

SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

HR REFERENCE CHECKER SYSTEM

Project Title	HR REFERENCE CHECKER SYSTEM
Version	1.0
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Chapter 1

INTRODUCTION

1.1 Purpose

This document is to outline the requirements and steps of developing the **HR Reference Checker System**, a web-application based system, in order to ease the process of staff in the Human Resource (HR) Department to construct a thorough background check of job applicants via their referees through a digitised method of questioning and evaluating the individuals who seek opportunities of being employed to their workplace of interest.

The traditional way of having to manually do a phone call ought to be significantly time consuming which tones down the efficiency of working, which leads to lesser productivity. Moreover, with the possibilities of contacted referees not picking up their devices for a call, will just be a major time waste for respective staff and may leave a bad reputation towards them. Thus lowering the odds of their applicant's employment. Hence, this system was brought up to be developed.

1.2 Scope

This system will allow users to browse applicants' records, view associated referees and manage their contact information, primarily their email address. Users may create a template of questions which consists of answering formats such as typing their responses, rating capabilities through a numeric measuring scale, and choosing one or more options in a multiple-choice question. These templates can be shared to referees via a uniquely generated link and is forwarded through their email address. All collected responses can be exported into a Portable Document Format (PDF) file, ready to be evaluated by staff.

However, the system will not be able to conduct resume parsing, followed by applicant tracking functions beyond referee feedback.

1.3 Definitions, Acronyms, and Abbreviations

Term / Acronym	Definition
HR	Human Resources; the department responsible for recruitment, employee relations, and organizational development.
Referee	A person who provides feedback or a reference about an applicant's qualifications and character.
Applicant	A candidate who has applied for a job and whose referees are being contacted.
Template	A predefined set of questions created by HR staff to be sent to referees for feedback.
Form Link	A unique URL generated for each referee, linking to their assigned question form.
PDF	Portable Document Format; a file format used for exporting and viewing referee responses.
UI	User Interface — the visual part of the system that users interact with.
SRS	Software Requirements Specification — this document, which outlines all requirements of the system.
Response Format	The type of input expected for a question (e.g., short text, scale, multiple choice).
Rating Scale	A numeric or descriptive scale used by referees to evaluate an applicant (e.g., 1–5 or Poor to Excellent).
Multiple Choice	A question format that allows referees to select one or more predefined options.
System	Refers to the HR Reference Checker System being developed.

1.4 References

- IEEE. (2018). ISO/IEC/IEEE 29148:2018 Systems and software engineering—Life cycle processes— Requirements engineering. <https://www.iso.org/standard/72089.html>

1.5 Overview of Document

This document provides a structured outline of the requirements for the development of the HR Reference Checker System. It is organized into the following main sections:

Section	Description
Section 1: Introduction	Describes the purpose, scope, definitions, references, and this document overview.
Section 2: Overall Description	Gives a high-level view of the system, including its context, users, operating environment, constraints, and key diagrams such as use case, UML, data flow, and entity relationships.
Section 3: Specific Requirements	Details the system's functional and non-functional requirements, user interface expectations, data requirements, and supporting diagrams.
Section 4: Appendices	Contains supporting materials such as sample forms, question templates, exported PDFs, and compliance references.

Table 1.2: Document Structure Overview

Chapter 2

OVERALL DESCRIPTION

2.1 Product Perspective

The HR Reference Checker System is a standalone web-based application designed to streamline the referee-checking process in the hiring workflow. It replaces traditional, manual reference checks (e.g., phone calls) with a digital solution that collects structured feedback from referees via email links and online forms. The system will interact with users (HR staff) through a web interface and utilize a database to store questions, templates, and responses.

2.2 Product Functions

Key features of the system include:

Function	Description
Applicant & Referee Management	Managing applicant and referee records with contact information
Template Creation	Creating question templates with flexible answer formats (text, scale, multiple choice)
Email Automation	Sending automated emails with unique response links to referees
Response Management	Viewing and exporting referee responses as PDF reports
Status Tracking	Filtering completed vs. pending responses

Table 2.1: System Product Functions

2.3 User Classes and Characteristics

User Class	Description	Characteristics
HR Staff	Main users of the system. Responsible for creating templates, sending links, and reviewing responses.	Should be familiar with basic web apps.
Referees	External users who only access the questionnaire link. No login required.	Must be able to understand and respond accurately.

Table 2.2: User Classes and Characteristics

2.4 Operating Environment

Component	Technology
Platform	Web-based application
Frontend	HTML, CSS, JavaScript
Backend	Django
Database	SQL
Client devices	Desktop browsers (Chrome, Firefox, Edge)
Email service	SMTP or external email API for sending links

Table 2.3: Operating Environment Specifications

2.5 Design and Implementation Constraints

Constraint	Description
Communication Method	The system will use only email (not SMS or phone) for referee contact
Responsive Design	The frontend must be responsive for desktop, but not optimized for mobile
Export Format	Only PDF format is supported for exporting responses
Authentication	No authentication or resume parsing modules will be implemented

Table 2.4: Design and Implementation Constraints

2.6 User Documentation

Documentation Type	Description
User Guide	A brief internal user guide will be provided for HR staff (via PDF)
On-screen Help	On-screen tooltips and labels will assist users in navigating the system

Table 2.5: User Documentation Requirements

2.7 Assumptions and Dependencies

Item	Description
Internet Access	Referees have internet access and are able to open email links
Email Infrastructure	The organization has a working SMTP email server or equivalent API setup
Deployment	The system will be deployed on an internal server or secure hosting platform
Data Entry	HR staff will manually input applicant and referee details into the system

Table 2.6: Assumptions and Dependencies

2.8 Use Case Diagram

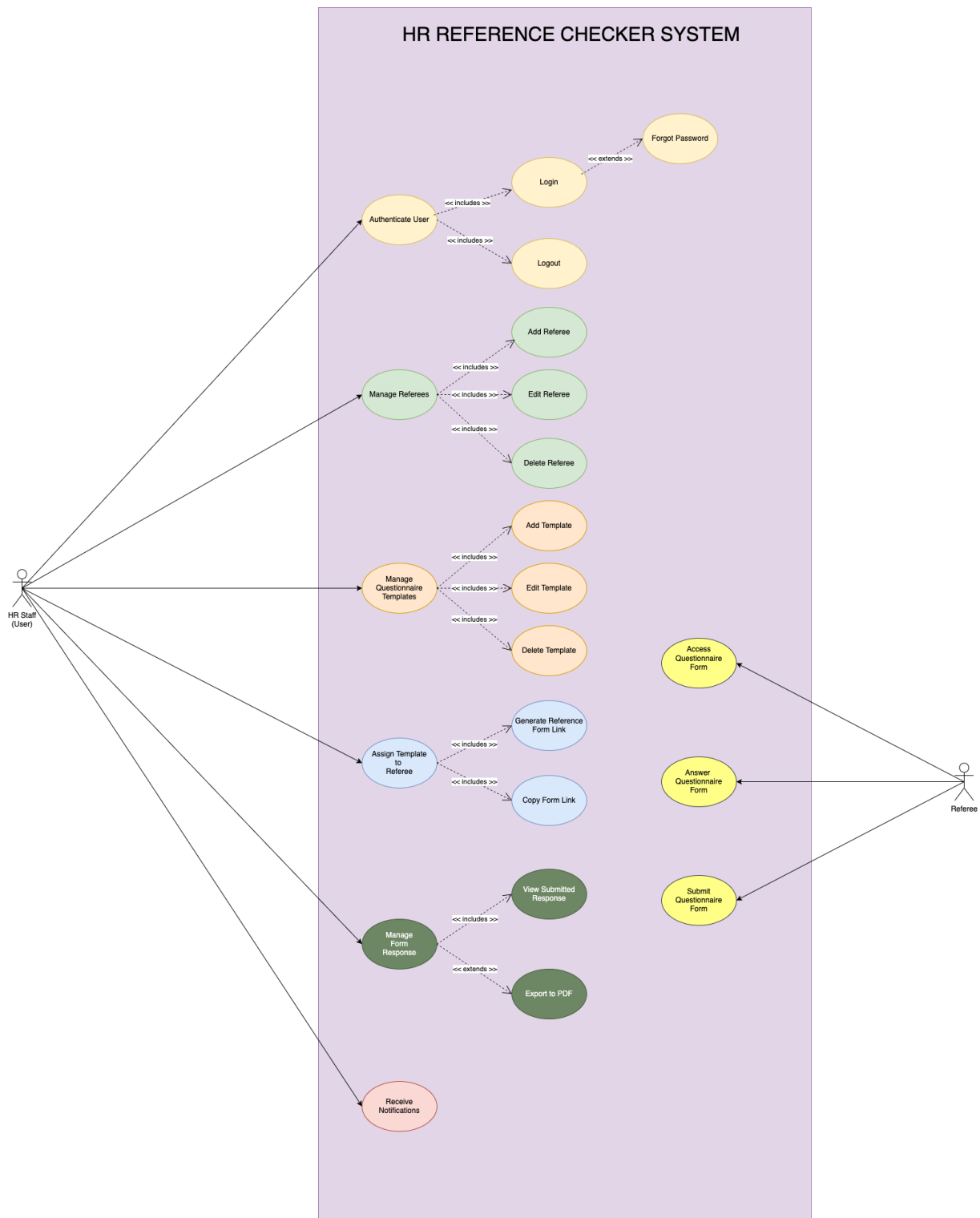


Figure 2.1: HR Reference Checker System Use Case Diagram

The use case diagram shows the main actors (User/HR Staff and Referee) and their interactions with the system. The diagram illustrates the following key use cases:

- **Authentication:** Login, Logout, Forgot Password
- **Referee Management:** Add, Edit, Delete Referee
- **Template Management:** Add, Edit, Delete Template
- **Form Management:** Generate Reference Form Link, Copy Form Link, Assign Template to Referee
- **Response Management:** View Submitted Responses, Export to PDF, Submit Questionnaire Form
- **Notifications:** Receive Notifications

2.9 UML Diagrams

2.9.1 Class Diagram

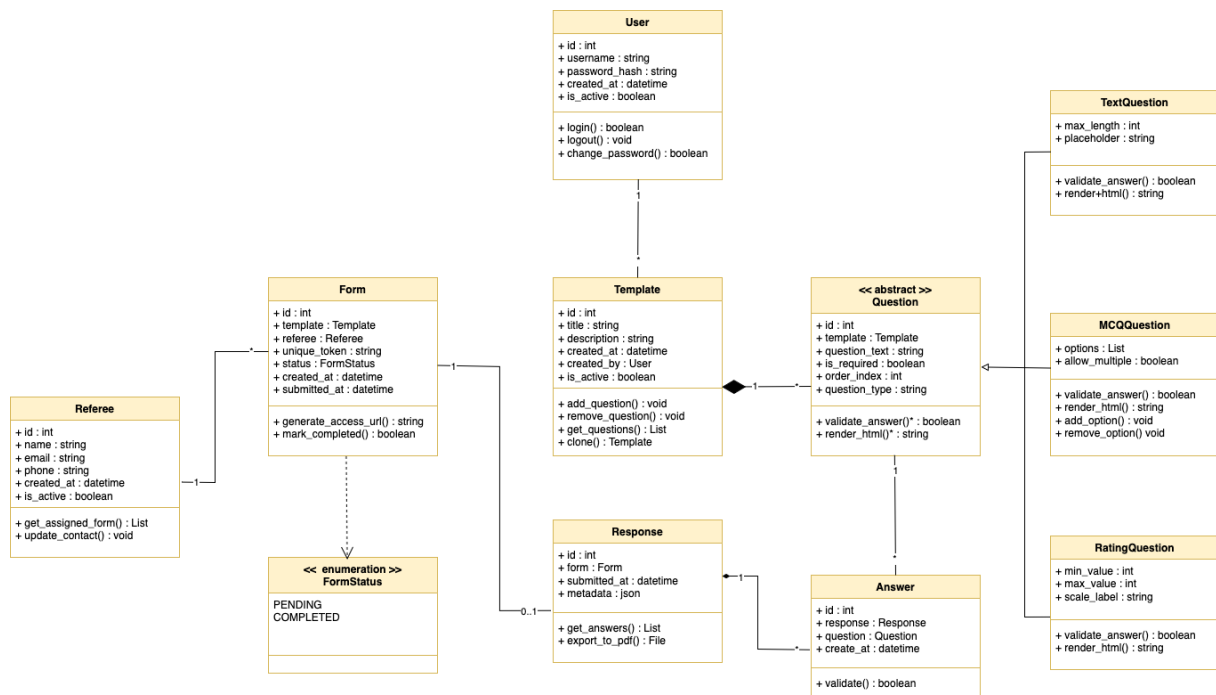


Figure 2.2: UML Class Diagram of HR Reference Checker System

The class diagram models the core structure of the HR Reference Checker System. It defines key entities and their relationships as follows:

- **User:** Represents the HR staff or admin. They can log in, log out, and manage their passwords.
- **Referee:** A person providing a reference. They are assigned a form to fill in and can update their contact details.

- **Template:** A reusable blueprint containing a set of questions. Users can add or remove questions and reuse templates by cloning them.
- **Form:** A reference form created based on a template and assigned to a specific referee. Each form has a unique token for access and can be marked as completed upon submission.
- **Question (Abstract):** A base class representing any type of question (text, multiple choice, rating). It defines common behavior like validation and rendering.
- **TextQuestion:** A subclass of Question for open-ended text input with a character limit and optional placeholder text.
- **MCQQuestion:** A subclass for multiple-choice questions. It allows single or multiple selections and lets users manage the list of options.
- **RatingQuestion:** A subclass for numeric rating inputs (e.g., 1–5), including optional scale labels (like “Poor” to “Excellent”).
- **Response:** Stores a completed form response, including submission metadata. It can retrieve related answers and export the whole response as a PDF.
- **Answer:** Represents an individual answer to a question within a response. Includes logic to validate the data.

2.9.2 System Architecture Diagram

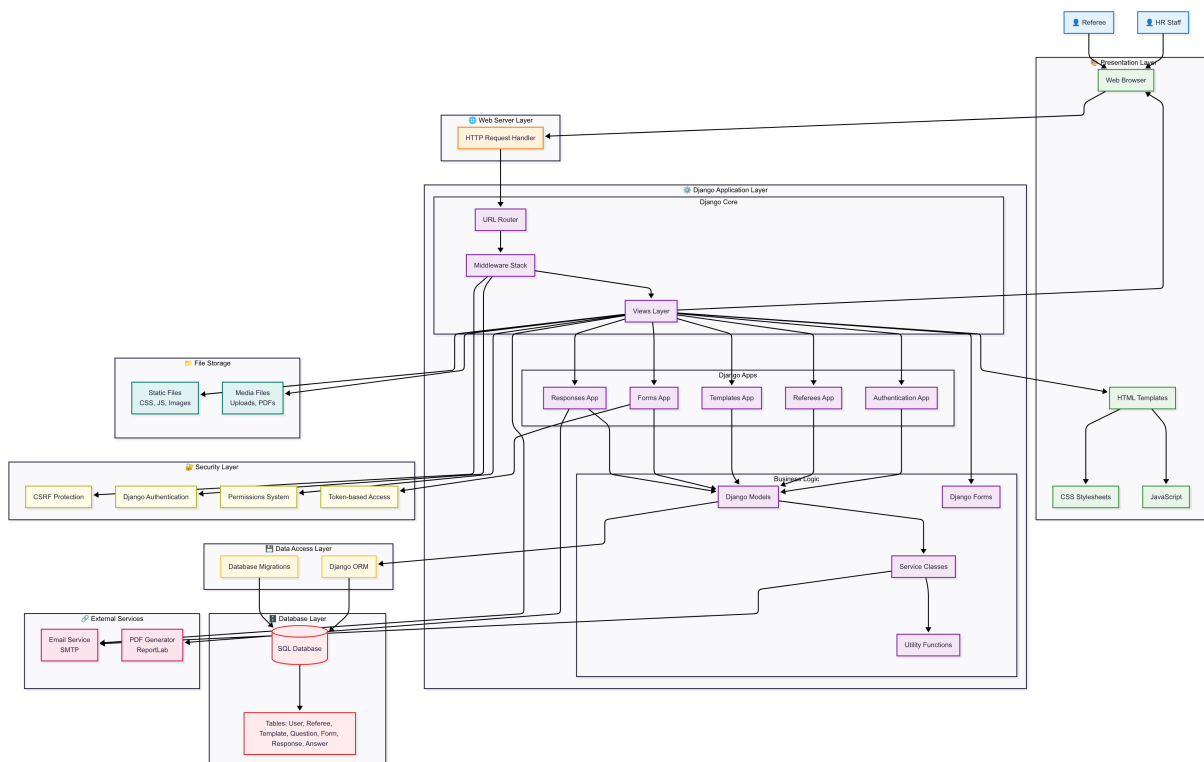


Figure 2.3: System Architecture Diagram of the HR Reference Checker System

The following table describes the key layers and components of the system architecture:

Layer / Component	Description
Presentation Layer (Web Browser)	The user interface accessed by HR staff and referees. Users interact with the system through web pages, forms, and notifications.
Web Server Layer (HTTP Request Handler)	Handles incoming HTTP requests and routes them to the Django application. Acts as the gateway between the client and the backend.
Django Application Layer	Built with the Django web framework, this layer manages the system's functionality through various apps such as user management, form handling, and response tracking.
Business Logic Layer	Contains the core logic for data processing, validation, rule enforcement, and workflow management. Ensures consistent behavior across the system.
Data Access Layer	Interfaces with the database using Django ORM to perform CRUD operations on system entities such as users, templates, and responses.
Database Layer	Stores all persistent data including users, referees, templates, forms, and submissions. Typically uses PostgreSQL or SQLite.
External Services	Integrates with third-party systems like email servers for notifications, PDF generators for exporting responses, or cloud APIs.
Security Layer	Ensures authentication, password hashing, session handling, permission checking, and protection against vulnerabilities (e.g., CSRF, SQL injection).
File Storage	Stores uploaded files and generated documents (e.g., PDFs). Can use local storage or external services like AWS S3.

Table 2.7: Description of System Architecture Layers and Components

2.10 Data Flow Diagram

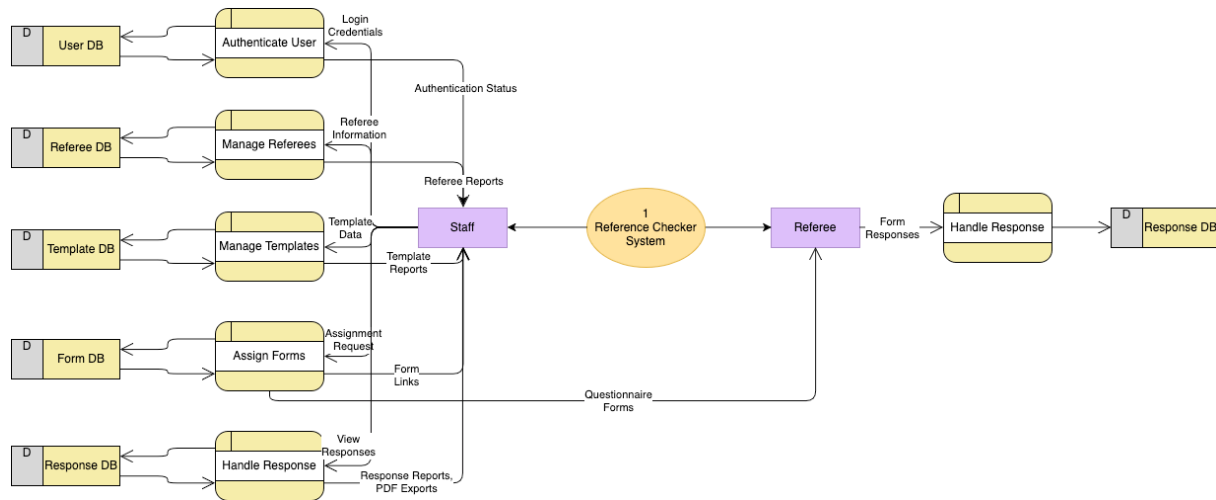


Figure 2.4: Data Flow Diagram of the HR Reference Checker System

The following table outlines key data flow processes involved in the system:

Process	Input	Output	Data Store
Authenticate User	Login Credentials	Authentication Status	User DB
Manage Referees	Referee Information	Referee Reports	Referee DB
Manage Templates	Template Data	Template Reports	Template DB
Assign Forms	Assignment Request	Form Links	Form DB
Handle Response	View Responses	Response Reports, PDF Exports	Response DB

Table 2.8: Data Flow Processes

The Data Flow Diagram (DFD) visualizes how data traverses through different components of the HR Reference Checker System. The primary external entities are the HR personnel (Staff) and Referees. HR personnel authenticate via login, manage referees and templates, and assign forms to referees. Each action interacts with a specific data store. Referees submit responses, which are then handled and stored in the Response DB. The central processing unit — the Reference Checker System — coordinates all data transactions between users, processes, and persistent storage.

Chapter 3

SPECIFIC REQUIREMENTS

3.1 Functional Requirements

3.1.1 User Authentication and Management

F001: User Login

Requirement ID	REQ_F001
Version	1.0
Description	System shall authenticate HR staff using username and password credentials
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F002
Version	1.0
Description	System shall display error message for invalid login credentials
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F003
Version	1.0
Description	System shall redirect authenticated users to the main dashboard
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F004
Version	1.0
Description	System shall maintain user session for 2 hours of inactivity before automatic logout
Author	ADAM FIKRI BIN MOHD LOTFI

F002: User Logout

Requirement ID	REQ_F005
Version	1.0
Description	System shall provide logout functionality accessible from all authenticated pages
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F006
Version	1.0
Description	System shall clear user session data upon logout
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F007
Version	1.0
Description	System shall redirect user to login page after successful logout
Author	ADAM FIKRI BIN MOHD LOTFI

F003: Forgot Password

Requirement ID	REQ_F008
Version	1.0
Description	System shall provide password reset functionality via email
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F009
Version	1.0
Description	System shall generate secure password reset tokens with 24-hour expiration
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F010
Version	1.0
Description	System shall validate email address format before sending reset instructions
Author	ADAM FIKRI BIN MOHD LOTFI

Use Case Specification - User Login

Use Case ID	UC001
Version	1.0
Feature	User Login
Purpose	Allow HR staff to access the system
Actor	HR Staff
Trigger	Actor navigates to login page and enters credentials

Table 3.1: Use Case Specification - User Login

Scenario	Step	Action
Main Flow	1	Actor enters username and password on login form
	2	Actor clicks "Login" button
	3	System validates credentials against user database
	4	System creates user session and redirects to dashboard
	5	System logs successful login event
Alternative Flow - Invalid Credentials	3.1	Username/password combination is invalid
	3.2	System displays error message: "Invalid username or password"
	3.3	System returns to login form
Alternative Flow - Account Inactive	3.1	User marked as inactive
	3.2	System displays error message: "Account is deactivated"

Table 3.2: User Login Use Case Scenarios

Rules: Only active HR staff accounts may login. Failed login attempts are logged for security.

3.1.2 Referee Management

F004: Add Referee

Requirement ID	REQ_F011
Version	1.0
Description	System shall allow HR staff to create new referee records with required fields: name, email, phone
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F012
Version	1.0
Description	System shall validate referee email address format and uniqueness within the system
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F013
Version	1.0
Description	System shall validate phone number format and length
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F014
Version	1.0
Description	System shall display success message after successful referee creation
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F015
Version	1.0
Description	System shall assign unique ID to each referee record
Author	ADAM FIKRI BIN MOHD LOTFI

F005: Edit Referee

Requirement ID	REQ_F016
Version	1.0
Description	System shall allow HR staff to modify existing referee information
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F017
Version	1.0
Description	System shall preserve referee ID when updating information
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F018
Version	1.0
Description	System shall validate updated information using same rules as creation
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F019
Version	1.0
Description	System shall log all changes made to referee records with times-tamp and user ID
Author	ADAM FIKRI BIN MOHD LOTFI

F006: Delete Referee

Requirement ID	REQ_F020
Version	1.0
Description	System shall allow HR staff to delete referee records
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F021
Version	1.0
Description	System shall display confirmation dialog before permanent deletion
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F022
Version	1.0
Description	System shall prevent deletion of referees with assigned active forms
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F023
Version	1.0
Description	System shall perform soft delete to maintain data integrity for completed responses
Author	ADAM FIKRI BIN MOHD LOTFI

Use Case Specification - Add Referee

Use Case ID	UC002
Version	1.0
Feature	Add Referee
Purpose	Allow HR staff to add new referee to the system
Actor	HR Staff
Trigger	Actor clicks "Add New Referee" button

Table 3.3: Use Case Specification - Add Referee

Scenario	Step	Action
Main Flow	1	Actor clicks "Add New Referee" button
	2	System displays referee creation form
	3	Actor fills in required fields (name, email, phone)
	4	Actor clicks "Save" button
	5	System validates input data and creates referee record
	6	System displays success message and returns to referee list
Alternative Flow - Validation Error	5.1	System detects invalid or duplicate data
	5.2	System highlights errors and displays specific error messages
	5.3	Actor corrects errors and resubmits

Table 3.4: Add Referee Use Case Scenarios

3.1.3 Template Management

F007: Add Template

Requirement ID	REQ_F024
Version	1.0
Description	System shall allow HR staff to create new question templates
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F025
Version	1.0
Description	System shall require template title and description
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F026
Version	1.0
Description	System shall associate templates with the creating user
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F027
Version	1.0
Description	System shall assign unique ID and creation timestamp to each template
Author	ADAM FIKRI BIN MOHD LOTFI

F008: Edit Template

Requirement ID	REQ_F028
Version	1.0
Description	System shall allow modification of template metadata (title, description)
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F029
Version	1.0
Description	System shall allow addition, modification, and removal of questions
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F030
Version	1.0
Description	System shall support reordering of questions within template
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F031
Version	1.0
Description	System shall prevent editing of templates with active assigned forms
Author	ADAM FIKRI BIN MOHD LOTFI

F009: Delete Template

Requirement ID	REQ_F032
Version	1.0
Description	System shall allow deletion of unused templates
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F033
Version	1.0
Description	System shall prevent deletion of templates with existing form assignments
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F034
Version	1.0
Description	System shall display confirmation dialog with impact assessment
Author	ADAM FIKRI BIN MOHD LOTFI

F010: Question Management

Requirement ID	REQ_F035
Version	1.0
Description	System shall support three question types: Text, Multiple Choice, and Rating Scale
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F036
Version	1.0
Description	System shall allow marking questions as required or optional
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F037
Version	1.0
Description	System shall support text questions with configurable character limits
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F038
Version	1.0
Description	System shall support multiple choice questions with single or multiple selection
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F039
Version	1.0
Description	System shall support rating scale questions with configurable min/max values and labels
Author	ADAM FIKRI BIN MOHD LOTFI

3.1.4 Form Management**F011: Generate Reference Form Link**

Requirement ID	REQ_F040
Version	1.0
Description	System shall generate unique, secure tokens for each form assignment
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F041
Version	1.0
Description	System shall create accessible URLs using the generated tokens
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F042
Version	1.0
Description	System shall associate forms with specific template and referee combinations
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F043
Version	1.0
Description	System shall set form status to "Pending" upon creation
Author	ADAM FIKRI BIN MOHD LOTFI

F012: Copy Form Link

Requirement ID	REQ_F044
Version	1.0
Description	System shall provide one-click copy functionality for form URLs
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F045
Version	1.0
Description	System shall display confirmation message after successful copy operation
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F046
Version	1.0
Description	System shall support clipboard integration across modern browsers
Author	ADAM FIKRI BIN MOHD LOTFI

F013: Assign Template to Referee

Requirement ID	REQ_F047
Version	1.0
Description	System shall allow HR staff to assign templates to specific referees
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F048
Version	1.0
Description	System shall prevent duplicate assignments of same template to same referee
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F049
Version	1.0
Description	System shall automatically generate form and unique link upon assignment
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F050
Version	1.0
Description	System shall track assignment date and assigning user
Author	ADAM FIKRI BIN MOHD LOTFI

3.1.5 Response Management

F014: View Submitted Responses

Requirement ID	REQ_F051
Version	1.0
Description	System shall display list of all submitted responses with filtering options
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F052
Version	1.0
Description	System shall show response metadata including submission date, referee, and template
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F053
Version	1.0
Description	System shall provide detailed view of individual responses with all answers
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F054
Version	1.0
Description	System shall support filtering by status, date range, template, and referee
Author	ADAM FIKRI BIN MOHD LOTFI

F015: Export to PDF

Requirement ID	REQ_F055
Version	1.0
Description	System shall generate PDF reports of individual responses
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F056
Version	1.0
Description	System shall include all response data, metadata, and formatting in PDF export
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F057
Version	1.0
Description	System shall generate PDFs within 10 seconds for standard responses
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F058
Version	1.0
Description	System shall support batch PDF generation for multiple responses
Author	ADAM FIKRI BIN MOHD LOTFI

F016: Submit Questionnaire Form

Requirement ID	REQ_F059
Version	1.0
Description	System shall provide accessible questionnaire interface for referees
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F060
Version	1.0
Description	System shall validate all required fields before submission
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F061
Version	1.0
Description	System shall prevent multiple submissions from same form link
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F062
Version	1.0
Description	System shall update form status to "Completed" upon successful submission
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F063
Version	1.0
Description	System shall display confirmation message to referee after submission
Author	ADAM FIKRI BIN MOHD LOTFI

3.1.6 Notification System

F017: Receive Notifications

Requirement ID	REQ_F064
Version	1.0
Description	System shall send email notifications to referees with form links
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F065
Version	1.0
Description	System shall notify HR staff when responses are submitted
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F066
Version	1.0
Description	System shall support configurable email templates for different notification types
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F067
Version	1.0
Description	System shall log all email notifications with delivery status
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F068
Version	1.0
Description	System shall provide retry mechanism for failed email deliveries
Author	ADAM FIKRI BIN MOHD LOTFI

3.1.7 Dashboard and Reporting

F018: Dashboard Overview

Requirement ID	REQ_F069
Version	1.0
Description	System shall display dashboard with summary statistics upon login
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F070
Version	1.0
Description	System shall show counts of pending, completed, and overdue responses
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F071
Version	1.0
Description	System shall display recent activity feed of system events
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F072
Version	1.0
Description	System shall provide quick action buttons for common tasks
Author	ADAM FIKRI BIN MOHD LOTFI

F019: Status Tracking

Requirement ID	REQ_F073
Version	1.0
Description	System shall track and display form status (Pending, In Progress, Completed, Expired)
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F074
Version	1.0
Description	System shall calculate and display response completion rates
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F075
Version	1.0
Description	System shall provide status-based filtering across all management interfaces
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F076
Version	1.0
Description	System shall send automated reminders for pending responses after configurable time periods
Author	ADAM FIKRI BIN MOHD LOTFI

3.1.8 Data Management and Search

F020: Search and Filter

Requirement ID	REQ_F077
Version	1.0
Description	System shall provide search functionality across referees, templates, and responses
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F078
Version	1.0
Description	System shall support advanced filtering with multiple criteria combinations
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F079
Version	1.0
Description	System shall maintain search performance with up to 10,000 records
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F080
Version	1.0
Description	System shall provide sorting options for all list views
Author	ADAM FIKRI BIN MOHD LOTFI

F021: Data Validation

Requirement ID	REQ_F081
Version	1.0
Description	System shall validate all user inputs according to defined business rules
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F082
Version	1.0
Description	System shall provide clear, specific error messages for validation failures
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F083
Version	1.0
Description	System shall prevent data corruption through comprehensive validation
Author	ADAM FIKRI BIN MOHD LOTFI

Requirement ID	REQ_F084
Version	1.0
Description	System shall maintain data consistency across all operations
Author	ADAM FIKRI BIN MOHD LOTFI

3.2 Non-Functional Requirements

3.2.1 Performance Requirements

Requirement ID	Description	Acceptance Criteria
REQ_NF001	System response time	Web pages should load within 3 seconds under normal load
REQ_NF002	Database query performance	Database queries should execute within 1 second
REQ_NF003	Concurrent users	System should support up to 50 concurrent users
REQ_NF004	PDF generation time	PDF reports should generate within 10 seconds

Table 3.5: Performance Requirements

3.2.2 Security Requirements

Requirement ID	Description	Acceptance Criteria
REQ_NF005	Password security	Passwords must be hashed using secure algorithms
REQ_NF006	Session management	User sessions should expire after 2 hours of inactivity
REQ_NF007	Data encryption	Sensitive data should be encrypted in transit (HTTPS)

Requirement ID	Description	Acceptance Criteria
REQ_NF008	Access control	Only authenticated users can access system functions
REQ_NF009	Form link security	Referee form links should use unique, non-guessable tokens

Table 3.6: Security Requirements

3.3 User Interface Requirements

Page/Feature	Requirements
Login Page	Simple form with username/password fields, forgot password link
Dashboard	Overview of pending responses, recent activities, quick action buttons
Referee Management	List view with search/filter, add/edit/delete functions
Template Management	Template builder with drag-and-drop question ordering
Form Management	Assignment interface, status tracking, bulk actions
Response Viewer	Clean display of responses with export options
Questionnaire Form	Clean, single-page form with progress indicator

Table 3.7: User Interface Requirements

3.4 Data Requirements

Data Type	Storage Requirements	Retention Period
User Accounts	Secure password hashing, audit trail	Indefinite
Referee Information	Contact details, relationship to applicant	7 years
Templates	Question content, metadata	Indefinite
Responses	All answer data, timestamps	7 years
System Logs	Error logs, access logs	1 year

Table 3.8: Data Storage Requirements

3.5 Entity Relationship Diagram

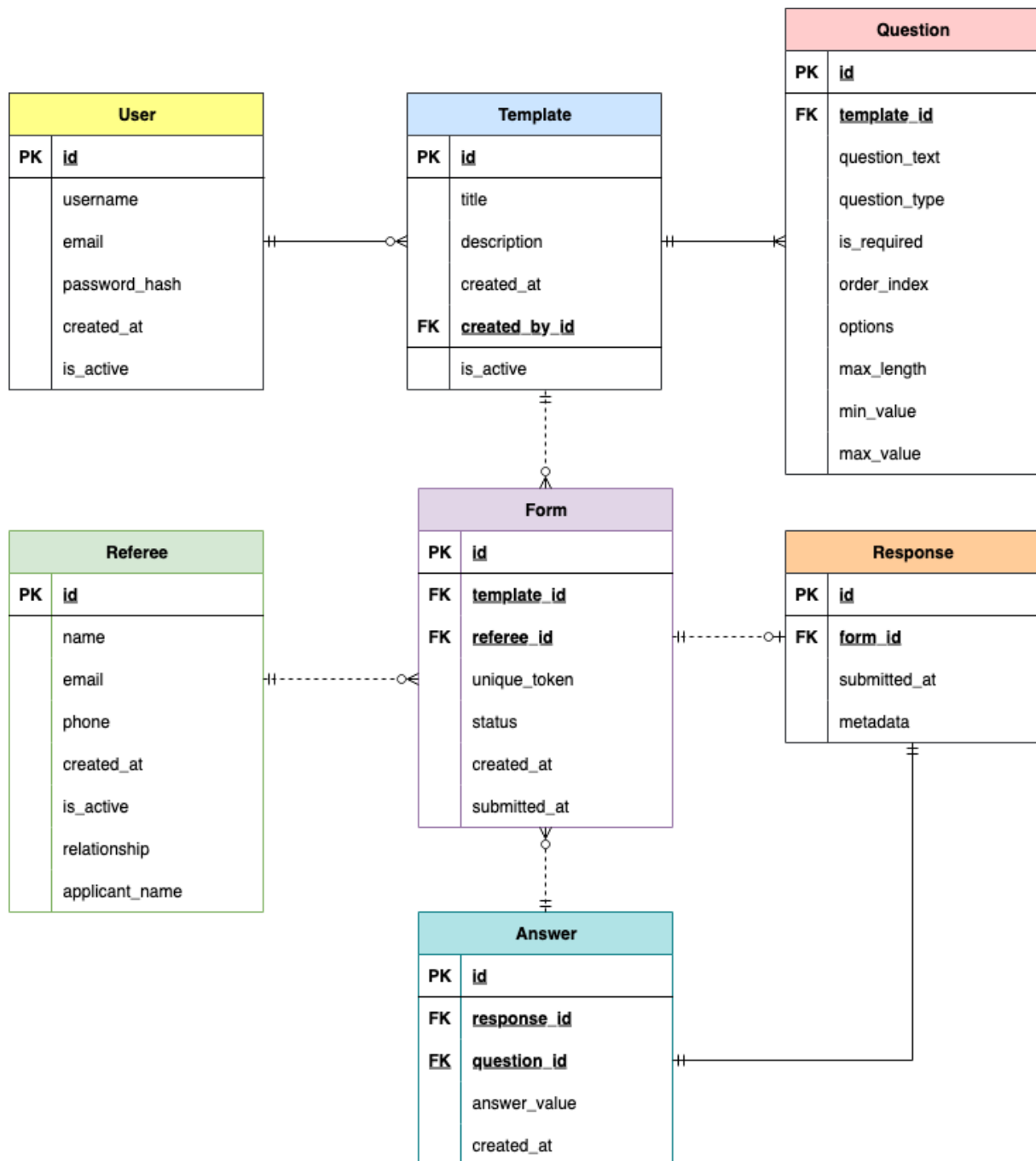


Figure 3.1: Entity Relationship Diagram of the HR Reference Checker System

3.5.1 Core Entities

The following table describes the core entities in the database and how they relate to each other:

Entity	Key Information Stored	Relationship with Other Entities
User	Username, email address, password (hashed), account status, and creation date	Creates one or more templates for reference forms
Referee	Applicant's name, referee's name, contact details (email, phone), their relationship, account status, and creation date	Assigned to one or more reference forms
Template	Title, description, creation date, and owner (User who created it)	Contains multiple questions; can be reused in multiple forms
Question	Text of the question, type (e.g., text, rating, MCQ), required status, and order	Linked to a specific template; may receive answers from referees
Form	Unique access token, status (e.g., pending, submitted), creation date	Created from a template, assigned to a referee, and linked to a single response
Response	Submission timestamp and metadata (e.g., IP address, browser info)	Linked to a specific form and contains multiple answers
Answer	Submitted value, creation time	Linked to a specific question and belongs to a specific response

Table 3.9: Core Database Entities and Their Relationships

The Entity Relationship Diagram (ERD) models the structure of the database behind the HR Reference Checker System. It includes key entities such as users (who manage templates), referees (who fill forms), and the linkage of templates to forms and questions. Each submitted response captures answers to these questions, forming the basis of the reporting system. The relationships are designed to enforce data integrity and allow scalable form reuse and reporting.

Chapter 4

APPENDICES

4.1 Sample Questionnaire Template

4.1.1 Template: Software Developer Reference Check

Question	Type	Required	Options/Scale
How long have you known the candidate?	Text	Yes	Max 200 characters
In what capacity did you work with the candidate?	Multiple Choice	Yes	<ul style="list-style-type: none">• Direct Supervisor• Colleague• Subordinate• Client• Other
Rate the candidate's technical skills	Rating Scale	Yes	1-5 (1=Poor, 5=Excellent)
Rate the candidate's communication skills	Rating Scale	Yes	1-5 (1=Poor, 5=Excellent)
Would you rehire this candidate?	Multiple Choice	Yes	<ul style="list-style-type: none">• Definitely Yes• Probably Yes• Maybe• Probably No• Definitely No
Additional comments about the candidate	Text	No	Max 1000 characters

Question	Type	Required	Options/Scale
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Table 4.1: Sample Questionnaire Template

4.2 Sample Referee Form

Reference Check for: [Candidate Name]
 Position Applied For: [Position Title]
 Company: [Company Name]

Dear [Referee Name],

You have been listed as a reference for [Candidate Name] who has applied for the position of [Position Title] at our company. We would appreciate your honest feedback about this candidate.

This form should take approximately 5–10 minutes to complete.
 All responses will be kept confidential.

Please click the link below to access the questionnaire:
 [Unique Form Link]

If you have any questions, please contact our HR department at hr@company.com

Thank you for your time and assistance.

Best regards,
 HR Department
 [Company Name]

4.3 Sample Exported PDF

4.3.1 Reference Check Report

Generated on: [Date and Time]

Generated by: [HR Staff Name]

Candidate Information

- **Name:** John Smith
- **Position Applied:** Senior Software Developer
- **Application Date:** July 15, 2025

Referee Information

- **Name:** Sarah Johnson
- **Email:** sarah.johnson@techcorp.com
- **Relationship:** Direct Supervisor
- **Response Date:** July 20, 2025

Responses

Question	Response
How long have you known the candidate?	I have worked with John for 3 years as his direct supervisor at TechCorp.
In what capacity did you work with the candidate?	Direct Supervisor
Rate the candidate's technical skills	5 - Excellent
Rate the candidate's communication skills	4 - Good
Would you rehire this candidate?	Definitely Yes
Additional comments about the candidate	John is an exceptional developer with strong problem-solving skills. He consistently delivers high-quality code and works well in team environments. He would be a valuable addition to any development team.

Table 4.2: Sample Response Data

Summary:

- **Overall Rating:** Highly Recommended
- **Response Completion:** 100%
- **Response Time:** 2 days

4.4 Regulatory Compliance References

4.4.1 Data Protection and Privacy Compliance

Regulation	Relevance	Compliance Requirements
GDPR	Applicable if processing EU residents' data	<ul style="list-style-type: none">• Explicit consent for data processing• Right to data portability• Right to be forgotten• Data breach notification
PDPA (Malaysia)	Applicable for Malaysian operations	<ul style="list-style-type: none">• Data subject consent• Data retention policies• Security safeguards• Notification of data breaches
Employment Law	Reference checking regulations	<ul style="list-style-type: none">• Fair and non-discriminatory practices• Relevant job-related questions only• Consistent reference checking process

Table 4.3: Regulatory Compliance Requirements

4.4.2 Security Standards

Standard	Description	Implementation
ISO 27001	Information Security Management	<ul style="list-style-type: none">• Risk assessment procedures• Security controls implementation• Regular security audits

Standard	Description	Implementation
OWASP Guide-lines	Web Application Security	<ul style="list-style-type: none">• Secure coding practices• Input validation• Authentication and authorization

Table 4.4: Security Standards Implementation

4.4.3 Best Practices for Reference Checking

Practice	Description	System Implementation
Consistent Process	Same questions for similar roles	Template-based questioning system
Documentation	Proper record keeping	Automated response logging and PDF export
Confidentiality	Secure handling of sensitive information	Encrypted data storage and transmission
Legal Compliance	Adherence to employment laws	Job-relevant questions only, audit trails

Table 4.5: Reference Checking Best Practices

4.4.4 Recommended Policies

1. Data Retention Policy

- Reference data retained for 7 years as per employment law requirements
- Automatic data purging after retention period
- Secure deletion procedures

2. Access Control Policy

- Role-based access to reference data
- Audit logging of all data access
- Regular access reviews

3. Email Security Policy

- Encrypted email communications
- Secure form links with expiration
- Email authentication requirements

4. Incident Response Policy

- Data breach notification procedures
- System security incident handling
- Communication protocols for security events

Chapter 5

CONCLUSION

This Software Requirements Specification document provides a comprehensive blueprint for the development of the HR Reference Checker System. The system is designed to modernize and streamline the traditional reference checking process by:

1. **Digitizing the Process:** Moving from manual phone calls to automated email-based questionnaires
2. **Standardizing Assessments:** Using consistent templates for fair and comprehensive evaluations
3. **Improving Efficiency:** Reducing time spent on reference checks while maintaining quality
4. **Enhancing Documentation:** Providing structured, exportable reports for decision-making
5. **Ensuring Compliance:** Meeting data protection and employment law requirements

5.1 Key Success Factors

Factor	Description
User Adoption	Intuitive interface design for both HR staff and referees
Data Security	Robust security measures to protect sensitive information
System Reliability	Stable performance under normal operational loads
Compliance Adherence	Meeting all regulatory and legal requirements
Scalability	Ability to handle growing numbers of users and references

Table 5.1: Key Success Factors

5.2 Future Enhancements

The initial version focuses on core functionality. Future versions may include:

- Mobile-responsive design for referee submissions

- Integration with existing HR systems
- Advanced analytics and reporting features
- Multi-language support
- API development for third-party integrations
- Automated reminder systems for pending responses

5.3 Implementation Timeline

Phase	Duration	Deliverables
Phase 1: Design & Planning	1.5 weeks	UI/UX designs, database schema, technical architecture
Phase 2: Core Development	5 weeks	User authentication, referee management, template creation
Phase 3: Form & Response System	3.5 weeks	Form generation, email integration, response collection
Phase 4: Reporting & Export	1.5 weeks	PDF generation, response viewing, data export
Phase 5: Testing & Deployment	1.5 weeks	System testing, user acceptance testing, production deployment
Total Estimated Duration:		13 weeks

Table 5.2: Implementation Timeline

5.3.1 Timeline Optimization Strategies

Optimization	Description	Time Saved
Parallel Development	UI design and database schema development in parallel during Phase 1	0.5 weeks
Agile Approach	Incremental development with continuous testing reduces final testing phase	0.5 weeks
Template Reuse	Leveraging Django's built-in features and existing UI components	1 week
Simplified MVP	Focus on core features first, defer advanced features to future releases	1.5 weeks
Early Integration	Begin integration testing during development phases	0.5 weeks

Table 5.3: Timeline Optimization Strategies

This document serves as the foundation for development activities and should be referenced throughout the project lifecycle to ensure all requirements are met and stakeholder expectations are fulfilled.