

“LandChain”

Blockchain-Based Land Record Management System

Built by [ZyverraLabs](#)

Project Status: Prototype / Case Study

Industry:

Real Estate Technology (PropTech)

Project Type:

Blockchain Application

Technology:

Next.js • Node.js • MongoDB • Solidity • Web3.js

Project Overview

LandChain is a secure and transparent Blockchain-Based Land Record Management System designed to modernize land ownership management. The system reduces fraud, data tampering, and manual record-keeping issues by combining blockchain technology with a web-based platform. Users can register land records, verify ownership information, request ownership transfers, and track property history while administrators oversee approvals and maintain system integrity.

Owner Module

The Owner module allows landowners to submit land records, manage properties, create listings, receive transfer requests, approve or reject requests, and monitor ownership history. It provides complete control over property management while ensuring secure ownership validation.

Buyer Module

The Buyer module enables users to browse approved land listings, review property details, submit transfer requests, track request status, view purchased properties, and maintain ownership history. It provides a transparent and user-friendly property acquisition experience.

Administrator Module

The Administrator module serves as the governing authority of the platform. Administrators verify land records, approve or reject ownership transfers, manage listings, oversee users, and ensure that only legitimate transactions are recorded on the blockchain.

Transfer Workflow

1. Owner submits land.
2. Admin verifies and approves.
3. Property appears in marketplace.
4. Buyer submits transfer request.
5. Owner approves or rejects request.
6. Admin performs final approval.
7. Blockchain ownership transfer occurs.
8. Ownership history is permanently recorded.

Project Highlights

- Blockchain Smart Contract
- Ownership Transfer Workflow
- Marketplace Module
- Admin Verification System
- Role-Based Access Control
- JWT Authentication
- Audit Trail
- Transaction History

Key Features

- Blockchain-backed ownership records
- Land registration and verification
- Ownership transfer workflow
- Property marketplace
- Transaction history
- Role-based access control
- Administrative approval system
- Tamper-resistant records

Technology Stack

Frontend: Next.js, TypeScript, Tailwind CSS

Backend: Node.js, Express.js

Database: MongoDB

Blockchain: Solidity, Web3.js, Ganache

Authentication: JWT

Production Upgrade Path

Current:

Ganache (Local Blockchain)

Production:

Polygon

Ethereum

Hyperledger Fabric

Private Enterprise Blockchain

Why Not Live Yet?

The current implementation uses Ganache, a local blockchain environment intended for development and testing. Since Ganache runs only on a local machine, external users cannot access the blockchain over the internet. For production deployment, smart contracts would need to be deployed to a public or private blockchain network.

Conclusion

LandChain delivers a secure, transparent, and efficient solution for land record management. By integrating blockchain technology with a modern web platform, it improves trust, reduces fraud, and simplifies ownership management for buyers, owners, and administrators.

Bring Your Idea to Life with [ZyverraLabs](#)

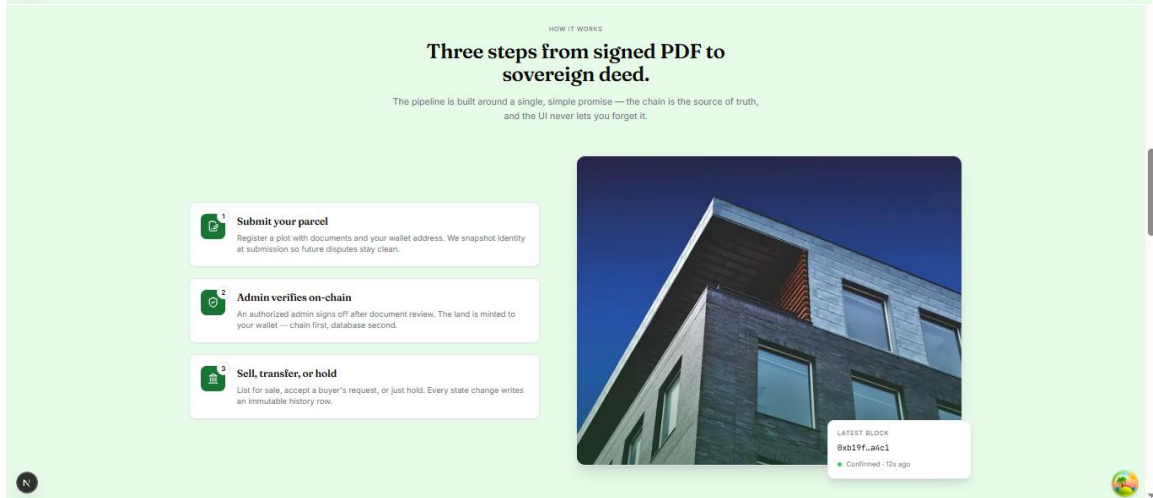
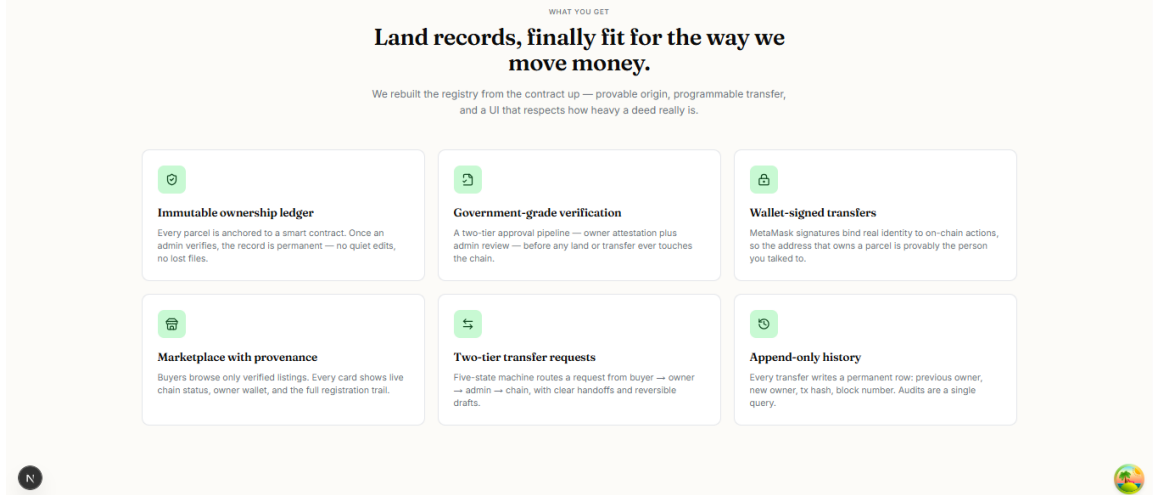
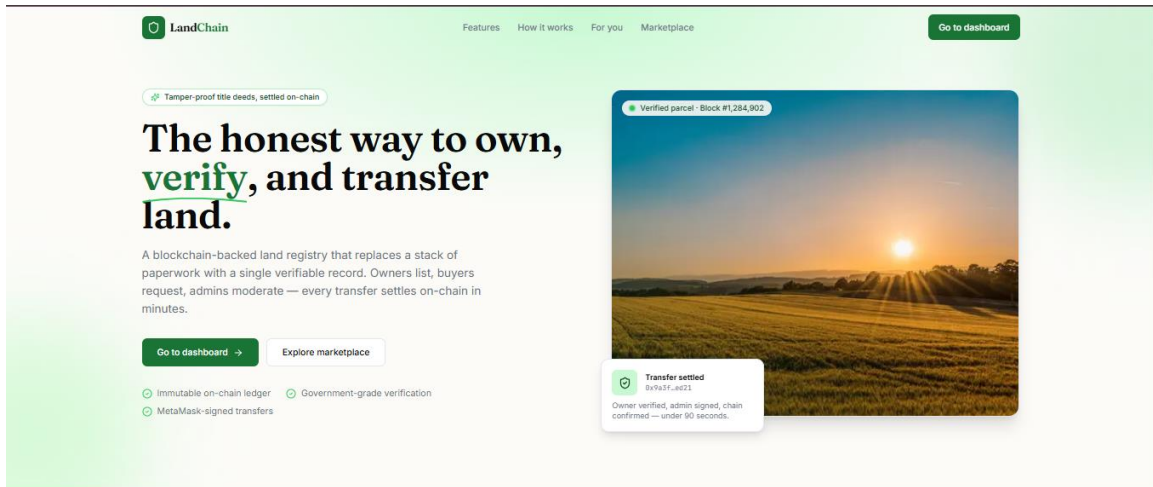
At [ZyverraLabs](#), we don't just build software we transform ideas into real, secure, and scalable digital solutions. If you have a concept, requirement, or vision in mind, our team is ready to help turn it into reality. Whether it's an **AI-powered solution, Web Application, Mobile App, Business Management System, E-commerce Platform, Automation Tool, or any custom software project**, we can design, develop, and deploy it according to your needs. Simply contact us through our **Contact Form** or interact with our **AI Chatbot**, and our team will reach out to you as soon as possible to discuss your requirements. Your idea remains secure and confidential throughout the process, and we work closely with you to ensure it becomes a successful, real-world product. **Your vision, our expertise together we build the future.**

Business Benefits

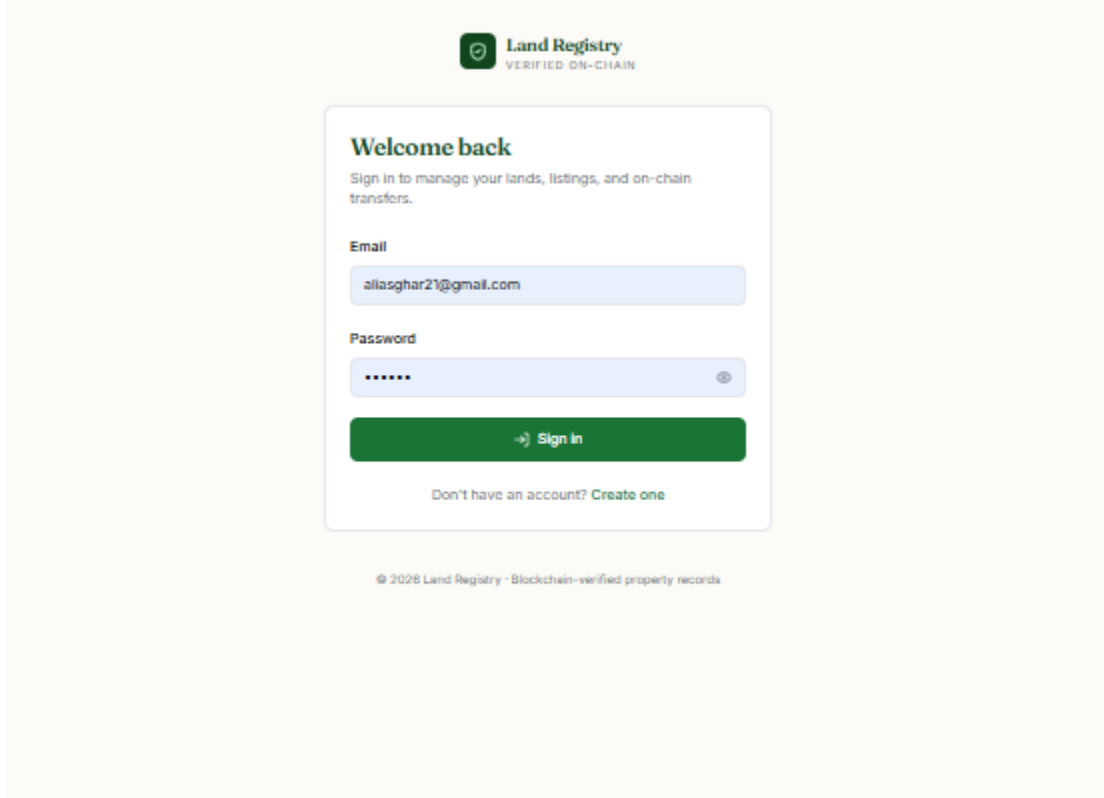
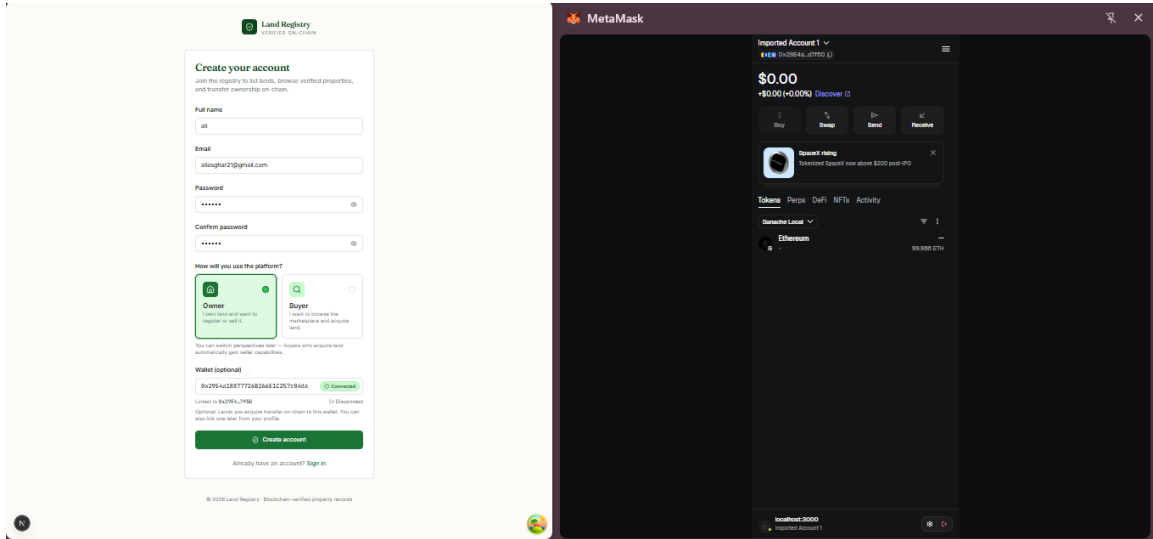
- Reduces land ownership fraud
- Creates transparent ownership history
- Eliminates manual paperwork
- Enables secure ownership transfers
- Improves trust and verification
- Provides tamper-resistant records

Screenshots :

Homepage :



MetaMask Integration:



Land Registry
1234567890

Owner

Dashboard
My Lands
Submit Land
Sale Listings
Requests
Ownership History

My lands

0 lands Refresh Submit land

REGISTRY
All registered plots

No lands yet

Submit a land for verification to start building your portfolio. Approved submissions are recorded on chain.

Submit your first land

Signed In
1234567890

Land Registry
1234567890

Owner

Dashboard
My Lands
Submit Land
Sale Listings
Requests
Ownership History

Submit a new land

Provide the plot details, location, and area. Once submitted, an administrator verifies the document and records ownership on chain.

REGISTRY
Plot details

Plot number
PL-1383
The identifier on your ownership document. Must be unique at this location.

LOCATION
Lahore
City, sector, and any sub-locator that uniquely identifies the plot on the ground.

Area
1000sq.yd
Inside the city. The registry uses this unitless.

What happens after you submit?
Your land enters the verification queue with status Pending. An admin reviews the submission, then records it on chain — at which point the status flips to Approved and the transaction hash appears in your portfolio.

Cancel Submit for verification

Signed In
1234567890

Land Registry
1234567890

Owner

Dashboard
My Lands
Submit Land
Sale Listings
Requests
Ownership History

My lands

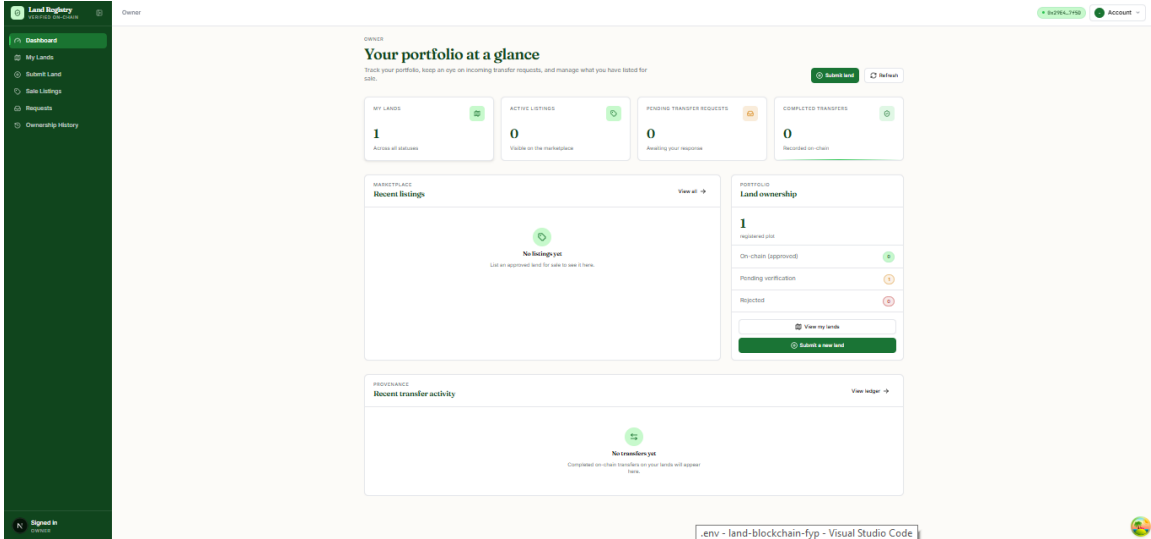
1 land Refresh Submit land

REGISTRY
All registered plots

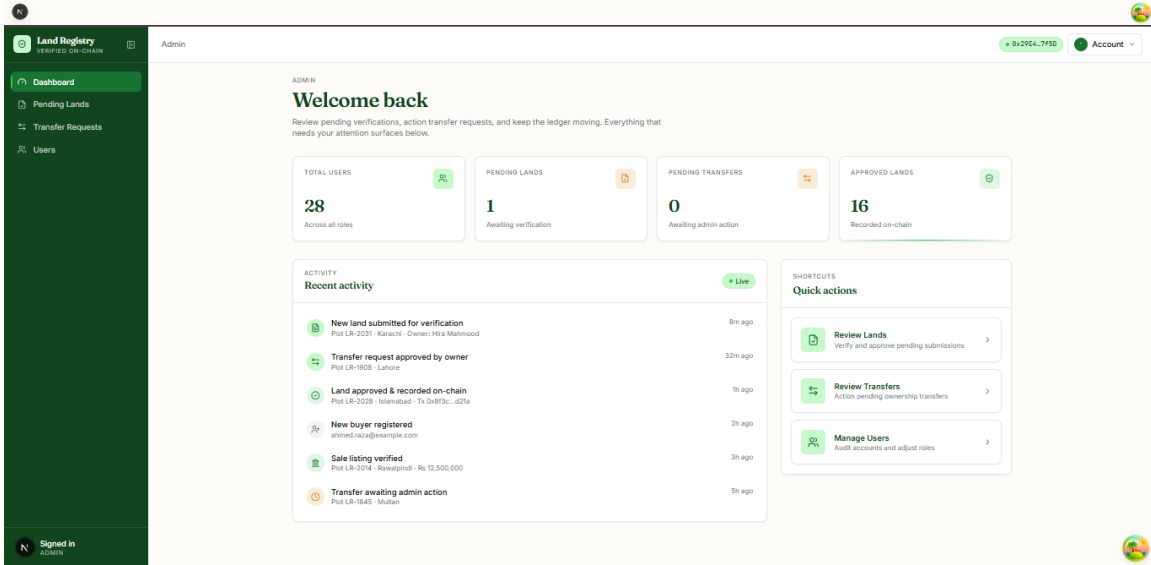
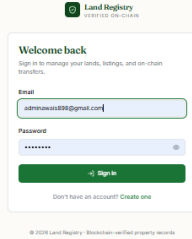
REGISTRY	LOCATION	AREA	STATUS	TX HASH	ACTIONS
PL-1383	Lahore	1000sq.yd	PENDING	—	View Submit land

Land submitted
Pending admin verification — you'll see it in your portfolio.

Signed In
1234567890



.env - land-blockchain-fyp - Visual Studio Code



Land Registry VERIFIED ON-CHAIN Admin 0x29E4.7F5D Account

Dashboard Pending Lands Transfer Requests Users

MODERATION Pending lands

Verify ownership documents and approve submissions to record them on-chain. Rejections require a reason that is shared with the owner. 1 submission Refresh

QUEUE Awaiting verification

OWNER	PLOT	LOCATION	AREA	SUBMITTED	STATUS	ACTIONS
ali aliasghar21@gmail.com 0x29E4.7F5D	PL-3303	lahore	1000sq.yd	Jun 17, 2026	PENDING	Approve Reject

Signed in as ali

Approve land submission

This will record the land on-chain and assign it to the owner. The action cannot be undone.

Owner	ali
Email	aliasghar21@gmail.com
Plot	PL - 3303
Location	lahore
Area	1000sq.yd
Submitted	Jun 17, 2026

Cancel Approve & record

CURRENT BLOCK 21	GAS PRICE 2000000000	GAS LIMIT 6721975	HARDFORK MERGE	NETWORK ID 5777	RPC SERVER HTTP://127.0.0.1:7545	MINING STATUS AUTOMINING	WORKSPACE NOXIOUS-DESK	SWITCH	Settings
---------------------	-------------------------	----------------------	-------------------	--------------------	-------------------------------------	-----------------------------	---------------------------	--------	----------

← BACK **BLOCK 21**

GAS USED 98790	GAS LIMIT 6721975	MINED ON 2026-06-17 11:48:07	BLOCK HASH 0xc8ab123590986014d4c83c74f042a657d105d6e5934f058cb33c7222c8867b29
-------------------	----------------------	---------------------------------	--

TX HASH
0xe978101bdd9b271e87d4c536a396106b73d4839122c6253e21fa130742c92194 CONTRACT CALL

FROM ADDRESS 0x29E4a188777268266E1C257c84da725783Fd7f5D	TO CONTRACT ADDRESS 0xFd7CBed1289dcB04915b8E3dC396f68aE58ae82b	GAS USED 98790	VALUE 0
--	---	-------------------	------------

CURRENT BLOCK 21	GAS PRICE 2000000000	GAS LIMIT 6721975	HARDFORK MERGE	NETWORK ID 5777	RPC SERVER HTTP://127.0.0.1:7545	MINING STATUS AUTOMINING	WORKSPACE NOXIOUS-DESK	SWITCH	Settings
---------------------	-------------------------	----------------------	-------------------	--------------------	-------------------------------------	-----------------------------	---------------------------	--------	----------

TX HASH
0xe978101bdd9b271e87d4c536a396106b73d4839122c6253e21fa130742c92194 CONTRACT CALL

FROM ADDRESS 0x29E4a188777268266E1C257c84da725783Fd7f5D	TO CONTRACT ADDRESS 0xFd7CBed1289dcB04915b8E3dC396f68aE58ae82b	GAS USED 98790	VALUE 0
--	---	-------------------	------------

TX HASH
0x308f52c2d0d648dca58b4b49b9e6d00d7bc0153adbf013c0c31c58b47c0726e CONTRACT CREATION

FROM ADDRESS 0x29E4a188777268266E1C257c84da725783Fd7f5D	CREATED CONTRACT ADDRESS 0xFd7CBed1289dcB04915b8E3dC396f68aE58ae82b	GAS USED 796636	VALUE 0
--	--	--------------------	------------

TX HASH
0xa9ed7f10309f1b1e3313eb63ab4b5ee7e978a12ad26a7Faa48adbeeb16bbbed1b CONTRACT CREATION

FROM ADDRESS 0x29E4a188777268266E1C257c84da725783Fd7f5D	CREATED CONTRACT ADDRESS 0xFF022e6F7cd3679b687FDB21932560251D83a7ce	GAS USED 796636	VALUE 0
--	--	--------------------	------------

TX HASH
0x5fb007370dc6ef106a8b17cb967ed345ded85c1501d98469b432a143405880e1 CONTRACT CALL

FROM ADDRESS 0x29E4a188777268266E1C257c84da725783Fd7f5D	TO CONTRACT ADDRESS 0xae95ee04c8b0Ee0af351402DC3cc35F06293F16c	GAS USED 98838	VALUE 0
--	---	-------------------	------------

Land Registry

- Dashboard
- My Lands**
- Submit Land
- Sale Listings
- Requests
- Ownership History

Signed in
OWNER

Owner 6x2f64...7f50 Account

PORTFOLIO

My lands

Every plot you have registered with the registry, across pending, on-chain, and rejected submissions. Approved lands can be listed on the marketplace.

1 land Refresh Submit land

WOLDOING

All registered plots

Select the only lands using the Modal Search to click the Row

PLOT	LOCATION	AREA	STATUS	TX HASH	ACTIONS
PL-3303	lahore	1000sqyd	APPROVED	0xe978101bdd9b271e87d4c536a396106b73d4839122c6253e21fa130742c92194	View List for sale

[← Back to land](#)

MARKETPLACE

List this land for sale

Confirm the plot you want to put on the marketplace. The submission goes through admin moderation before it goes live.

CONFIRM

Submit for sale

Plot **PL-3303**
Location **lahore**
Area **1000sq.yd**
Status **APPROVED**

🕒 What happens next?

The land enters the marketplace queue with state Pending. An administrator verifies your ownership against the chain. Once approved, the listing becomes Listed and buyers can submit transfer requests against it.

Cancel

Submit for sale



Welcome back

Sign in to manage your lands, listings, and on-chain transfers.

Email

Password

[→ Sign in](#)

[Don't have an account? Create one](#)

© 2026 Land Registry - Blockchain-verified property records

MARKETPLACE

Verified land, listed for sale

Every plot here is registered on-chain and listed by its verified owner. Browse the catalogue, then open a listing to review its provenance.

Showing 1 of 1 [Refresh](#)

Sort: Recently listed

PLT-959 Verified

dha lahore phase 6

- dha lahore phase 6
- 1 Kanal
- 81CECA_2663

Listed May 21, 2026 [View →](#)

Additional marketplace and transfer management modules are available in the internal development environment and can be demonstrated upon request.

Development Evidence & Source Ownership:

```
9 const CONTRACT_ADDRESS =
10   RAM_CONTRACT_ADDRESS && web3.utils.isAddress(RAM_CONTRACT_ADDRESS)
11   ? RAM_CONTRACT_ADDRESS
12   : undefined;
13
14 // ABI for LandRegistry.sol (with admin/registrar access control).
15 const ABI = [
16   { inputs: [], stateMutability: "nonpayable", type: "constructor" },
17   {
18     anonymous: false,
19     inputs: [
20       { indexed: false, internalType: "string", name: "plot", type: "string" },
21       { indexed: false, internalType: "string", name: "location", type: "string" },
22       { indexed: true, internalType: "address", name: "owner", type: "address" },
23     ],
24     name: "LandRegistered",
25     type: "event",
26   },
27   {
28     anonymous: false,
29     inputs: [
30       { indexed: false, internalType: "string", name: "plot", type: "string" },
31       { indexed: false, internalType: "string", name: "location", type: "string" },
32       { indexed: true, internalType: "address", name: "previousOwner", type: "address" },
33       { indexed: true, internalType: "address", name: "newOwner", type: "address" },
34     ],
35     name: "OwnershipTransferred",
36     type: "event",
37   },
38   {
39     anonymous: false,
40     inputs: [
41       { indexed: true, internalType: "address", name: "registrar", type: "address" },
```

```
1 // SPDX-License-Identifier: MIT
2 pragma solidity ^0.8.0;
3
4 /**
5  * @title LandRegistry
6  * @notice Tamper-proof land ownership ledger for the FYP land-record system.
7  * @dev Write access is restricted: only authorized registrars (the backend's
8  * signing account) may register land or transfer ownership. Without
9  * this, any address holding the ABI could rewrite ownership, which
10 * would defeat the "tamper-proof" guarantee of the system.
11 */
12 contract LandRegistry {
13     /// @notice Contract administrator. Set to the deployer in the constructor.
14     address public admin;
15
16     /// @notice Addresses permitted to register land and transfer ownership.
17     mapping(address => bool) public registrars;
18
19     struct Land {
20         string plotNumber;
21         string location;
22         address owner;
23     }
24
25     /// @notice lands[plotNumber][location] => Land record.
26     mapping(string => mapping(string => Land)) public lands;
27
28     event RegistrarUpdated(address indexed registrar, bool authorized);
29     event LandRegistered(string plot, string location, address indexed owner);
30     event OwnershipTransferred(
31         string plot,
32         string location,
33         address indexed previousOwner,
34         address indexed newOwner
```

The image shows a Visual Studio Code editor with two code files open. The top editor displays the code for 'page.tsx' in the 'client' directory. It imports several components from the './_components/home/' directory and defines a 'HomePage' function that returns a JSX element with a grid of these components.

```

1 import { HomeCta } from "../_components/home/home-cta";
2 import { HomeFeatures } from "../_components/home/home-features";
3 import { HomeFooter } from "../_components/home/home-footer";
4 import { HomeHero } from "../_components/home/home-hero";
5 import { HomeHowItWorks } from "../_components/home/home-how-it-works";
6 import { HomeMarketplace } from "../_components/home/home-marketplace";
7 import { HomeNav } from "../_components/home/home-nav";
8 import { HomeRoles } from "../_components/home/home-roles";
9 import { HomeStats } from "../_components/home/home-stats";
10
11 Windsurf: Refactor | Explain | Generate JSDoc | X
12 export default function HomePage() {
13   return (
14     <div className="min-h-screen bg-background">
15       <HomeNav />
16       <main>
17         <HomeHero />
18         <HomeStats />
19         <HomeFeatures />
20         <HomeHowItWorks />
21         <HomeRoles />
22         <HomeMarketplace />
23         <HomeCta />
24       </main>
25       <HomeFooter />
26     </div>
27   );
28 }

```

The bottom editor shows another 'page.tsx' file, likely in the 'admin' directory. It imports 'client' and various UI components from 'lucide-react' and 'sonner', along with custom components from '@/_components/ui/'.

```

1 "use client";
2
3 import * as React from "react";
4 import {
5   CheckCircle2,
6   FileX,
7   Inbox,
8   Loader2,
9   RefreshCw,
10 } from "lucide-react";
11 import { toast } from "sonner";
12 import { Badge } from "@/_components/ui/badge";
13 import { Button } from "@/_components/ui/button";
14 import {
15   Dialog,
16   DialogContent,
17   DialogDescription,
18   DialogFooter,
19   DialogHeader,
20   DialogTitle,
21 } from "@/_components/ui/dialog";
22 import {
23   useAdminListings,
24   useApproveListingMutation,
25 } from "@/_features/admin/hooks/use-admin-listings";
26 import { getDisplayMessage } from "@/_lib/api/error";
27 import { shortAddress } from "@/_lib/blockchain/address";
28 import { cn } from "@/_lib/utils";
29 import type { PendingListing } from "@/_types/admin";
30
31 /**
32  * Admin - Pending Listings - moderation queue for the marketplace.
33  *
34  * Note: moderation since the other admin moderation

```

ZyverraLabs

Interested in Similar Software?

Zyverra Labs

- Custom Software Development
- AI Solutions
- Web Applications
- Mobile Applications
- Business Automation
- and more tech services according to your requirements

Email:

hello.zyverralabs@gmail.com

Website:

zyverralabs.com

LinkedIn:

linkedin.com/company/zyverra-labs