GRC20 and Coins

Token Standards in the Gno Ecosystem

How native coins and tokens differs

How to implement tokens and their use cases

⚙️ Coins

Managed by the `banker` module, separate from GnoVM,

✅ **Native type**
✅ Efficient gas use -- Lightweight
✅ Used for staking, fees

❌ **No custom logic**
❌ Limited dApp usage

🔗 Read the Coin and Bankers Docs

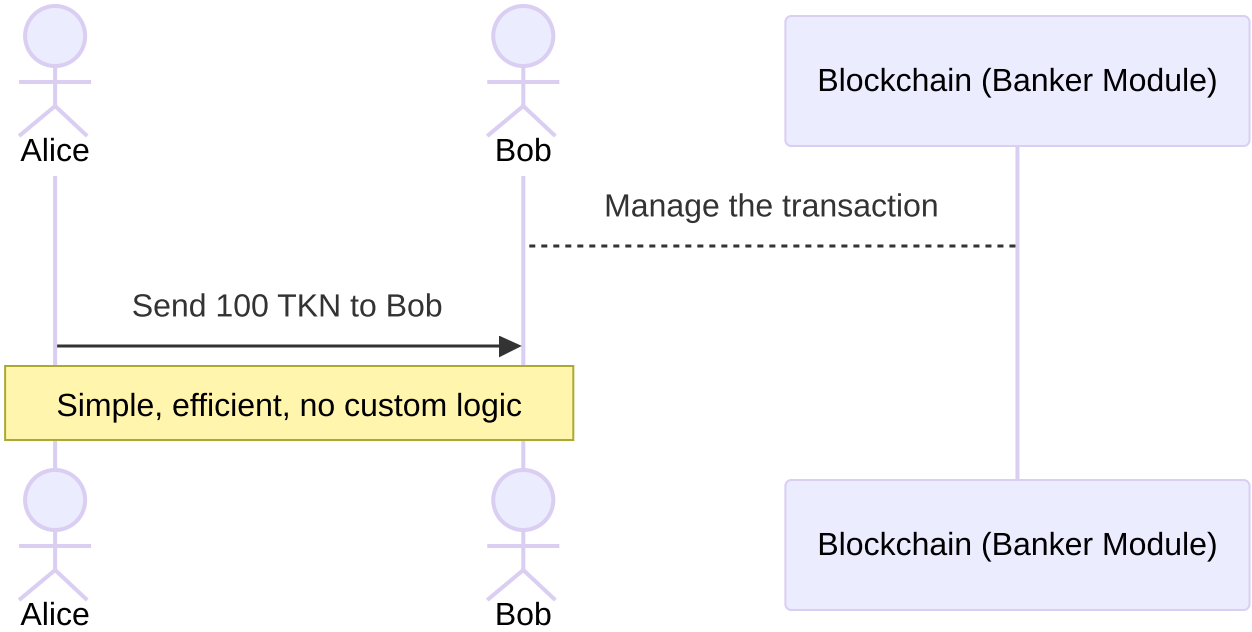
⚙️ Coins

A Coin is a Gno type made of a denomination and an amount.

```
// Defines a basic Coin with a denomination and amount
type Coin struct {
    Denom  string `json:"denom"`  // e.g., "GNOT"
    Amount int64  `json:"amount"` // e.g., 1000
}
```

```
banker.SendCoins(from, to, coins)
banker.IssueCoin(addr, denom, amount)
banker.RemoveCoin(addr, denom, amount)
coins := banker.GetCoins(addr)
```

Coins


Alice
Bob
Blockchain (Banker Module)
Manage the transaction
Send 100 TKN to Bob
Simple, efficient, no custom logic
Alice
Bob
Blockchain (Banker Module)

🧬 GRC20 Tokens

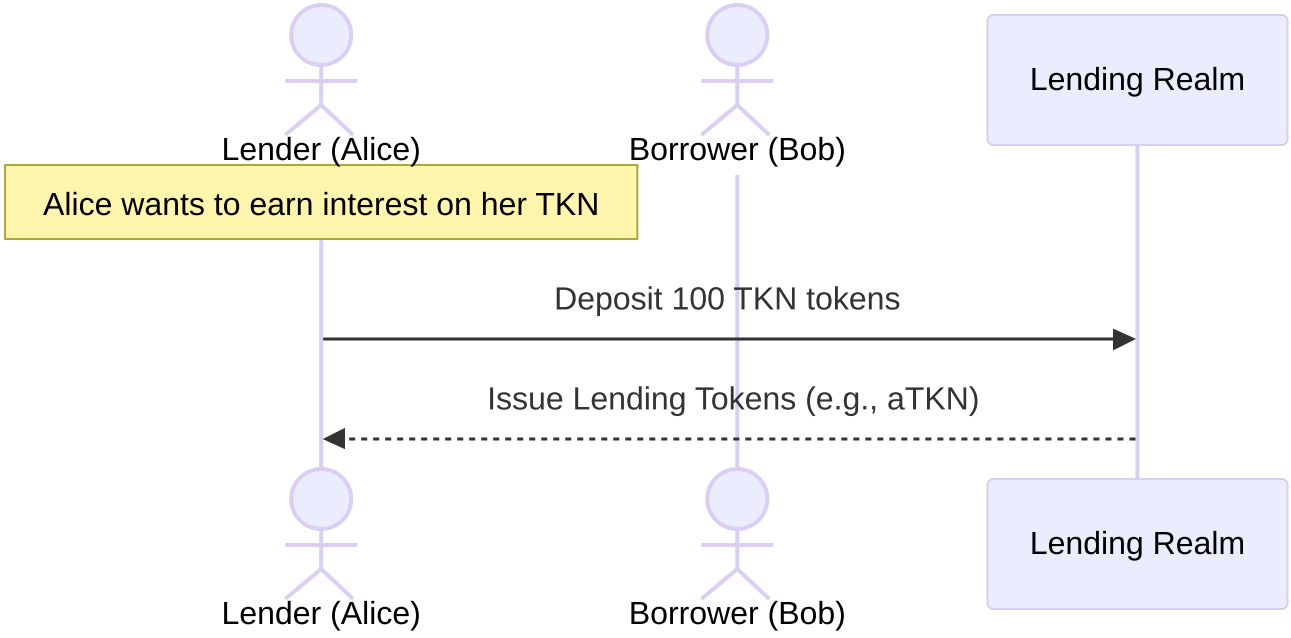
ERC20-style Smart Contracts

- 🔁 **Fungible**, programmable token standard
- ⚙️ Stored and executed in **Gno realm**

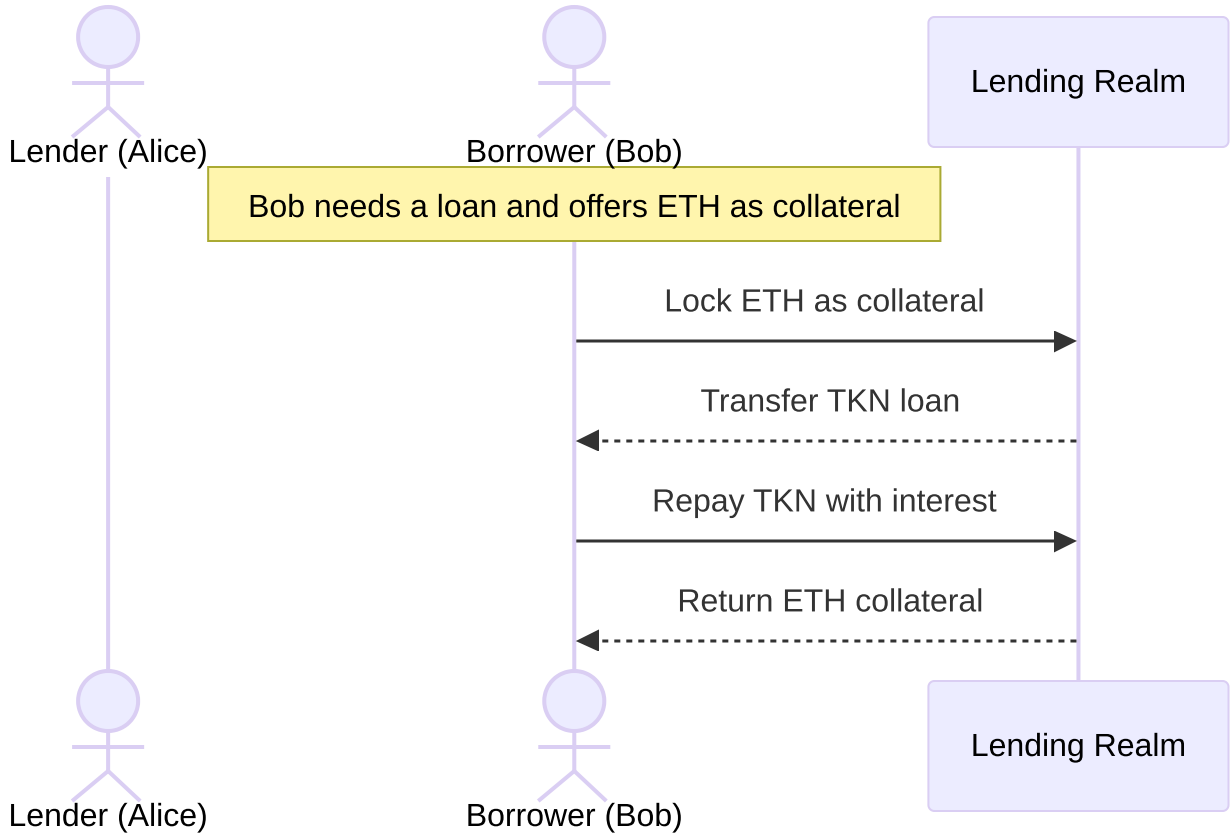
> 💡 **GRC20 = Gno's version of ERC20/CW20**

🛠️ Fully programmable logic on-chain

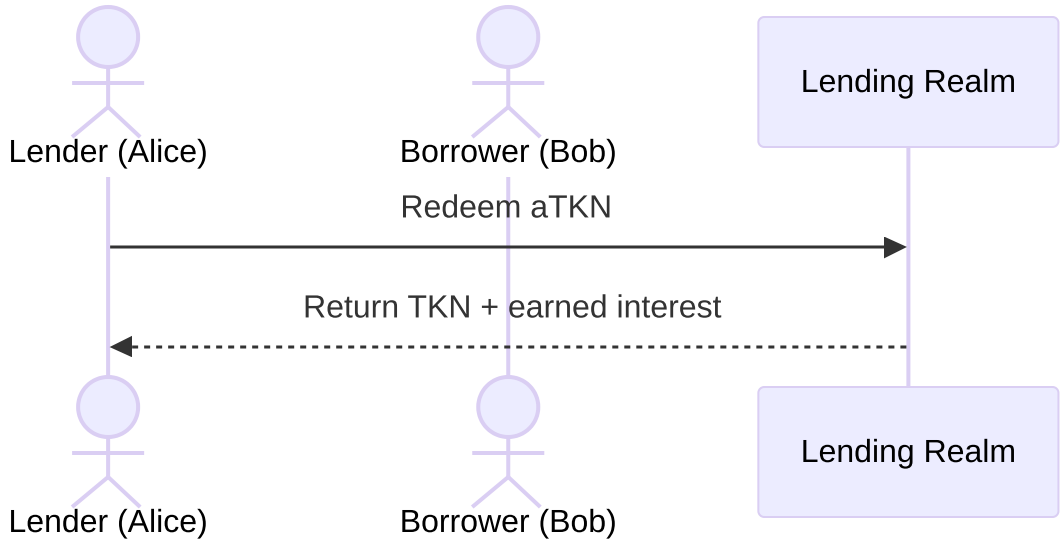
GRC20 Tokens



GRC20 Tokens



GRC20 Tokens



🧬 Why use GRC20 ?

🎟 Use Case 1: Token Gating

🎟 Token Gating

Use GRC20 tokens to:

- 🔐 Unlock gated content
- 🗳️ Access private organizations
- 🎫 Control premium event access

```
if (!hasGRC20(user)) {
  return "Access Denied"
}
```

💰 Use Case 2: Vaults

💰 Vaults: Passive Income

- Deposit GRC20 → Get yield-bearing shares
- 📈 Earn interest as the vault grows
- 🔁 Withdraw anytime with rewards

```
vault.deposit(user, GRC20.amount)
shares = calculateShares(user)
```

♻️ Use Case 3: Wrapping Coins

♻️ Wrapping Native Coins

- 🧃 Works in DeFi (Decentralized Finance)
- 🔁 Composable – Connects to other apps

✅ Enables:

- Liquidity pools
- Lending protocols
- Cross-chain assets

⚔️ Comparison Table

Feature	🪙 Coins (Banker)	🧬 GRC20 Token
Native to chain	✅	❌
Composable in dApps	❌	✅
Custom Logic	❌	✅
Governance Control	Centralized	Decentralized
Efficiency	✅	⚠️ Slight overhead

Coins vs Grc20

🔧 Let’s build our own GRC20

Let’s fill our functions !

```
func init() {}

// Informations
func TotalSupply() uint64 {}
func BalanceOf(owner std.Address) uint64 {}

// Create / Delete
func Mint(to std.Address, amount uint64) {}
func Burn(from std.Address, amount uint64) {}

// Send
func Transfer(to std.Address, amount uint64) {}

// Send from another address
func Allowance(owner, spender std.Address) uint64 {}
func Approve(spender std.Address, amount uint64) {}
func TransferFrom(from, to std.Address, amount uint64) {}
```

🔗 Sources

- 🌐 gno.land
- foo20
- bar20

> 💻 Fully on-chain Gno smart contracts

Read the Coin and Bankers Docs