



INTERFACE WIREFRAMES — KEY SCREENS

Project: Link Safety Authenticator (URL Scanner)

Date: October 19, 2025

Course: COE 221

⌚ OVERVIEW

This document presents the key user interface screens for the Link Safety Authenticator system. These wireframes demonstrate the complete scanning workflow from URL input to result display, highlighting the core functionality and user experience.

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1. **Screen 1:** Main Scanning Interface (Input)
 2. **Screen 2:** Scanning in Progress
 3. **Screen 3:** Safe Result Display (Green)
 4. **Screen 4:** Unsafe Result Display (Red)
 5. **Screen 5:** Caution Result Display (Yellow)
 6. **Screen 6:** Risk Score Calculation Modal (NEW FEATURE)
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💻 SCREEN 1: MAIN SCANNING INTERFACE

Purpose: Primary entry point where users input URLs for safety scanning

User Action: Paste URLs and click "Scan Links" button

Link Safety Checker

Paste one or more links (one per line). We'll check HTTPS, scan for suspicious wording, count external links, and record the time scanned.

[ⓘ Toggle]

(Multi-line textarea for URL input)

[Scan Links] [Restart] [Clear History]

Examples: 90-100% Very Safe – 80% Safe but with minor concerns – 70% and below Proceed with caution / potentially unsafe

Key Elements:

- **Background:** Dark gradient (navy/blue tones)
- **Title:** "Link Safety Checker" (large, white, centered)
- **Instructions:** Clear white text explaining functionality
- **Textarea:**
 - Dark gray background (#2D3748)
 - Multi-line input (6 rows)
 - Placeholder text (not shown when empty)
 - Toggle button (ⓘ) in bottom-right corner for show/hide
- **Action Buttons (3 buttons):**
 - "Scan Links" - Primary button (blue #3B82F6)
 - "Restart" - Secondary button (darker)
 - "Clear History" - Secondary button (darker)
- **Legend:** Safety score interpretation guide (bottom)

Color Scheme:

- Background: Dark gradient (#1E293B to #3B5A9A)
- Title: #FFFFFF (White)
- Instructions: #CBD5E1 (Light gray)
- Textarea Background: #2D3748 (Dark gray)
- Textarea Text: #F9FAFB (White)
- Textarea Border: #4B5563 (Medium gray)
- Primary Button: #3B82F6 (Blue)
- Secondary Buttons: #475569 (Dark gray)
- Legend Text: #94A3B8 (Light gray)

User Flow:

1. User lands on homepage with dark gradient background
2. Reads instructions about what the scanner checks
3. Pastes URL(s) into textarea (one per line)
4. Can toggle visibility with eye icon
5. Clicks "Scan Links" button
6. System transitions to scanning phase

Interactive Elements:

- Textarea expands as user types
- Toggle button shows/hides URL text
- Scan button becomes disabled during scanning
- Restart clears input and results
- Clear History removes scan history

⌚ SCREEN 2: SCANNING IN PROGRESS

Purpose: Provide visual feedback during URL analysis

User Action: Wait for scan completion (1-2 seconds)

Link Safety Checker

Paste one or more links (one per line). We'll check HTTPS, scan for suspicious wording, count external links, and record the time scanned.

`https://www.messenger.com/e2ee/t/9489423491106310`

[ Toggle]

(Textarea with URL input and visibility toggle)

[Scan Links] [Restart] [Clear History]

Scanning (0/1)...

Examples: 90-100% Very Safe – 80% Safe but with minor concerns – 70% and below Proceed with caution / potentially unsafe

Key Elements:

- **Title:** "Link Safety Checker" (large, centered)
- **Instructions:** Clear guidance text above textarea
- **Textarea:** URL input field with entered link visible
- **Toggle Button:** Eye icon () for show/hide URL visibility
- **Action Buttons:** "Scan Links" (primary), "Restart", "Clear History"
- **Progress Text:** "Scanning (0/1)..." below buttons
- **Legend:** Safety score interpretation guide at bottom

Visual States:

- **Before Scan:** Buttons enabled, textarea editable
- **During Scan:** "Scanning (0/1)..." text appears, buttons disabled
- **Progress Counter:** Shows current/total URLs being scanned

Color Scheme:

- Background: Dark gradient (navy to blue)
- Textarea: #2D3748 (Dark gray)
- Buttons: #3B82F6 (Blue) for primary action

- Text: #F9FAFB (White/light gray)
- Progress Text: #60A5FA (Light blue)

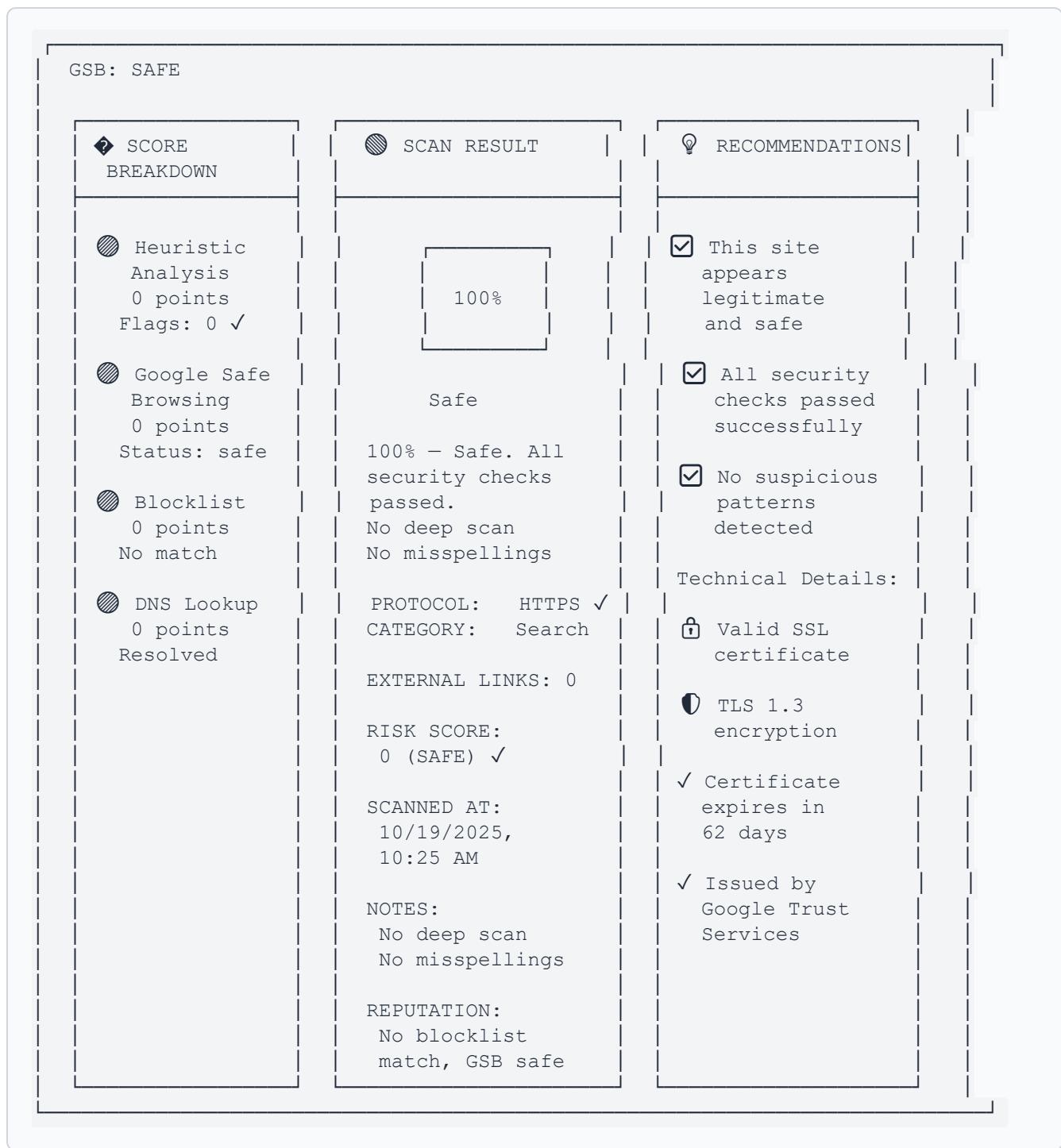
Technical Details:

- Duration: 500ms - 2000ms per URL
 - Counter updates: (0/1) → (1/1) → Results shown
 - Smooth transition to results screen
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SCREEN 3: SAFE RESULT DISPLAY

Purpose: Show successful scan with no security threats detected

Status: SAFE (Green theme)



Key Elements:

- 3-Column Layout:** Score Breakdown (green) | Scan Result (dark) | Recommendations (blue)
- Score Breakdown Panel:** All checks show 0 points with green checkmarks
- Scan Result Panel:** Large 100% circle (green), "Safe" status, detailed info
- Recommendations Panel:** All positive (✓), SSL/TLS details
- Status Badge:** "GSB: SAFE" at top

Color Scheme (Light Mode):

- Score Breakdown Border: #10B981 (Green)

- Scan Result Background: #1E293B (Dark navy)
 - Recommendations Border: #3B82F6 (Blue)
 - Risk Circle: #10B981 (Green for safe)
 - Text: #F9FAFB (White on dark panels)
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SCREEN 4: UNSAFE RESULT DISPLAY

Purpose: Show critical security threats detected

Status: UNSAFE (Red theme)

GSB: UNSAFE (DERIVED)

 SCORE BREAKDOWN

 Heuristic Analysis
50 points
Flags: 1 

 Google Safe Browsing
100 points
Status: safe

 Blocklist
100 points
No match

 DNS Lookup
100 points
Resolved

 SCAN RESULT

10%

Very Unsafe

10% - Extremely Unsafe. Multiple severe indicators.
Key signals: No misspellings, few external links

PROTOCOL: HTTP
CATEGORY: General

EXTERNAL LINKS: 1 

RISK SCORE:
100 (UNSAFE) 

SCANNED AT:
10/18/2025,
5:32:01 PM

NOTES:
No misspellings, few external links

REPUTATION:
no blocklist match, GSB unsafe (derived)

 RECOMMENDATIONS

 Exercise caution when visiting this site.

 Multiple risk indicators detected.

 Site uses HTTP - data not encrypted

Suggested Actions:

- Avoid entering personal info
- Verify site legitimacy
- Check for HTTPS before entering sensitive data
- Look for trust indicators

Technical Context:

 No HTTPS encryption - data sent in plain text

Key Elements:

- 3-Column Layout:** Score Breakdown (green) | Scan Result (dark) | Recommendations (blue)
- Score Breakdown Panel:** Individual scores for Heuristics, GSB, Blocklist, DNS
- Scan Result Panel:** Large percentage circle (10%), detailed metrics, protocol info
- Recommendations Panel:** Warning icons, suggested actions, technical context
- Status Badge:** "GSB: UNSAFE (DERIVED)" at top

Color Scheme:

- Score Breakdown Panel: #10B981 (Green border)
 - Scan Result Panel: #1E293B (Dark navy background)
 - Recommendations Panel: #3B82F6 (Blue border)
 - Risk Circle: #EF4444 (Red for unsafe)
 - Text: White on dark, Dark gray on light
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SCREEN 5: CAUTION RESULT DISPLAY

Purpose: Show moderate security concerns requiring user awareness

Status: CAUTION (Yellow/Orange theme)

GSB: CAUTION (MIXED INDICATORS)

SCORE BREAKDOWN	SCAN RESULT	RECOMMENDATIONS
<ul style="list-style-type: none"> Heuristic Analysis 15 points Flags: 1 Google Safe Browsing 0 points Status: safe Blocklist 0 points No match DNS Lookup 0 points Resolved 	 Not Safe 45% – Not Safe. Significant red flags detected (Suspicious TLD, many external links) PROTOCOL: HTTPS ✓ CATEGORY: General EXTERNAL LINKS: 25 RISK SCORE: 55 (CAUTION) SCANNED AT: 10/19/2025, 2:15 PM NOTES: Suspicious TLD, many external links detected REPUTATION: No blocklist match, GSB safe	 Exercise caution – some concerns detected Uses a less common TLD (.xyz) – extra vigilance Valid SSL certificate found Suggested Actions: <ul style="list-style-type: none"> Verify source before entering personal info Check for trust indicators Be cautious with .xyz domains Technical Context: <ul style="list-style-type: none"> TLD Risk: .xyz commonly used in phishing/scam sites SSL valid but verify content

Key Elements:

- 3-Column Layout:** Score Breakdown (green/yellow) | Scan Result (dark) | Recommendations (blue)
- Score Breakdown Panel:** Mixed scores - Heuristics flagged (15 pts), others safe
- Scan Result Panel:** 45% circle (yellow/orange), mixed verdict
- Recommendations Panel:** Warning icons () , caution messages, context about TLD
- Status Badge:** "GSB: CAUTION (MIXED INDICATORS)" at top

Color Scheme:

- Score Breakdown Border: #F59E0B (Orange/Yellow for mixed)
 - Scan Result Background: #1E293B (Dark navy)
 - Recommendations Border: #3B82F6 (Blue)
 - Risk Circle: #F59E0B (Orange for caution)
 - Warning Background: #FEF3C7 (Light yellow)
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SCREEN 6: RISK SCORE CALCULATION MODAL

Purpose: Detailed breakdown of risk score calculation (NEW FEATURE)

Trigger: Click on "Risk Score" box in any result screen

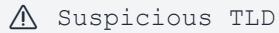
RISK SCORE CALCULATION

[X]

URL: <https://instagram.com>
Final Risk Score: 67 (High Risk) | Safety: 33%

⌚ STEP 1: URL Pattern Analysis (Heuristics)

Analyzing URL for suspicious patterns...



Points: +15

Impact: Moderate risk

Total Heuristic Score: 15 points | Flags Detected: 1

⌚ STEP 2: Base Safety Calculation

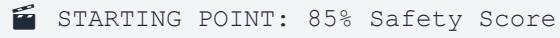
Formula: Base Safety = 100% - Heuristic Score

Calculation: 100% - 15 points = 85%

Base Safety Score: 85%

⌚ STEP 3: Apply ALL Penalties & Adjustments

[EXPANDED]



⚠ 1. Many External Links -12.0%
30 external links detected (> 20 threshold)
Calculation: 85% - 12% = 73%

⚠ 2. Misspellings Detected -10.0%
3 common brand misspellings found
Calculation: 73% - 10% = 63%

⚠ 3. Additional Adjustments -30.0%
Other risk factors detected
Calculation: 63% - 30% = 33%



Start: 85%
-12% External Links → 73%
-10% Misspellings → 63%
-30% Adjustments → 33%

FINAL SAFETY: 33%

STEP 4: Final Risk Calculation

Formula: Risk Score = 100 - Final Safety
 Calculation: 100 - 33% = 67
 Risk Level: HIGH RISK (50-75 range)
 Status: ⚠ CAUTION

Final Risk Score: 67

[Close]

Key Features (NEW ENHANCEMENT):

- Step 1:** Heuristic flags with point values
- Step 2:** Base safety calculation formula
- Step 3:** DETAILED penalty breakdown with individual formulas
- Step 4:** Final risk conversion

Innovation Highlights:

- Complete transparency in calculation
- Each penalty shown individually
- Progressive calculation (85% → 73% → 63% → 33%)
- Educational value for users



DESIGN SPECIFICATIONS

Color Palette:

Light Mode:

- Background: #FFFFFF (White)
- Text Primary: #1F2937 (Dark Gray)
- Safe/Green: #10B981 (Emerald)
- Caution/Yellow: #F59E0B (Amber)
- Unsafe/Red: #EF4444 (Red)
- Accent/Blue: #3B82F6 (Blue)

Dark Mode:

- Background: #111827 (Dark Blue-Gray)
- Text Primary: #F9FAFB (Off-White)
- Safe/Green: #34D399 (Bright Emerald)
- Caution/Yellow: #FBBF24 (Bright Amber)
- Unsafe/Red: #F87171 (Bright Red)

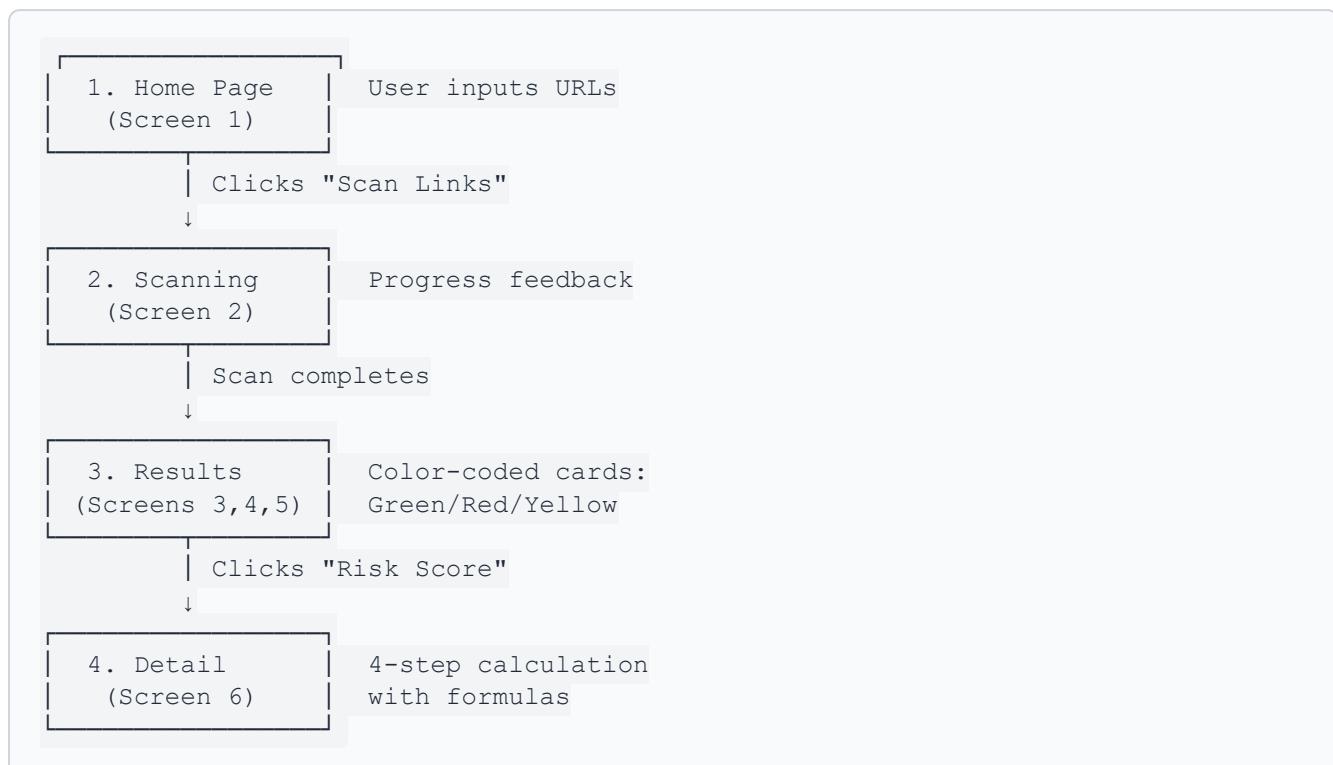
Typography:

- Main Title: 36px, Bold
- Section Headings: 24px, Semibold
- Body Text: 16px, Regular
- Formulas: 14px, Monospace

Layout:

- Container Max Width: 1200px
- Card Padding: 20px
- Border Radius: 12px (cards), 8px (buttons)

⌚ USER FLOW SUMMARY



SCREEN SUMMARY TABLE

Screen	Status	Color	Purpose
1	Input	Blue	URL entry
2	Processing	Blue	Progress
3	Safe	Green	No threats
4	Unsafe	Red	Danger
5	Caution	Yellow	Moderate risk
6	Details	Purple	Calculation

DOCUMENT INFORMATION

Team:

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END OF WIREFRAME DOCUMENTATION