Item 1" from the "Currently Listed" listing	Browser will be redirected to the "Listing Details" page	Redirected to listing page for Item 1
3	Scroll to the bottom of the page and select the "Approve Escrow" button	MetaMask will show a "Confirm Transaction" window displaying a transaction for 0 ETH	MetaMask popup shown with correct value of 0 ETH
4	Click "Submit" below the transaction details	The MetaMask window will close and the "Ethereum Status" panel should update with the transaction hash	Transaction hash: 0xfed617c2f4674 3af7aae3b64a 59091de396d 17221f1a2270 139ed45ad7dff699
5	After 5-10 seconds, refresh the page	The page will refresh showing the updated escrow details, which should display "Escrow Approved by Buyer" as true. If the escrow details are not there, wait 5-10 seconds and then refresh the page. This is due to the latency of blocks being mined.	Escrow Approved by Buyer = true

As the seller of a listing, I can approve the linked escrow.

Step Number	Script	Expected Outcome	Actual Result
1	With "Account 2" selected in MetaMask, select the "My Listings" link from the navigation bar	Browser will be redirected to the "My Listings" page	Redirected to My Listings page
2	Select the hyperlink "Item 1" from the "Currently Listed" listing	Browser will be redirected to the "Listing Details" page	Redirected to listing details page of Item 1
3	Scroll to the bottom of the page and select the "Approve Escrow" button	MetaMask will show a "Confirm Transaction" window displaying a transaction for 0 ETH	Popup displayed with value of transaction as 0 ETH
4	Click "Submit" below the transaction details	The MetaMask window will close and the "Ethereum Status" panel should update with the transaction hash	Transaction hash: 0x09456a2c4f9 ca03f942cc064 42c8b85b5695 3e16e8bb1ebf1 999edf9072ab053
5	After 5-10 seconds, refresh the page	The page will refresh showing the updated escrow details, which should display "Escrow Approved by Seller" as true. If the escrow details are not there, wait 5-10 seconds and then refresh the page. This is due to the latency of blocks being mined.	scrow Approved by Seller = true

As a seller, my Ethereum account is funded with the proceeds of a sale once the buyer has approved/finalised the linked escrow, once the listed goods have exchanged possession.

Step Number	Script	Expected Outcome	
1	Following the steps from the previous test case (both buyer and seller have approved the escrow), first	The escrow balance will be 0 ETH	Escrow Balance = 0

	ensure that the escrow balance displayed is 0 ETH		
2	Open MetaMask, ensuring "Account 2" is selected. Confirm that the balance has increased by at least 2.5 ETH	The balance of "Account 2" will be just below 102.5 ETH	Account 2 balance = 102.499 ETH

As the buyer of a listing, I can dispute the linked escrow should an issue with the exchange of physical goods occur.

Step Number	Script	Expected Outcome	Actual Result
1	First create a new listing, ensuring "Account 2" is selected in MetaMask, with the values: Listing Name: "Item 2" Price in Ether: 1.0	A listing will be displayed in the "My Listings" list with the name "Item 2" and a price of "1 ETH" if the page is refreshed	Listing for Item 2 at 1 ETH is displayed
2	Then purchase the listing, ensuring "Account 3" is selected in MetaMask, with the "Delivery Address" of "test address 2"	The listing will be purchased and an escrow created and funded	Item purchased and escrow created and linked as per Listing Details page
3	After 5-10 seconds, refresh the page	The page will refresh showing the updated escrow details. If the escrow details are not there, wait 5-10 seconds and then refresh the page. This is due to the latency of blocks being mined.	Escrow details are displayed
4	Scroll to the bottom of the page and select	MetaMask will show a "Confirm Transaction" window displaying a transaction for 0 ETH	Popup displayed with transaction for 0 ETH

	the “Dispute Escrow” button		
5	Click “Submit” below the transaction details	The MetaMask window will close and the “Ethereum Status” panel should update with the transaction hash	Transaction hash: 0xd274299617f 5c3c6a5b40d5 d78ab13cea8a 40aa1108d797 1c81cf8393595b14a
6	After 5-10 seconds, refresh the page	The page will refresh showing the updated escrow details, which should display “Escrow Disputed” as true. If the escrow details are not there, wait 5-10 seconds and then refresh the page. This is due to the latency of blocks being mined.	Escrow Disputed = true