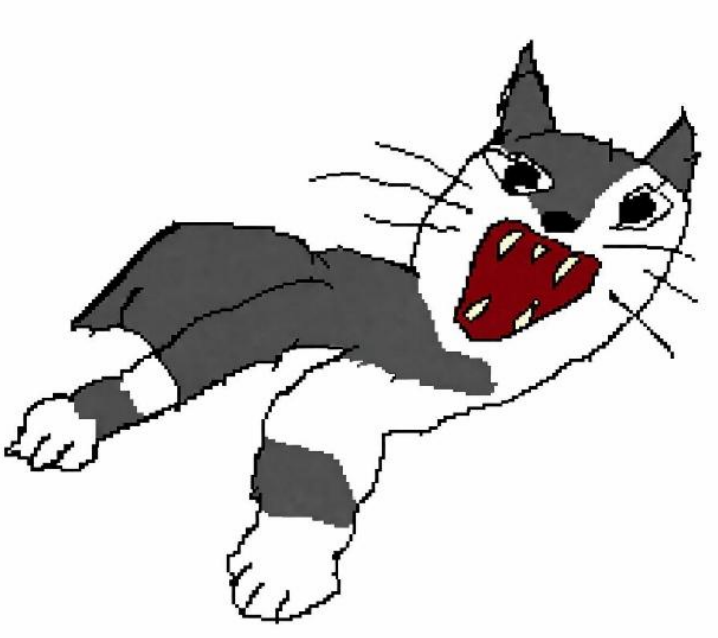
A Project Thesis



WIN95CAT PUMP.FUN CURVE RADAR: A REAL-TIME MONITORING SYSTEM FOR BONDING CURVE COMPLETIONS ON SOLANA

Prepared by: Windows 95 Cat
www.win95cat.com
Date: June 2026

ABSTRACT

The rapid growth of blockchain-based token-launch platforms has created a highly dynamic environment in which new digital assets can be created, traded, and migrated within minutes. Pump.fun is one of the most active token-launch platforms on the Solana blockchain. It allows users to create tokens and initially trade them through an automated bonding curve. When sufficient trading activity completes the curve, the token graduates and migrates to PumpSwap. Monitoring these migrations manually is difficult because many tokens may be created and traded simultaneously. Information about a completed bonding curve can quickly become buried within continuous platform activity. This project introduces **WIN95CAT Pump.fun Curve Radar**, a real-time monitoring system designed to detect and archive Pump.fun token migrations. The system maintains a continuous connection to a public Pump.fun event stream through PumpPortal. A background worker detects migration events, collects token metadata, and stores completed bonding curves in a shared Redis archive. A Vercel-hosted web interface then presents the latest detection and previous records through a retro Windows 95-inspired environment. WIN95CAT Curve Radar does not connect to user wallets, execute trades, or provide automatic purchasing functions. Its purpose is to organize publicly available migration events and make them easier to observe. The project demonstrates how real-time blockchain data can be transformed into an accessible monitoring interface while maintaining a distinctive visual identity.

Keywords: Solana, Pump.fun, bonding curve, token migration, real-time monitoring, PumpPortal, Redis

TABLE OF CONTENTS

1. INTRODUCTİON

Blockchain networks have enabled digital assets to be created and transferred without requiring a traditional financial institution. On Solana, the low transaction costs and high processing capacity of the network have encouraged the development of platforms where users can rapidly create and trade tokens.

This accessibility has also produced a monitoring problem. New tokens appear continuously, and their market conditions can change within seconds. Users attempting to follow these developments manually must repeatedly check token pages, social-media posts, and blockchain explorers. Important events may be missed because the available information is distributed across multiple interfaces.

A significant event in the lifecycle of a Pump.fun token is the completion of its bonding curve. This event indicates that the token has reached the conditions required to migrate from its initial launch environment to PumpSwap. Detecting this transition quickly can help observers identify newly graduated tokens without manually examining every active launch.

The purpose of the WIN95CAT Pump.fun Curve Radar project is to provide a continuously operating and publicly accessible monitoring system for these migrations. Rather than functioning as a trading application, the system acts as an information interface. It detects completed bonding curves, retrieves available token information, and stores previous detections in a shared archive.

2. PUMP.FUN AND TOKEN LAUNCHES

2.1 Pump.fun Platform

Pump.fun is a token-launch platform operating on the Solana blockchain. It reduces the technical requirements associated with creating a token by providing a guided launch process and an integrated initial market.

A creator provides a token name, ticker symbol, image, description, and optional social links. After creation, users may buy and sell the token through its bonding curve. The platform therefore combines token creation, early-stage price discovery, and community formation within a single interface.

This simplified process has increased participation in token creation. However, it has also produced a large and rapidly changing stream of tokens. Because launches vary significantly in quality, activity, and purpose, participation requires independent research and risk assessment.

Pump.fun charges fees for platform activity and identifies a specific graduation event when a token moves from its bonding curve to PumpSwap. This migration event is the primary signal observed by WIN95CAT Curve Radar.

2.2 Structure of Solana Tokens

Tokens created on Solana are generally represented as SPL tokens. Each token is uniquely identified by a **mint address**. The mint account stores information including the total supply, decimal precision, mint authority, and optional freeze authority.

Individual balances are not stored directly inside the mint account. Instead, users hold tokens through separate token accounts connected to the relevant mint. Consequently, the mint address is the most important identifier when distinguishing between tokens that may share identical names or ticker symbols.

Human-readable information such as the token name, symbol, description, website, and image is provided through metadata. Metadata may be stored separately from the token's fundamental on-chain state. As a result, metadata can occasionally be delayed, unavailable, or linked to an inaccessible external resource.

The radar uses the mint address as the primary identifier because names and symbols are not guaranteed to be unique. When available, metadata is collected to make each detected token easier to recognize.

2.3 Token Launch Process

A typical Pump.fun token launch begins when a creator connects a compatible wallet and submits the token's identity and metadata. The platform creates the token and makes it available for trading through a bonding curve.

During the initial stage, participants buy and sell against the curve rather than through a conventional decentralized-exchange liquidity pool. Trading activity changes the token's position on the curve. The platform visually represents this progression as a percentage.

If the bonding curve reaches completion, the token graduates and migrates to PumpSwap. After migration, trading continues through a decentralized-exchange pool. The transition therefore separates the initial launch stage from the token's post-graduation market stage.

Token creation and migration should not be interpreted as indicators of quality or future performance. A completed curve only demonstrates that the platform's required graduation conditions have been reached.

3. BONDİNG CURVE MECHANİSM

3.1 Bonding Curve Progress

A bonding curve is a mathematical pricing mechanism that connects a token's price to its available supply or purchasing activity. Instead of requiring an independent buyer and seller to agree on every transaction, users trade according to the conditions defined by the curve.

As demand increases and more tokens are purchased, the token advances through its bonding curve. Pump.fun represents this movement through a progress percentage. A value of 100 percent indicates that the curve has been completed.

Bonding curves provide an automated method for initial price discovery and token distribution. Nevertheless, they do not eliminate market risk. Prices may change quickly, liquidity conditions can shift after migration, and users may experience substantial losses.

3.2 Graduation and Migration

Graduation occurs when a token completes the bonding curve and satisfies the platform's migration conditions. The token then moves to PumpSwap, where trading is supported by a decentralized liquidity pool.

From a monitoring perspective, migration is more useful than repeatedly checking the progress of every active token. A migration event provides a clear signal indicating that the token has completed the initial launch stage.

WIN95CAT Curve Radar therefore focuses specifically on completed curves. It does not attempt to predict which active tokens will graduate, recommend purchases, or automatically execute transactions. Its role is to report the event after it occurs and preserve the result for later examination.

4. WIN95CAT PUMP.FUN CURVE RADAR

4.1 Project Purpose and Visual Design

WIN95CAT Pump.fun Curve Radar was developed to transform migration events into an accessible public signal feed. Its main objective is to detect completed Pump.fun bonding curves quickly and display the related token information in a consistent format.

The website uses a visual design inspired by Windows 95 and the early internet. Desktop icons, pixel-style typography, bordered windows, and a teal background create the appearance of a forgotten computer that is continuously scanning the Solana network.

This visual identity distinguishes the project from conventional cryptocurrency dashboards. Although the interface is nostalgic, the underlying system processes current real-time blockchain-related data.

Figure 1: WIN95CAT Pump.fun Curve Radar website interface.

The homepage introduces the project and provides access to the RADAR and ARCHIVE windows. The interface also explains that the service does not require a wallet connection and does not include an automatic purchasing system.

4.2 System Architecture

The system consists of four primary components:

- A PumpPortal WebSocket event stream
- A continuously operating Render background worker
- An Upstash Redis shared database
- A Vercel-hosted website and API layer

PumpPortal provides real-time subscriptions for Pump.fun and PumpSwap events, including token creations and migrations. The collector maintains a single WebSocket connection and listens for migration events.

The collector is deployed as a Render background worker. Because the worker runs independently from the website, it can continue collecting events even when no visitor has the webpage open. This solves a major limitation of browser-only monitoring systems.

When a migration is detected, the collector creates a structured record containing the mint address, token name, ticker, transaction signature, destination, detection time, social links, and image when available. The record is then stored in Upstash Redis.

Vercel hosts the public website and its API endpoint. When a user opens the radar, the frontend requests the latest shared records from the API. Secret database credentials remain on the server and are not exposed through the website.

The architecture can be summarized as follows:

PumpPortal WebSocket

↓

Render Background Worker

↓

Upstash Redis Archive

↓

Vercel API

↓

WIN95CAT Website

4.3 Real-Time Detection Process

The worker connects to the PumpPortal real-time API and subscribes to migration events. When a relevant event is received, the mint address is used to identify the token and prevent duplicate records.

The initial migration information may not contain complete metadata. For this reason, the worker attempts to enrich each record by retrieving additional information, including the name, ticker, image, website, X account, and Telegram link. The migration is stored even if part of this metadata is unavailable.

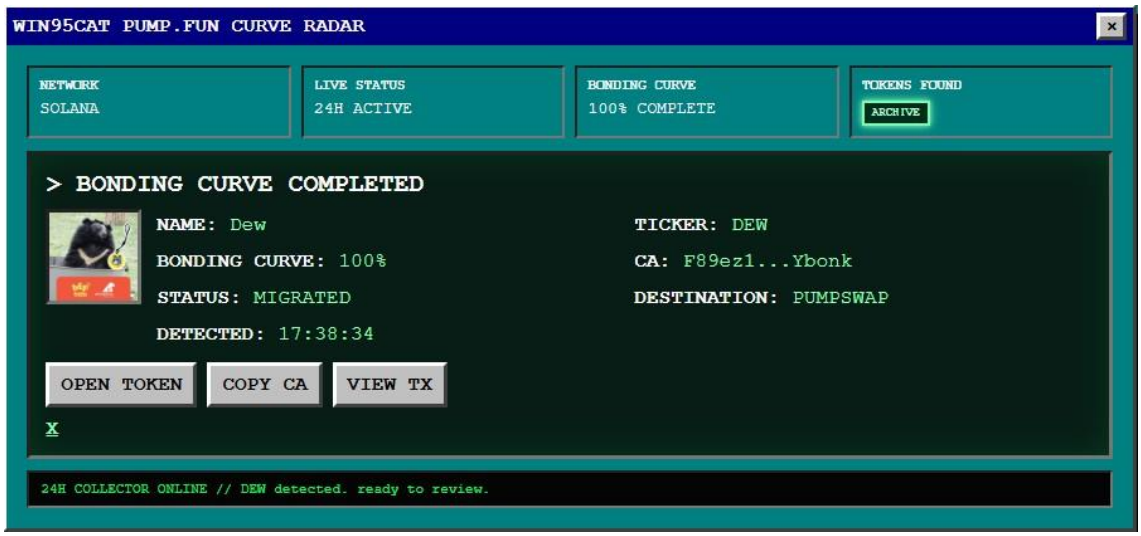
A heartbeat value is regularly written to Redis to indicate that the collector remains online. The frontend uses this value to display the service status. If the WebSocket

connection is interrupted, the continuously deployed worker can reconnect without requiring action from a website visitor.

When the RADAR window is open, the website checks its API at five-second intervals. Polling only begins after the visitor opens the radar, reducing unnecessary server requests from users who are only viewing the homepage.

The latest completed bonding curve is displayed with its token name, ticker, shortened mint address, migration destination, detection time, image, and available external links. Users may open the Pump.fun token page, copy the complete mint address, or inspect the migration transaction.

Figure 2. Real-time bonding curve completion displayed in the RADAR window.



4.4 Radar Interface and Archive

The RADAR window is designed for observing the most recent completion. It provides a compact signal room where new migration records replace the previous primary display.

The ARCHIVE window provides access to earlier detections. Unlike a browser-local history, the archive is shared through Redis. Consequently, visitors using a different device or private browsing session can access the same migration records.

Figure 3. Shared archive of previously detected bonding curve completions.

Pagination divides the archive into manageable groups and prevents the interface from becoming excessively long. Each archived record provides essential identification details and links without requiring the complete mint address to be permanently displayed across the screen.

This separation gives the system two complementary functions: the RADAR emphasizes the newest signal, while the ARCHIVE preserves temporal continuity.

5. TESTİNG, LİMİTATİONS, AND FUTURE DEVELOPMENT

The system was tested through live Pump.fun migration events. During operation, detected migrations appeared on the website shortly after their bonding curves reached completion. Tests also confirmed that records remained available to different browsers and devices through the shared archive.

Several limitations remain. The system depends on the availability and structure of PumpPortal events. Changes to the external event format could require updates to the

collector. Metadata may occasionally be missing because token creators do not provide it, external image links fail, or metadata services respond too slowly.

The system records observed migration events but does not independently verify the legitimacy or safety of a token. Users must conduct their own research before interacting with any detected asset.

Future development may include stronger metadata recovery, alternative image gateways, search and filtering tools, additional launchpad integrations, optional notifications, and improved monitoring of collector health. These additions should preserve the project's informational purpose without introducing automatic trading behavior.

6. CONCLUSİON

WIN95CAT Pump.fun Curve Radar demonstrates how a real-time event stream can be transformed into a continuously operating public monitoring system. The project detects completed Pump.fun bonding curves, enriches migration events with available token metadata, stores them in a shared archive, and presents them through a distinctive retro interface.

Its architecture separates continuous data collection from frontend activity. The Render background worker monitors events independently, Upstash Redis preserves shared records, and Vercel delivers the public API and website. This allows the system to remain active even when no visitor is online.

The project does not attempt to predict prices or automate trading. Instead, it organizes a specific public event and makes it easier to observe. By combining real-time blockchain data with a recognizable visual identity, WIN95CAT Curve Radar provides both a functional monitoring tool and an example of creative interface design.

REFERENCES

Pump. (2026). Pump.fun fees. https://pump.fun/docs/fees

PumpPortal. (2026). Real-time Pump.fun data. https://pumpportal.fun/data-api/real-time

Render. (2026). Background workers. https://render.com/docs/background-workers

Solana Foundation. (2026). Create a token mint. https://solana.com/docs/tokens/basics/create-mint

Solana Foundation. (2026). Tokens on Solana. https://solana.com/docs/tokens

Upstash. (2026). Redis REST API. https://upstash.com/docs/redis/features/restapi

Vercel. (2026). Vercel Functions. https://vercel.com/docs/functions/