# Solana Token Launchpad

A comprehensive platform for creating and managing custom tokens on the Solana blockchain, built with React and Vite.

## Overview

The Solana Token Launchpad is a full-featured DApp (Decentralized Application) that enables users to create and manage custom tokens on the Solana blockchain with advanced features like ICO management, automatic token burning, transaction fees, and more. The platform offers a user-friendly interface for token deployment, management, and distribution.

## Features

- **Token Creation**: Create custom SPL tokens with configurable parameters
    - Custom name, symbol, and image URL
    - Configurable initial supply and decimal places
    - Maximum supply limit of 100 crore (1 billion) tokens

- **Token Economics**:
    - Customizable transaction fees
    - Configurable burn percentage on transfers
    - Max supply cap enforcement

- **ICO Management**:
    - Enable/disable ICO functionality
    - Configurable ICO allocation
    - Set token price in SOL
    - Phase management (pre-sale, active sale, post-sale)

- **Token Operations**:
    - Transfer tokens with automatic fee collection and burn
    - Burn tokens to reduce supply
    - Mint additional tokens (up to max supply)

- **Admin Features**:
    - Account freezing
    - Mint authority management

- **Dashboard**:
    - Real-time token supply tracking
    - User balance display
    - Visual supply progress bar

## Technology Stack

- **Frontend**: React.js, JavaScript
- **Blockchain**: Solana
- **Libraries**:
    - `@solana/web3.js` - Solana JavaScript API
    - `@solana/spl-token` - Solana Program Library Token
    - `@solana/wallet-adapter-react` - Solana wallet adapter for React
    - `@solana/spl-token-metadata` - Token metadata management

## Setup Instructions

### Prerequisites

- Node.js (v14 or higher)
- NPM (v6 or higher)
- A Solana wallet (like Phantom, Solflare, etc.)

### Installation

1. Clone the repository

```
git clone https://github.com/yourusername/solana-token-launchpad.git
cd solana-token-launchpad
```

2. Install dependencies

```
npm install
```

3. Start the development server

```
npm run dev
```

4. Open your browser and navigate to `http://localhost:5173`

# Usage Guide

## Creating a Token

1. Connect your Solana wallet using the "Connect Wallet" button
2. Fill in the token details (name, symbol, supply, etc.)
3. Configure token economics (burn rate, transaction fee)
4. Configure ICO settings if needed
5. Click "Create Token" to deploy your token to the Solana blockchain

## Managing ICO

1. After token creation, navigate to the ICO Management section
2. Click "Start ICO" to begin the token sale
3. Users can purchase tokens by entering the amount and clicking "Buy Tokens"
4. Click "End ICO" when the sale is complete

## Token Operations

- **Transfer**: Enter recipient address and amount, then click "Transfer"
- **Burn**: Enter the amount to burn, then click "Burn"
- **Mint**: (Admin only) Enter the amount to mint, then click "Mint More"

# Project Structure

The project follows a modular architecture with separate components for each feature:

```
src/
├── components/
│   └── TokenLaunchpad/
│       ├── index.jsx (main component)
│       ├── TokenCreationForm.jsx
│       ├── ICOManagement.jsx
│       ├── TokenTransfer.jsx
│       ├── TokenBurning.jsx
│       ├── AdminFunctions.jsx
│       └── TokenBalanceHeader.jsx
├── hooks/
│   └── useTokenOperations.js
└── styles/
    └── styles.js
```

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# Contact

For any questions or support, please open an issue in the repository or contact [your contact information].