



Building Decentralized Forums

Complete gno.land Boards Tutorial

Create Reddit-like communities on-chain

Manage content with crypto payments







What is gno.land Boards?

Decentralized Bulletin Board System

Like Reddit/Forum but:

-  On blockchain
-  Crypto-native
-  Fully programmable

Core Features:

-  Create topic boards
-  Post threads & replies
-  Tip with \$GNOT
-  Community moderation






Why blockchain forums?

- Censorship-resistant
- User-owned content
- Monetization built-in
- Transparent moderation

How It Works

Technical Foundation

-  Built on Gno blockchain
-  Smart contracts (realms)
-  Managed with `gnokey` CLI

Key Components:

1. `boards.gno` - Core contract
2. `boards_test.gno` - Tests
3. Banker module - Handle payments

```
// Sample contract structure
package boards

type Board struct {
    Name      string
    Moderators []Address
}

type Thread struct {
    ID       int
    Title    string
    Content  string
    Author   Address
    Tips     int // in uGNOT
}
```



Setup Requirements

Tools

```
# Install gnokey  
git clone https://github.com/gnolang/gno  
make install
```

Testnet Funds

```
# Get testnet GNOT  
https://gno.land/faucet
```

Account Setup

```
# Create test account  
gnokey add myacc --recover
```

Environment

```
# Testnet endpoint  
https://testnet.gno.land
```



Board Management

Create Board

```
gnokey maketx call \  
  --pkgpath "gno.land/r/demo/boards" \  
  --func "CreateBoard" \  
  --args "CryptoNews" \  
  --gas-fee 1gnot
```

Add Moderator

```
gnokey maketx call \  
  --func "AddModerator" \  
  --args "CryptoNews" "g1xyz ..."
```



Only board creator can add moderators



Board names are case-sensitive



Content Creation

Create Thread

```
gnokey maketx call \  
  --func "CreateThread" \  
  --args "CryptoNews" "Market Update" \  
         "BTC surged 10% today..." \  
  --gas-fee 1gnot
```

Reply with Tip

```
gnokey maketx call \  
  --func "CreateReply" \  
  --args "CryptoNews" "1" "Great analysis!" \  
  --send "500gnot"
```

✓ 1 GNOT fee prevents spam

Tips go directly to author



Content Management

Edit Thread

```
gnokey maketx call \  
  --func "EditThread" \  
  --args "CryptoNews" "1" \  
    "Updated Market Analysis" \  
    "Revised data ..."
```

Delete Reply

```
gnokey maketx call \  
  --func "DeleteReply" \  
  --args "CryptoNews" "1" "3"
```



Only original authors can edit
Moderators can delete any content

Querying Data

List Boards

```
gnokey query "vm/qeval" \  
--data "gno.land/r/demo/boards"
```

User Activity

```
gnokey query "vm/qeval" \  
--data 'GetUserPosts("g1myaddress ...")'
```

View Thread

```
gnokey query "vm/qrender" \  
--data "gno.land/r/demo/boards/CryptoNews/1"
```

Transaction History

```
gnokey query txs --tags boards
```

Advanced Customization

Change Board Policy

```
gnokey maketx call \  
  --func "SetBoardPolicy" \  
  --args "CryptoNews" \  
  '{"MinThreadFee":"2gnot"}'
```

Karma System

```
// In boards.gno  
func CreateReply(..., reward int) {  
  userKarma[author] += reward  
}
```



Implement custom logic in realm
Modify contract for unique features



Troubleshooting Guide

❌ "insufficient fee"

Solution:

```
--gas-fee 5gnot --gas-wanted 2000000
```

❌ "invalid board"

Solution:

```
gnokey query boards
```

Verify exact name

❌ "permission denied"

Solution:

1. Check moderator status
2. Verify post ownership

❌ "render failed"

Solution:

```
Verify thread exists:  
gno.land/r/demo/boards/BoardName/ID
```



Next Level Enhancements



NFT Avatars User profile pictures



Voting Upvote/downvote system



Staking Premium board access



Web UI React frontend



Bots Automated moderation



Notifications Activity alerts



Verification Checklist

1. ☐ Board created and visible
2. ☐ Thread posted with fee deduction
3. ☐ Reply with successful tip transfer
4. ☐ Edit/delete operations working
5. ☐ Custom policies applied
6. ☐ All queries returning valid data



Live Demo: gno.land/r/demo/boards




Source Code: github.com/gnolang/gno/tree/master/examples/gno.land/r/demo/boards



Resources & Next Steps

Essential Links - [Boards Contract]

(https://github.com/gnolang/gno/blob/master/examples/gnoland/schemefiles/boards_contract.gno)

- [ gno.land API]

(<https://github.com/gnolang/gno/tree/master/cmd/gnoland/docs/api>)

- [ Discord Community]

(<https://discord.gg/gnoland>)

Continue Learning

1. Add user profiles
- 2.

3. Create `tags` categories

4. Build notification system



You've built a decentralized Reddit!