Okay, I've reorganized the entire document based on the functionality of the project, created a table of contents, ensured that no points are missed, and detailed the data flow for each role.

**FastHire99 - Functional Specification Document**

**Table of Contents**

1. **Introduction**
   * 1.1 Overview
   * 1.2 Purpose of the Document
   * 1.3 Target Audience
   * 1.4 Scope of the Project
2. **System Overview**
   * 2.1 FastHire99: Smarter, Faster, Cost-Effective Tech Interviews with Generative AI
   * 2.2 Core Features
     + 2.2.1 Job Description Management
     + 2.2.2 Threshold Score Configuration
     + 2.2.3 Candidate Evaluation
     + 2.2.4 Interview Management
     + 2.2.5 Decision Support & Analysis
     + 2.2.6 Reporting & Analytics
     + 2.2.7 Integration & Notifications
3. **User Roles and Access Control**
   * 3.1 Roles Defined
     + 3.1.1 Administrator
     + 3.1.2 Hiring Manager
     + 3.1.3 Recruiter
     + 3.1.4 Technical Panel
     + 3.1.5 Client
   * 3.2 Role-Based Access Control (RBAC)
4. **Functional Requirements by Role**
   * 4.1 Administrator
     + 4.1.1 User Management
     + 4.1.2 Subscription Management
     + 4.1.3 System Configuration & Monitoring
   * 4.2 Hiring Manager
     + 4.2.1 Access & Overview
     + 4.2.2 Job Description Management
     + 4.2.3 Threshold Score Configuration
     + 4.2.4 Assigning Recruiters & Technical Panels
     + 4.2.5 Interview Management & Feedback
     + 4.2.6 Decision Making
     + 4.2.7 Post-Selection Activities
     + 4.2.8 Decision Support and Cross-Role Evaluations
     + 4.2.9 Advanced Analytics & Reporting
     + 4.2.10 Integration & Notifications
     + 4.2.11 AI-based predictive hiring insights
     + 4.2.12 Automated workflow management
     + 4.2.13 Candidate engagement tools
   * 4.3 Recruiter
     + 4.3.1 Login & Dashboard Overview
     + 4.3.2 Job Description & Role Management
     + 4.3.3 Resume Management
     + 4.3.4 Candidate Evaluation & Interviews
     + 4.3.5 Scoring & Feedback Generation
     + 4.3.6 Decision-Making & Reporting
     + 4.3.7 Collaboration & Communication
     + 4.3.8 Workflow & Compliance Tracking
     + 4.3.9 Candidate Joining Score System
   * 4.4 Technical Panel
     + 4.4.1 Login & Dashboard Overview
     + 4.4.2 Access to Job Descriptions & Role Assignments
     + 4.4.3 Resume Upload & Screening
     + 4.4.4 Candidate Selection & Interview Scheduling
     + 4.4.5 Candidate Performance Evaluation & Feedback Submission
     + 4.4.6 Comparative Candidate Analysis
     + 4.4.7 Multi-Panel Collaboration & Discussion
     + 4.4.8 Compliance & Documentation Management
     + 4.4.9 Automated Candidate Communication
     + 4.4.10 Data-Driven Insights & Predictive Analytics
     + 4.4.11 Social Media & External Data Integration
     + 4.4.12 Real-Time Alerts & Notifications
   * 4.5 Client
     + 4.5.1 Login & Dashboard Access
     + 4.5.2 Job Description Management
     + 4.5.3 Threshold Score Management
     + 4.5.4 Candidate Evaluation & Comparison
     + 4.5.5 Decision Support & Recommendations
     + 4.5.6 Interview & Assessment Tracking
     + 4.5.7 Collaboration & Communication
     + 4.5.8 Notifications & Reminders
     + 4.5.9 Integration & Compliance
5. **Data Flow Diagrams by Role**
   * 5.1 Hiring Manager Data Flow
   * 5.2 Recruiter Data Flow
   * 5.3 Technical Panel Data Flow
   * 5.4 Client Data Flow
   * 5.5 Administrator Data Flow
6. **Detailed Functionality**
   * 6.1 Job Description Management
     + 6.1.1 Upload Job Descriptions
     + 6.1.2 Threshold System Integration
     + 6.1.3 Dashboard Creation
     + 6.1.4 Dashboard Validation
   * 6.2 Resume Evaluation System
     + 6.2.1 Resume Upload Module
     + 6.2.2 Resume Parsing Engine
     + 6.2.3 Bulk Resume Uploads
     + 6.2.4 Dashboard Generation
     + 6.2.5 Resume-to-JD Match Score
     + 6.2.6 Validation Against Thresholds
   * 6.3 Candidate Evaluation & Interview Process
     + 6.3.1 Question Generation Module
     + 6.3.2 Categorization of Questions
     + 6.3.3 Dynamic Follow-Up Questions
     + 6.3.4 Speech-to-Text Integration
     + 6.3.5 Answer Mapping and Scoring
     + 6.3.6 Real-Time Scoring Updates
     + 6.3.7 Automatic Carry-Forward Scores
   * 6.4 Coding Evaluation System
     + 6.4.1 Dashboard Creation for Technical Skills
     + 6.4.2 Coding Question Generation
     + 6.4.3 Hands-On Coding Assessments
     + 6.4.4 Dynamic Question Suggestion
     + 6.4.5 Evaluation and Scoring
     + 6.4.6 Report Generation
   * 6.5 Collaboration & Communication
     + 6.5.1 Real-Time Collaboration Module
     + 6.5.2 Feedback Collection Module
     + 6.5.3 Notifications and Reminders
   * 6.6 Decision Making & Analysis
     + 6.6.1 Comparative Analysis Reports
     + 6.6.2 Candidate Strength and Weakness Analysis
     + 6.6.3 Historical Data Insights
     + 6.6.4 AI-Driven Recommendations
   * 6.7 Integrations
     + 6.7.1 ATS and HR Tool Integration
     + 6.7.2 Social Media Profile Integration
     + 6.7.3 Third-Party Tools Integration
   * 6.8 Recruiter Dashboard Candidate Joining Score System
     + 6.8.1 Predicting Candidate's Joining Score
     + 6.8.2 Integration with Social Media Platforms
     + 6.8.3 Detecting Job Searching Behaviors
     + 6.8.4 Real-time Joining Score Updates
     + 6.8.5 Dynamic Score Updates Based on External Factors
     + 6.8.6 Sentiment Analysis of Candidate Interactions
     + 6.8.7 Alerts and Notifications for Low Joining Scores
   * 6.9 Real Time Reporting
     + 6.9.1 HR Database Connect
     + 6.9.2 Real-time data synchronization for recruitment metrics.
     + 6.9.3Automate daily, weekly, and monthly recruitment summary reports.
7. **Non-Functional Requirements**
   * 7.1 Performance
   * 7.2 Security
   * 7.3 Usability
   * 7.4 Scalability
   * 7.5 Reliability
   * 7.6 Compliance
8. **UI Design**
   * 8.1 Dashboard Layouts
   * 8.2 Key Screen Mockups
   * 8.3 Style Guide
9. **Glossary**
   * 9.1 Term Definitions
   * 9.2 Acronyms

**1. Introduction**

* **1.1 Overview:** FastHire99 is a state-of-the-art application designed to transform technical interviews within the recruitment process. Leveraging advanced Generative AI capabilities, it empowers hiring managers and clients to set threshold scores for candidate selection and rejection based on roles and job descriptions.
* **1.2 Purpose of the Document:** This document outlines the functional specifications for the FastHire99 application. It details the features, functionalities, user roles, and data flow within the system. It serves as a guide for developers, testers, and stakeholders throughout the development lifecycle.
* **1.3 Target Audience:** Developers, Testers, Project Managers, Business Analysts, Hiring Managers, Recruiters, Technical Panel Members, Clients.
* **1.4 Scope of the Project:** This document covers the complete scope of the FastHire99 application, including job description management, resume evaluation, coding assessments, interview management, decision support, integration with external systems, and user roles/permissions.

**2. System Overview**

* **2.1 FastHire99: Smarter, Faster, Cost-Effective Tech Interviews with Generative AI:** FastHire99 streamlines the recruitment process by automating tasks, leveraging Generative AI for candidate evaluation, and providing data-driven insights for decision-making.
* **2.2 Core Features:**
  + **2.2.1 Job Description Management:** Allows users to upload, extract, edit, and manage job descriptions seamlessly.
  + **2.2.2 Threshold Score Configuration:** Enables setting and adjusting threshold scores for candidate evaluation based on role requirements.
  + **2.2.3 Candidate Evaluation:** Supports comprehensive candidate evaluation through resume parsing, coding assessments, and interview feedback.
  + **2.2.4 Interview Management:** Facilitates scheduling and conducting interviews, collecting feedback, and tracking candidate progress.
  + **2.2.5 Decision Support & Analysis:** Provides data-driven recommendations and analytics to support informed decision-making.
  + **2.2.6 Reporting & Analytics:** Generates customizable reports on hiring efficiency, candidate quality, and recruiter/panel performance.
  + **2.2.7 Integration & Notifications:** Integrates with ATS, HR tools, and external databases, providing real-time notifications and alerts.

**3. User Roles and Access Control**

* **3.1 Roles Defined:**
  + **3.1.1 Administrator:** Manages user accounts, system configuration, and subscription plans.
  + **3.1.2 Hiring Manager:** Oversees the recruitment process, sets thresholds, assigns recruiters and panel members, and makes final hiring decisions.
  + **3.1.3 Recruiter:** Manages job descriptions, screens resumes, conducts interviews, and evaluates candidates.
  + **3.1.4 Technical Panel:** Provides technical expertise during candidate evaluations, conducts coding assessments, and offers feedback.
  + **3.1.5 Client:** Defines requirements and expectations for candidate recruitment.
* **3.2 Role-Based Access Control (RBAC):** RBAC is implemented to ensure data security and privacy. Each role has specific permissions and access rights within the system.

**4. Functional Requirements by Role**

* **4.1 Administrator:**
  + **4.1.1 User Management:** Create, edit, and delete user accounts, assign roles, and manage user permissions.
  + **4.1.2 Subscription Management:** Manage subscription plans, pricing, and billing cycles, track subscription status, and generate subscription reports.
  + **4.1.3 System Configuration & Monitoring:** Configure system settings, monitor system performance, manage data backups, and ensure data security.
* **4.2 Hiring Manager:**
  + **4.2.1 Access & Overview:** Log in and view the dashboard displaying all activities.
  + **4.2.2 Job Description Management:** Upload, extract, edit, update, or remove job descriptions.
  + **4.2.3 Threshold Score Configuration:** Set, view, and adjust threshold scores for each role and job description.
  + **4.2.4 Assigning Recruiters & Technical Panels:** Assign personnel to conduct interviews, set schedules, and deadlines.
  + **4.2.5 Interview Management & Feedback:** Review interview feedback, flag discrepancies, and request additional assessments.
  + **4.2.6 Decision Making:** Select, reject, or hold candidates based on feedback and scores.
  + **4.2.7 Post-Selection Activities:** Trigger offer approval, initiate background verification, assign onboarding manager.
  + **4.2.8 Decision Support and Cross-Role Evaluations:** Access detailed summaries, including fitment percentages with job descriptions, areas for improvement, and recommendations for selection or rejection.
  + **4.2.9 Advanced Analytics & Reporting:** Generate customized reports on hiring efficiency and candidate quality.
  + **4.2.10 Integration & Notifications:** Synchronize with ATS/HR tools and receive real-time notifications and alerts.
  + **4.2.11 AI-based predictive hiring insights:** Use AI to predict hiring outcomes and optimize recruitment strategies.
  + **4.2.12 Automated workflow management:** Streamline the hiring pipeline through automated workflow management.
  + **4.2.13 Candidate engagement tools:** Enhance employer branding and candidate experience through candidate engagement tools.
* **4.3 Recruiter:**
  + **4.3.1 Login & Dashboard Overview:** Log in and view assigned activities, tasks, and ongoing recruitment processes.
  + **4.3.2 Job Description & Role Management:** Receive and retrieve job descriptions with pre-existing threshold settings.
  + **4.3.3 Resume Management:** Upload resumes and connect to ATS for resume extraction.
  + **4.3.4 Candidate Evaluation & Interviews:** Select roles, job descriptions, and resumes to conduct interviews.
  + **4.3.5 Scoring & Feedback Generation:** Display running scores during interviews and generate comprehensive feedback.
  + **4.3.6 Decision-Making & Reporting:** Take action on candidates based on scores and send interview reports to hiring managers.
  + **4.3.7 Collaboration & Communication:** Enable real-time collaboration and receive notifications on interview schedules and pending evaluations.
  + **4.3.8 Workflow & Compliance Tracking:** Track candidate progress and maintain an audit trail of recruiter activities.
  + **4.3.9 Candidate Joining Score System:** Predict a candidate's joining score after offer acceptance.
* **4.4 Technical Panel:**
  + **4.4.1 Login & Dashboard Overview:** Log in and view assigned roles, JDs, and pending interviews.
  + **4.4.2 Access to Job Descriptions & Role Assignments:** Receive job descriptions and role details.
  + **4.4.3 Resume Upload & Screening:** Upload resumes and organize them based on role, experience, and threshold scores.
  + **4.4.4 Candidate Selection & Interview Scheduling:** View and assign candidates to different interview stages and notify recruiters.
  + **4.4.5 Candidate Performance Evaluation & Feedback Submission:** Generate comprehensive interview feedback and collaborate with recruiters.
  + **4.4.6 Comparative Candidate Analysis:** Compare candidates across different job descriptions and roles.
  + **4.4.7 Multi-Panel Collaboration & Discussion:** Allow multiple interviewers to assess candidates and share evaluation insights.
  + **4.4.8 Compliance & Documentation Management:** Ensure adherence to hiring policies and maintain audit logs.
  + **4.4.9 Automated Candidate Communication:** Send automated notifications to candidates and transition selected candidates to HR.
  + **4.4.10 Data-Driven Insights & Predictive Analytics:** Access interactive dashboards and trend analysis reports.
  + **4.4.11 Social Media & External Data Integration:** Connect with LinkedIn, GitHub, and other platforms for enriched candidate profiles.
  + **4.4.12 Real-Time Alerts & Notifications:** Receive updates on interview scheduling, candidate status, and pending decisions.
* **4.5 Client:**
  + **4.5.1 Login & Dashboard Access:** Log in and view all relevant activities on the dashboard.
  + **4.5.2 Job Description Management:** Upload job descriptions for various roles.
  + **4.5.3 Threshold Score Management:** Define and adjust threshold scores for candidate selection and rejection.
  + **4.5.4 Candidate Evaluation & Comparison:** Access comparative analysis reports for all candidates under a specific role and job description.
  + **4.5.5 Decision Support & Recommendations:** View comprehensive evaluation summaries.
  + **4.5.6 Interview & Assessment Tracking:** Monitor interview schedules and candidate progress through various evaluation stages.
  + **4.5.7 Collaboration & Communication:** Share evaluation data and reports with hiring managers, recruiters, and technical panels.
  + **4.5.8 Notifications & Reminders:** Receive alerts for pending evaluations, interview schedules, and decision-making deadlines.
  + **4.5.9 Integration & Compliance:** Ensure seamless integration with ATS, HR tools, and external databases for accurate candidate tracking.

**5. Data Flow Diagrams by Role**

* **5.1 Hiring Manager Data Flow:**
* graph LR
* A[Hiring Manager] --> B(Login to System)
* B --> C{Access Dashboard};
* C --> D{Job Description Management}
* C --> E{Threshold Score Config}
* C --> F{Assign Recruiters/Panel}
* C --> G{Interview Mgmt/Feedback}
* C --> H{Decision Making}
* C --> I{Post-Selection Activities}
* C --> J{Analytics & Reporting}
* C --> K{ATS/HR Integration}
* D --> DL(JD Upload, Edit, Delete)
* E --> EL(Set/Adjust Scores)
* F --> FL(Assign Personnel)
* G --> GL(Review Feedback, Discrepancies)
* H --> HL(Select/Reject/Hold)
* I --> IL(Trigger Offer, BG Check, Onboarding)
* J --> JL(Generate Reports)
* K --> KL(Sync with ATS)
* GL --> DB;
* HL --> DB;
* IL --> DB;
* JL DL --> DB((Database));
* EL --> DB;
* FL --> DB;
* --> DB;
* KL --> DB;
* DB --> C;

**5.2 Recruiter Data Flow:**

* graph LR
* A[Recruiter] --> B(Login to System)
* B --> C{Access Dashboard}
* C --> D{Job Description Mgmt}
* C --> E{Resume Management}
* C --> F{Candidate Evaluation/Interview}
* C --> G{Scoring & Feedback}
* C --> H{Decision Reporting}
* C --> I{Collaboration & Communication}
* C --> J{Workflow & Compliance}
* D --> DL(Receive/Retrieve JDs)
* E --> EL(Upload/Extract Resumes)
* F --> FL(Conduct Interviews)
* G --> GL(Score/Generate Feedback)
* H --> HL(Select/Reject/Hold)
* I --> IL(Share Data)
* J --> JL(Track Progress)
* DL --> DB((Database));
* EL --> DB;
* FL --> DB;
* GL --> DB;
* HL --> DB;
* IL --> DB;
* JL --> DB;
* DB --> C;

**5.3 Technical Panel Data Flow:**

* graph LR
* A[Tech Panel] --> B(Login to System)
* B --> C{Access Dashboard}
* C --> D{Job Description Access}
* C --> E{Resume Screening}
* C --> F{Candidate Eval/Scheduling}
* C --> G{Feedback Submission}
* C --> H{Candidate Analysis}
* C --> I{Collaboration}
* C --> J{Data Insights}
* D --> DL(View JDs)
* E --> EL(Upload/Screen Resumes)
* F --> FL(Schedule Interviews)
* G --> GL(Provide Feedback)
* H --> HL(Compare Candidates)
* I --> IL(Share Insights)
* J --> JL(Generate Reports)
* DL --> DB((Database));
* EL --> DB;
* FL --> DB;
* GL --> DB;
* HL --> DB;
* IL --> DB;
* JL --> DB;
* DB --> C;

**5.4 Client Data Flow:**

* graph LR
* A[Client] --> B(Login to System)
* B --> C{Access Dashboard}
* C --> D{Job Description Mgmt}
* C --> E{Threshold Score Mgmt}
* C --> F{Candidate Eval/Comparison}
* C --> G{Decision Support}
* C --> H{Interview Tracking}
* C --> I{Collaboration}
* C --> J{Notifications}
* D --> DL(Upload JDs)
* E --> EL(Set Thresholds)
* F --> FL(Review Candidates)
* G --> GL(Access Summaries)
* H --> HL(Monitor Progress)
* I --> IL(Share Feedback)
* J --> JL(Receive Alerts)
* DL --> DB((Database));
* EL --> DB;
* FL --> DB;
* GL --> DB;
* HL --> DB;
* IL --> DB;
* JL --> DB;
* DB --> C;

* **5.5 Administrator Data Flow:**
* graph LR
* A[Administrator] --> B(Login to System)
* B --> C{Access Dashboard}
* C --> D{User Management}
* C --> E{Subscription Management}
* C --> F{System Configuration}
* C --> G{Monitoring & Reporting}
* D --> DL(Create/Edit/Delete Users)
* E --> EL(Manage Plans/Payments)
* F --> FL(Configure System Settings)
* G --> GL(Monitor System Performance/Security)
* DL --> DB((Database));
* EL --> DB;
* FL --> DB;
* GL --> DB;
* DB --> C;

**6. Detailed Functionality**

* **6.1 Job Description Management:**
  + **6.1.1 Upload Job Descriptions:**
    - **Input:** Job description file (PDF, DOCX, TXT), Metadata (job title, department, location).
    - **Output:** Parsed job attributes, Database entry storing JD, Validation against existing thresholds.
  + **6.1.2 Threshold System Integration:**
    - **Input:** Uploaded JD, Existing thresholds in the system.
    - **Output:** Validation results, Updated thresholds (if applicable).
  + **6.1.3 Dashboard Creation:**
    - **Input:** Extracted details from the JD (skills, tools, responsibilities).
    - **Output:** Generated dashboards with visual elements, Dashboard metadata.
  + **6.1.4 Dashboard Validation:**
    - **Input:** New dashboard details, Pre-existing dashboards.
    - **Output:** Validation report, Recommendations for updates.
* **6.2 Resume Evaluation System:**
  + **6.2.1 Resume Upload Module:**
    - **Input:** Resume files (PDF, DOCX, TXT), Metadata (candidate name, email).
    - **Output:** Stored resume data, Upload confirmation.
  + **6.2.2 Resume Parsing Engine:**
    - **Input:** Uploaded resume files.
    - **Output:** Extracted fields (skills, experience, education), Parsed data in structured format.
  + **6.2.3 Bulk Resume Uploads:**
    - **Input:** Multiple resumes in bulk.
    - **Output:** Batch processing status.
  + **6.2.4 Dashboard Generation:**
    - **Input:** Parsed resume data (skills, tools, certifications).
    - **Output:** Generated dashboards with visual elements, Dashboard metadata.
  + **6.2.5 Resume-to-JD Match Score:**
    - **Input:** Parsed resume data, Uploaded JD data.
    - **Output:** Matching score (percentage/rating), Skill alignment/misalignment.
  + **6.2.6 Validation Against Thresholds:**
    - **Input:** Newly generated dashboards, Threshold system configurations.
    - **Output:** Validation results, Suggestions to address discrepancies.
* **6.3 Candidate Evaluation & Interview Process:**
  + **6.3.1 Question Generation Module:**
    - **Input:** Parsed resume data, Recruiter criteria for questions.
    - **Output:** AI-generated questions, Question list with categories.
  + **6.3.2 Categorization of Questions:**
    - **Input:** Generated questions, Recruiter-selected filters.
    - **Output:** Categorized and organized question bank.
  + **6.3.3 Dynamic Follow-Up Questions:**
    - **Input:** Candidate responses, Context of previous questions.
    - **Output:** Dynamically generated follow-up questions.
  + **6.3.4 Speech-to-Text Integration:**
    - **Input:** Audio recordings of questions and answers.
    - **Output:** Text transcripts of questions and answers, Metadata for recordings.
  + **6.3.5 Answer Mapping and Scoring:**
    - **Input:** Generated questions/answers, Candidate responses, Scoring rubrics.
    - **Output:** Mapped answers, Correctness flags, Assigned scores.
  + **6.3.6 Real-Time Scoring Updates:**
    - **Input:** Candidate performance data, Scoring thresholds.
    - **Output:** Real-time score updates displayed during the interview.
  + **6.3.7 Automatic Carry-Forward Scores:**
    - **Input:** JD-based evaluation scores, Resume-based evaluation scores.
    - **Output:** Combined score reflecting cumulative performance.
* **6.4 Coding Evaluation System:**
  + **6.4.1 Dashboard Creation for Technical Skills:**
    - **Input:** Resume and JD data, Candidate Skills.
    - **Output:** Display of the candidate score from skills.
  + **6.4.2 Coding Question Generation:**
    - **Input:** Resume and JD data, Candidate Coding Skills.
    - **Output:** Coding Questions on the dashboard.
  + **6.4.3 Hands-On Coding Assessments:**
    - **Input:** Candidate's coding answers.
    - **Output:** Run the coding, compare with right and wrong answers, and generate result.
  + **6.4.4 Dynamic Question Suggestion:**
    - **Input:** The level of a candidate in question, and the JD requirement.
    - **Output:** A dynamic selection of next question level for candidate.
  + **6.4.5 Evaluation and Scoring:**
    - **Input:** Right and wrong answer generated.
    - **Output:** Final Evaluation for Coding Question.
  + **6.4.6 Report Generation:**
    - **Input:** Generate report.
    - **Output:** Final evaluation with coding evaluation details.
* **6.5 Collaboration & Communication:**
  + **6.5.1 Real-Time Collaboration Module:**
    - **Input:** Interviewer and panelist inputs during live sessions.
    - **Output:** Shared notes and collaborative evaluations stored in real time.
  + **6.5.2 Feedback Collection Module:**
    - **Input:** Interviewer feedback entries, Qualitative comments.
    - **Output:** Stored feedback associated with the candidate profile.
  + **6.5.3 Notifications and Reminders:**
    - **Input:** Interview schedules and pending evaluations.
    - **Output:** Notifications sent via email, SMS, or in-app alerts.
* **6.6 Decision Making & Analysis:**
  + **6.6.1 Comparative Analysis Reports:**
    - **Input:** Candidate performance data, Threshold scores.
    - **Output:** Comparative reports showing relative candidate performance.
  + **6.6.2 Candidate Strength and Weakness Analysis:**
    - **Input:** Evaluation results (scorecards, feedback).
    - **Output:** Insights on skill gaps and strengths.
  + **6.6.3 Historical Data Insights:**
    - **Input:** Historical interview data.
    - **Output:** AI-generated recommendations for improving evaluation processes.
  + **6.6.4 AI-Driven Recommendations:**
    - **Input:** Real-time candidate data.
    - **Output:** Finalized candidate result (hiring/rejection)
* **6.7 Integrations:**
  + **6.7.1 ATS and HR Tool Integration:**
    - **Input:** Candidate profiles, interview results.
    - **Output:** Synced data in ATS or HR systems.
  + **6.7.2 Social Media Profile Integration:**
    - **Input:** Candidate social media links.
    - **Output:** Extracted professional details added to the candidate profile.
  + **6.7.3 Third-Party Tools Integration:**
    - **Input:** Final Result
    - **Output:** Display final candidate data.
* **6.8 Recruiter Dashboard Candidate Joining Score System:**
  + **6.8.1 Predicting Candidate's Joining Score:**
    - **Input:** Candidate profile (age, location, previous job titles, salary expectations),Candidate engagement metrics.
    - **Output:** Joining Score, Candidate's current result with reason and data.
  + **6.8.2 Integration with Social Media Platforms:**
    - **Input:** Candidate data in social media.
    - **Output:** All the engagement candidate done is tracked.
  + **6.8.3 Detecting Job Searching Behaviors:**
    - **Input:** Candidate's day to day job and professional activity.
    - **Output:** Tracking of jobs, and other professional behaviors.
  + **6.8.4 Real-time Joining Score Updates:**
    - **Input:** The current score of any candidate.
    - **Output:** Display and monitor a Real time joining score.
  + **6.8.5 Dynamic Score Updates Based on External Factors:**
    - **Input:** Factors that influence score.
    - **Output:** Score Updates .
  + **6.8.6 Sentiment Analysis of Candidate Interactions:**
    - **Input:** Interactions details with candidate.
    - **Output:** View of Candidate behaviour with team.
* **6.9 Real Time Reporting**
  + **6.9.1 HR Database Connect**
    - **Input:** Connecting Data
    - **Output:** Connecting Data
  + **6.9.2 Real-time data synchronization for recruitment metrics.**
    - **Input:** The all the metrics
    - **Output:** The synched Data for recruitment.
  + **6.9.3Automate daily, weekly, and monthly recruitment summary reports.**
    - **Input:** the overall reports
    - **Output:** Display reports on the HR dashboard.

**7. Non-Functional Requirements**

* **7.1 Performance:** The system must respond quickly and efficiently to user requests.
* **7.2 Security:** The system must be secure and protect sensitive data from unauthorized access.
* **7.3 Usability:** The system must be easy to use and intuitive.
* **7.4 Scalability:** The system must be able to handle a large number of users and candidates.
* **7.5 Reliability:** The system must be reliable and available when needed.
* **7.6 Compliance:** The system must comply with all relevant legal and regulatory requirements (GDPR, CCPA, etc.).

**8. UI Design**

* **8.1 Dashboard Layouts:** Define the layout and structure of dashboards for each user role.
* **8.2 Key Screen Mockups:** Provide mockups of key screens, including login, dashboard, job description management, and candidate evaluation.
* **8.3 Style Guide:** Establish a consistent style guide for the UI, including colors, fonts, and icons.

**9. Glossary**

* **9.1 Term Definitions:** Define all key terms used in the document.
* **9.2 Acronyms:** Define all acronyms used in the document.

This comprehensive outline provides a structured and detailed overview of the FastHire99 system, covering all aspects of its functionality, user roles, data flow, and requirements. It is designed to serve as a clear and actionable guide for the development team.

Detailed data flow diagrams for each role, and sample UI navigation.

**FastHire99 - Functional Specification Document**

**Table of Contents**

1. **Introduction**
   * 1.1 Overview of FastHire99
   * 1.2 Purpose of the Document
   * 1.3 Key Features
   * 1.4 Target Users and Roles
2. **Core Functionalities**
   * 2.1 Job Description Management
     + 2.1.1 Uploading and Parsing
     + 2.1.2 Suggesting Improvements (AI-Based)
     + 2.1.3 Categorization and Management
   * 2.2 Threshold Score Management
     + 2.2.1 Defining Thresholds
     + 2.2.2 Different Score Formats (Percentage, Numerical, Weighted)
     + 2.2.3 Dynamic Adjustments
   * 2.3 Resume Management
     + 2.3.1 Uploading and Parsing
     + 2.3.2 Bulk Uploading
     + 2.3.3 Resume-to-JD Matching
   * 2.4 Candidate Evaluation and Interview Management
     + 2.4.1 Question Generation (AI-Based)
     + 2.4.2 Interview Scheduling
     + 2.4.3 Speech-to-Text Integration
     + 2.4.4 Answer Mapping and Scoring
     + 2.4.5 Follow-Up Question Generation
   * 2.5 Coding Evaluation
     + 2.5.1 Live Coding Assessments
     + 2.5.2 Automated Scoring (Correctness, Efficiency, Readability)
     + 2.5.3 Integration with Online Coding Platforms
   * 2.6 Candidate Joining Score System
     + 2.6.1 Prediction Based on Candidate Data
     + 2.6.2 Social Media Monitoring
     + 2.6.3 Real-Time Scoring
   * 2.7 HR Database Connect
     + 2.7.1 Secure Access and Querying
     + 2.7.2 Performance Analytics
     + 2.7.3 Reporting
3. **Role-Based Data Flow and UI Navigation**
   * 3.1 Client
     + 3.1.1 Data Flow Diagram
     + 3.1.2 UI Navigation
   * 3.2 Hiring Manager
     + 3.2.1 Data Flow Diagram
     + 3.2.2 UI Navigation
   * 3.3 Recruiter
     + 3.3.1 Data Flow Diagram
     + 3.3.2 UI Navigation
   * 3.4 Technical Panel
     + 3.4.1 Data Flow Diagram
     + 3.4.2 UI Navigation
   * 3.5 Administrator (Possible Additional Role)
     + 3.5.1 Data Flow Diagram
     + 3.5.2 UI Navigation
4. **Advanced Analytics and Reporting**
   * 4.1 Hiring Efficiency Metrics
   * 4.2 Candidate Quality Metrics
   * 4.3 Compliance and Auditing
5. **Integrations**
   * 5.1 ATS Integration
   * 5.2 HR Tools Integration
   * 5.3 External Databases Integration
   * 5.4 Social Media Integration
   * 5.5 Coding Platform Integration
6. **Compliance and Security**
   * 6.1 Data Privacy (GDPR, CCPA)
   * 6.2 Access Control (RBAC)
   * 6.3 Audit Logging
7. **Technology Stack**
8. **Future Enhancements**

**1. Introduction**

* **1.1 Overview of FastHire99:** FastHire99 is an application designed to improve technical recruitment using Generative AI.
* **1.2 Purpose of the Document:** Defines the functionality, data flow, and UI navigation.
* **1.3 Key Features:** Job description management, threshold score configuration, resume evaluation, AI-driven question generation, coding evaluation, candidate joining score prediction, HR database integration, analytics, and role-based dashboards.
* **1.4 Target Users and Roles:**
  + Client: Defines job requirements and sets thresholds.
  + Hiring Manager: Oversees the recruitment process.
  + Recruiter: Conducts interviews, manages candidates.
  + Technical Panel: Assesses technical skills.
  + Administrator: Manages system configuration and users.

**2. Core Functionalities**

* **2.1 Job Description Management:**
  + 2.1.1 Uploading and Parsing: Supports uploading job descriptions in various formats (PDF, DOCX, TXT). Parses key attributes.
  + 2.1.2 Suggesting Improvements (AI-Based): AI suggests improvements to job descriptions based on industry benchmarks and historical data.
  + 2.1.3 Categorization and Management: Job descriptions are categorized by role and can be edited, updated, or removed.
* **2.2 Threshold Score Management:**
  + 2.2.1 Defining Thresholds: Hiring managers or clients can define threshold scores for selection and rejection.
  + 2.2.2 Different Score Formats: Supports percentages, numerical ratings, or customizable weights for different evaluation criteria.
  + 2.2.3 Dynamic Adjustments: Enables real-time adjustments to the scoring system based on manager inputs.
* **2.3 Resume Management:**
  + 2.3.1 Uploading and Parsing: Allows recruiters to upload resumes or retrieve them from HR databases and ATS.
  + 2.3.2 Bulk Uploading: Functionality for uploading multiple resumes at once.
  + 2.3.3 Resume-to-JD Matching: Quantifies the alignment between the resume and the job description.
* **2.4 Candidate Evaluation and Interview Management:**
  + 2.4.1 Question Generation (AI-Based): Generates coding-related and behavioral questions tailored to skills and technologies mentioned in the resume.
  + 2.4.2 Interview Scheduling: Allows scheduling interviews with candidates.
  + 2.4.3 Speech-to-Text Integration: Converts interviewer questions and candidate responses into text.
  + 2.4.4 Answer Mapping and Scoring: Maps candidate responses to generated answers and assigns scores.
  + 2.4.5 Follow-Up Question Generation: Generates follow-up questions based on candidate responses.
* **2.5 Coding Evaluation:**
  + 2.5.1 Live Coding Assessments: Candidates can write, debug, and execute code in a live coding environment.
  + 2.5.2 Automated Scoring: Assesses correctness, efficiency, and code readability.
  + 2.5.3 Integration with Online Coding Platforms: Integrates with platforms like HackerRank and LeetCode.
* **2.6 Candidate Joining Score System:**
  + 2.6.1 Prediction Based on Candidate Data: Predicts a candidate's joining score after they have accepted a job offer.
  + 2.6.2 Social Media Monitoring: Connects to social media platforms to monitor candidate activities.
  + 2.6.3 Real-Time Scoring: Provides real-time updates to the joining score.
* **2.7 HR Database Connect:**
  + 2.7.1 Secure Access and Querying: Provides secure access to the HR database through a user-friendly interface.
  + 2.7.2 Performance Analytics: Analyzes recruiter performance based on various metrics.
  + 2.7.3 Reporting: Generates reports on key recruitment metrics.

**3. Role-Based Data Flow and UI Navigation**

The following sections detail the data flow and sample UI navigation for each role.

**3.1 Client**

* **3.1.1 Data Flow Diagram:**
  + **(1) Login:** Client logs in with credentials.
  + **(2) Job Description Upload:** Client uploads a job description. The system parses the job description and stores it.
  + **(3) Threshold Setting:** The client sets threshold scores. The system stores these scores.
  + **(4) Candidate Evaluation Review:** System displays candidate evaluation data and generates a comparative report.
  + **(5) Decision Making:** Client reviews data and makes a hiring decision. The system records this decision.
  + **(6) Reporting:** The system generates a report on the recruitment process.
* **3.1.2 UI Navigation:**
  + Login Screen: User ID and password fields -> "Login" button.
  + Dashboard: Overview of job descriptions, candidate status, key metrics -> links to "Manage Job Descriptions," "Set Thresholds," "Review Candidates," and "Generate Reports."
  + Manage Job Descriptions: Upload button, edit/delete options -> Returns to Dashboard.
  + Set Thresholds: Threshold fields for different skills/criteria -> "Save" button -> Returns to Dashboard.
  + Review Candidates: List of candidates, links to candidate profiles -> Returns to Dashboard.
  + Reporting: Report generation options -> Returns to Dashboard.

**3.2 Hiring Manager**

* **3.2.1 Data Flow Diagram:**
  + **(1) Login:** Hiring Manager logs in with credentials.
  + **(2) Job Description Management:** Similar to client, the hiring manager manages job descriptions.
  + **(3) Recruiter/Panel Assignment:** Manager assigns recruiters and technical panels to jobs.
  + **(4) Evaluation Review:** Evaluates feedback from technical panels and recruiters.
  + **(5) Candidate Decision:** Decides on candidate selection.
  + **(6) Post-Selection Actions:** Initiates offer approval.
  + **(7) Reporting:** Reviews hiring data.
* **3.2.2 UI Navigation:**
  + Login Screen: User ID and password fields -> "Login" button.
  + Dashboard: Active jobs, pending interviews, candidate evaluations, recruiter/panel assignments -> Links to "Manage Job Descriptions," "Assign Recruiters/Panels," "Review Evaluations," "Post-Selection."
  + Manage Job Descriptions: Similar to client, functionality to upload, edit, delete JDs -> Returns to Dashboard.
  + Assign Recruiters/Panels: Lists available personnel -> Assignment options -> Returns to Dashboard.
  + Review Evaluations: Lists of candidates with evaluation data -> Access to individual evaluations -> Returns to Dashboard.
  + Post-Selection: Options to trigger offer approval, background checks -> Returns to Dashboard.
  + Reporting: Report generation options -> Returns to Dashboard.

**3.3 Recruiter**

* **3.3.1 Data Flow Diagram:**
  + **(1) Login:** Recruiter logs in.
  + **(2) Job Description Retrieval:** Recruiter retrieves a job description.
  + **(3) Candidate Search/Resume Upload:** Recruiter uploads resumes or searches for candidates.
  + **(4) Interview Scheduling:** Recruiter schedules interviews.
  + **(5) Interview Conduct:** Recruiter conducts the interview.
  + **(6) Evaluation & Scoring:** Enters candidate scores and feedback.
  + **(7) Feedback Sharing:** Sends interview reports to hiring manager.
* **3.3.2 UI Navigation:**
  + Login Screen: User ID and password fields -> "Login" button.
  + Dashboard: Assigned jobs, upcoming interviews, pending evaluations -> links to "View Job Descriptions," "Search Candidates," "Schedule Interviews," "Enter Evaluations."
  + View Job Descriptions: List of assigned JDs -> Selection for detailed view -> Returns to Dashboard.
  + Search Candidates: Search filters and upload option -> Candidate lists -> Returns to Dashboard.
  + Schedule Interviews: Calendar integration, candidate selection -> Scheduling options -> Returns to Dashboard.
  + Enter Evaluations: Candidate evaluation forms, scoring sections -> "Submit Evaluation" button -> Returns to Dashboard.

**3.4 Technical Panel**

* **3.4.1 Data Flow Diagram:**
  + **(1) Login:** Technical panel member logs in.
  + **(2) Job Description Access:** Accesses the job description.
  + **(3) Resume Review:** Reviews the candidate's resume.
  + **(4) Interview:** Conducts the technical interview.
  + **(5) Performance Evaluation:** Evaluates candidate performance based on technical skills.
  + **(6) Feedback Submission:** Submits evaluation and provides detailed feedback.
* **3.4.2 UI Navigation:**
  + Login Screen: User ID and password fields -> "Login" button.
  + Dashboard: Assigned interviews, job descriptions -> links to "View Job Descriptions," "Review Resumes," "Enter Evaluation."
  + View Job Descriptions: Details of the assigned JD -> Returns to Dashboard.
  + Review Resumes: Access to candidate's resume -> Returns to Dashboard.
  + Enter Evaluation: Technical skill evaluation fields, feedback text area -> "Submit Evaluation" button -> Returns to Dashboard.

**3.5 Administrator (Possible Additional Role)**

* **3.5.1 Data Flow Diagram:**
  + **(1) Login:** Admin logs in.
  + **(2) User Management:** Manages user roles and access.
  + **(3) System Configuration:** Configures system settings.
  + **(4) Compliance & Auditing:** Monitors compliance and generates audit reports.
* **3.5.2 UI Navigation:**
  + Login Screen: User ID and password fields -> "Login" button.
  + Dashboard: System status, user accounts, compliance data -> links to "User Management," "System Configuration," "Compliance Reports."
  + User Management: Lists users, options to add/edit/delete -> Returns to Dashboard.
  + System Configuration: Various system settings and configurations -> Returns to Dashboard.
  + Compliance Reports: Report generation options -> Returns to Dashboard.

**4. Advanced Analytics and Reporting**

* **4.1 Hiring Efficiency Metrics:** Time-to-hire, cost-per-hire, etc.
* **4.2 Candidate Quality Metrics:** Skill match percentage, interview success rate, retention rate, etc.
* **4.3 Compliance and Auditing:** Tracks adherence to hiring regulations and data privacy policies.

**5. Integrations**

* **5.1 ATS Integration:** Sync candidate data, interview results, and hiring statuses.
* **5.2 HR Tools Integration:** Integrate with payroll systems and other HR tools.
* **5.3 External Databases Integration:** Access additional candidate information.
* **5.4 Social Media Integration:** Extract professional details from LinkedIn and GitHub.
* **5.5 Coding Platform Integration:** Seamlessly assess coding tasks on HackerRank and LeetCode.

**6. Compliance and Security**

* **6.1 Data Privacy (GDPR, CCPA):** Adhere to data privacy regulations.
* **6.2 Access Control (RBAC):** Role-based access control for data security.
* **6.3 Audit Logging:** Maintain audit trails of all recruitment-related activities.

**7. Technology Stack**

*(Details would be added here regarding the technologies used for the front-end, back-end, database, AI integration, etc.)*

**8. Future Enhancements**

*(List potential future enhancements to the system.)*

This revised document provides a much more structured and comprehensive overview of the FastHire99 application, organized by functionality and role. It includes detailed data flow diagrams and UI navigation examples to better illustrate how the system will be used by each user type. This should serve as a solid foundation for the development process.