Website Audit Tool - Product Requirements Document (PRD)

1. Executive Summary

1.1 Product Overview

The Website Audit Tool is a comprehensive web application that provides users with detailed insights about any website's performance, SEO metrics, technical health, and competitive landscape. Users can generate customizable reports that can be exported in multiple formats for client presentations or internal analysis.

1.2 Key Value Proposition

- **Comprehensive Analysis**: One-stop solution for website auditing across 6 key areas
- **Customizable Reports**: Users can select specific sections based on their needs
- **Export Flexibility**: PDF and Excel export options for professional reporting
- **Real-time Data**: Live analysis of website performance and metrics
- **User-friendly Interface**: Intuitive design suitable for both technical and non-technical users

2. Product Goals & Objectives

2.1 Primary Goals

- Provide comprehensive website audit capabilities in a single platform
- Enable users to generate professional, exportable reports
- Deliver actionable insights for website optimization
- Streamline the website analysis workflow for agencies and businesses

2.2 Success Metrics

- User engagement: Average session duration > 5 minutes
- Report generation: > 80% of users generate at least one complete report
- User retention: > 60% of users return within 30 days
- Export usage: > 70% of reports are exported

3. User Stories & Requirements

3.1 Core User Journey

1. **Authentication**: User logs into the system
2. **URL Input**: User enters a website URL to audit
3. **Section Selection**: User customizes report sections using checkboxes

4. **Audit Execution**: System performs comprehensive analysis

5. **Report Generation**: User views detailed audit results

6. **Export**: User exports report in preferred format (PDF/Excel)

3.2 Detailed Functional Requirements

3.2.1 Authentication & Access

- **REQ-001**: User must authenticate to access the system

- **REQ-002**: System shall maintain user sessions securely

- **REQ-003**: Users shall have personalized dashboards

3.2.2 URL Input & Validation

- **REQ-004**: System shall provide a prominent URL input field

- **REQ-005**: System shall validate URL format and accessibility

- **REQ-006**: System shall handle various URL formats (with/without protocols)

- **REQ-007**: System shall provide error messages for invalid/inaccessible URLs

3.2.3 Report Customization

- **REQ-008**: System shall display checkboxes for all 6 audit sections

- **REQ-009**: All sections shall be selected by default

- **REQ-010**: Users shall be able to toggle individual sections on/off

- **REQ-011**: System shall save user preferences for future audits

4. Feature Specifications

4.1 Section 1: Traffic Insights

4.1.1 Description

This section provides comprehensive traffic analysis including organic search performance, paid advertising metrics, and geographical distribution of visitors.

4.1.2 Data Points

- **Average Monthly Organic Traffic**: Estimated monthly organic search visitors

- **Average Monthly Paid Traffic**: Estimated monthly paid advertising traffic

- **Branded Monthly Organic Traffic**: Traffic from searches containing business name

- **Geographic Distribution**: Top countries/regions of website visitors

4.1.3 Technical Requirements

- **REQ-012**: Integrate with traffic estimation APIs (SEMrush, Ahrefs, or SimilarWeb)
- **REQ-013**: Display traffic data in visual charts and numerical format
- **REQ-014**: Show traffic trends over time (3-6 months)
- **REQ-015**: Identify branded vs. non-branded traffic patterns

4.2 Section 2: Keywords

4.2.1 Description

Comprehensive keyword analysis showing both branded and non-branded keyword performance with competitive intelligence.

4.2.2 Data Points

- **Branded Keywords Count**: Number of keywords containing business name
- **Non-branded Keywords Count**: Number of generic industry keywords
- **Top 5 Competitors**: Identified through non-branded keyword overlap

4.2.3 Technical Requirements

- **REQ-016**: Analyze on-page content for keyword density and usage
- **REQ-017**: Distinguish between branded and non-branded keywords
- **REQ-018**: Use web scraping/API to identify top 5 competitors
- **REQ-019**: Display keyword performance metrics (ranking, volume, difficulty)

4.3 Section 3: Website Performance

4.3.1 Description

Core Web Vitals assessment providing critical performance metrics for both desktop and mobile experiences.

4.3.2 Data Points

- **Largest Contentful Paint (LCP)**: Loading performance
- **Cumulative Layout Shift (CLS)**: Visual stability
- **Interaction to Next Paint (INP)**: Responsiveness
- **Pass/Fail Status**: For both desktop and mobile

4.3.3 Technical Requirements

- **REQ-020**: Integrate with Google PageSpeed Insights API
- **REQ-021**: Test both desktop and mobile performance

- **REQ-022**: Provide clear pass/fail indicators based on Google thresholds
- **REQ-023**: Show performance improvement recommendations

4.4 Section 4: Authority & Backlinks

4.4.1 Description

Domain authority assessment and comprehensive backlink profile analysis with advanced filtering and export capabilities.

4.4.2 Data Points

- **Domain Authority Score**: Overall domain strength rating
- **Backlink Profile Table**: Comprehensive list of linking domains
- **Filterable Metrics**: Domain authority, spam score, link type, anchor text

4.4.3 Technical Requirements

- **REQ-024**: Integrate with backlink analysis APIs (Moz, Ahrefs, or Majestic)
- **REQ-025**: Implement paginated table for backlink data
- **REQ-026**: Provide filtering options for multiple metrics
- **REQ-027**: Include dedicated PDF and Excel export for this section

4.5 Section 5: Technical Audit

4.5.1 Description

Comprehensive technical SEO analysis covering site structure, image optimization, and common SEO issues.

4.5.2 Data Points

- **Total Page Count**: Number of pages on the website
- **Site Map Structure**: Visual representation of site hierarchy
- **Image Analysis**: Images over 100KB with optimization recommendations
- **Technical Issues**: HTTP errors, missing meta elements, heading structure

4.5.3 Technical Requirements

- **REQ-028**: Crawl website to count total pages
- **REQ-029**: Generate interactive sitemap in new window/modal
- **REQ-030**: Analyze all images for file size optimization
- **REQ-031**: Scan for common technical SEO issues:
  - Missing meta titles

- Missing meta descriptions

- Missing H1 tags

- Missing H2 tags

- HTTP status code errors

4.6 Section 6: Technology Stack

4.6.1 Description

Identification of technologies, frameworks, and platforms used in website construction.

4.6.2 Data Points

- **Content Management System**: WordPress, Drupal, custom, etc.

- **Page Builder**: Elementor, Divi, Gutenberg, etc.

- **E-commerce Platform**: WooCommerce, Shopify, Magento, etc.

- **Other Technologies**: Analytics, hosting, CDN, etc.

4.6.3 Technical Requirements

- **REQ-032**: Use technology detection APIs (Wappalyzer, BuiltWith)

- **REQ-033**: Categorize technologies by type (CMS, e-commerce, analytics)

- **REQ-034**: Provide version information where available

5. Technical Architecture

5.1 Frontend Framework

- **Technology**: Next.js 14+ with App Router

- **Styling**: Tailwind CSS for responsive design

- **Components**: React components with TypeScript

- **State Management**: React Context API or Zustand for complex state

5.2 Backend & APIs

- **Runtime**: Next.js API routes with Edge functions

- **Database**: PostgreSQL with Prisma ORM

- **Authentication**: NextAuth.js with multiple providers

- **File Storage**: Cloudflare R2 for report storage

5.3 Hosting & Deployment

- **Platform**: Cloudflare Pages

- **CDN**: Cloudflare's global network

- **Database**: Cloudflare D1 or external PostgreSQL

- **Monitoring**: Cloudflare Analytics and Web Vitals

5.4 Third-party Integrations

- **SEO APIs**: SEMrush, Ahrefs, or Moz for traffic/keyword data

- **Performance**: Google PageSpeed Insights API

- **Technology Detection**: Wappalyzer API

- **Export Libraries**: jsPDF, ExcelJS for report generation

6. User Interface Requirements

6.1 Layout & Navigation

- **REQ-035**: Responsive design supporting desktop, tablet, and mobile

- **REQ-036**: Clean, professional interface suitable for business use

- **REQ-037**: Progress indicators during audit execution

- **REQ-038**: Intuitive navigation between report sections

6.2 Input Interface

- **REQ-039**: Prominent URL input field with validation feedback

- **REQ-040**: Section selection checkboxes with clear labels

- **REQ-041**: Visual preview of selected sections

- **REQ-042**: "Start Audit" button with loading states

6.3 Report Display

- **REQ-043**: Organized sections with clear headings and descriptions

- **REQ-044**: Visual charts and graphs for data representation

- **REQ-045**: Collapsible sections for better information hierarchy

- **REQ-046**: Print-friendly layout for report viewing

6.4 Export Interface

- **REQ-047**: Export buttons prominently displayed

- **REQ-048**: Format selection (PDF/Excel) with preview options

- **REQ-049**: Progress indicator during export generation

- **REQ-050**: Success confirmation with download links

7. Performance Requirements

7.1 Speed & Responsiveness

- **REQ-051**: Page load time < 3 seconds on average
- **REQ-052**: Audit completion time < 2 minutes for standard websites
- **REQ-053**: Report generation time < 30 seconds
- **REQ-054**: Export generation time < 15 seconds

7.2 Scalability

- **REQ-055**: Support for 1000+ concurrent users
- **REQ-056**: Handle websites with up to 10,000 pages
- **REQ-057**: Process multiple audits simultaneously per user

8. Security Requirements

8.1 Data Protection

- **REQ-058**: Secure authentication with encrypted sessions
- **REQ-059**: HTTPS enforcement across all pages
- **REQ-060**: User data encryption at rest and in transit
- **REQ-061**: GDPR compliance for EU users

8.2 Input Validation

- **REQ-062**: Server-side validation for all user inputs
- **REQ-063**: Protection against common web vulnerabilities (XSS, CSRF)
- **REQ-064**: Rate limiting for API endpoints

9. Content & Messaging

9.1 Section Descriptions

Each audit section should include a brief, informative paragraph explaining:

- What the section analyzes
- Why it's important for website success
- How to interpret the results

9.2 Error Handling

- **REQ-065**: Clear error messages for failed audits
- **REQ-066**: Helpful suggestions for resolving common issues
- **REQ-067**: Graceful degradation when partial data is unavailable

10. Quality Assurance

10.1 Testing Requirements

- **Unit Testing**: 80%+ code coverage for critical functions

- **Integration Testing**: API endpoints and third-party integrations

- **E2E Testing**: Complete user workflows from login to export

- **Performance Testing**: Load testing under expected traffic

10.2 Browser Support

- **Modern Browsers**: Chrome, Firefox, Safari, Edge (latest 2 versions)

- **Mobile Browsers**: iOS Safari, Chrome Mobile

- **Accessibility**: WCAG 2.1 AA compliance

11. Launch Strategy

11.1 MVP Features (Phase 1)

- Core audit functionality for all 6 sections

- Basic PDF export capability

- User authentication and session management

- Mobile-responsive interface

11.2 Enhanced Features (Phase 2)

- Excel export functionality

- Advanced filtering and sorting

- Historical audit tracking

- API access for enterprise users

11.3 Future Enhancements (Phase 3)

- Automated scheduled audits

- White-label reporting options

- Team collaboration features

- Advanced competitor analysis

12. Success Criteria

12.1 Technical Metrics

- 99.9% uptime during business hours

- < 2 second average response time

- Zero critical security vulnerabilities

- 95%+ successful audit completion rate

12.2 Business Metrics

- 1000+ registered users within 6 months

- 70%+ user satisfaction score

- 50%+ monthly active user retention

- 500+ reports generated per month

13. Risk Assessment

13.1 Technical Risks

- **API Rate Limits**: Third-party service limitations

- **Mitigation**: Implement caching and multiple provider fallbacks

13.2 Business Risks

- **Competition**: Established players in website audit space

- **Mitigation**: Focus on unique value proposition and user experience

14. Conclusion

This PRD provides a comprehensive roadmap for developing a professional website audit tool. The modular architecture and clear requirements ensure the product can be built efficiently while maintaining high quality and user satisfaction standards. Regular review and updates of this document will be essential as the product evolves based on user feedback and market requirements.