

BI and Analytics Use Cases



Implementation Plan for Use Cases



Practitioner 360 Functional and Non-Functional Requirements

Functional Requirements

- Centralized practitioner dashboard to aggregate data from multiple systems.
- Data integration to Mumaris Plus, Tawasul, and other databases.
- AI-driven analytics capabilities for prioritizing and recommending resolutions.
- Role-based access for data security and privacy.
- Real-time ticket status updates with detailed practitioner insights.
- User-friendly interface designed for Customer Care employees.

Non-Functional Requirements

- High availability and low latency for real-time data updates.
- Scalable infrastructure to handle increasing data and user loads.
- Secure integration with systems (e.g., Mumaris Plus, Tawasul).
- Compliance with data protection standards
- Responsive and intuitive dashboard UI/UX for seamless usage.

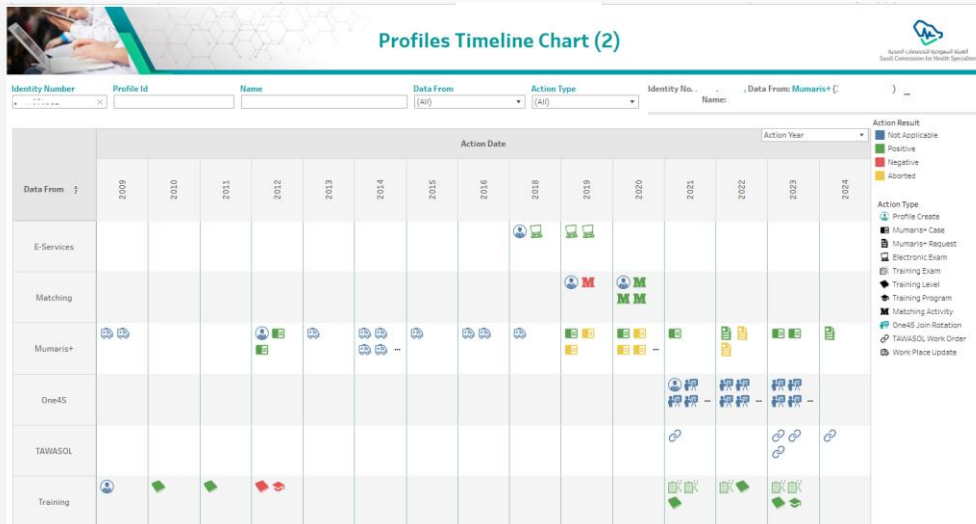


Practitioner 360 High-Level Design

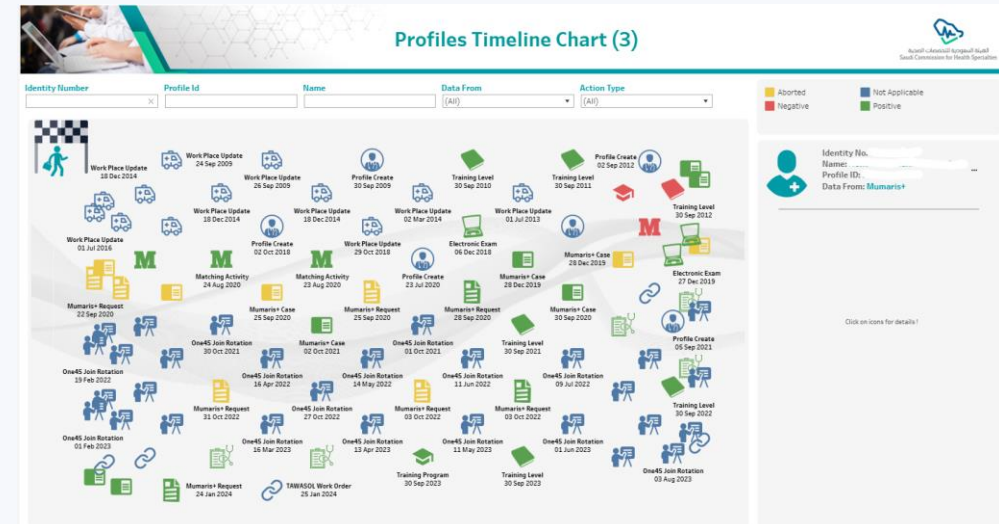
High-Level Design

- The new use case will be inspired by the and structure of the example below but enhanced with additional functionality, improved interactivity, and a more modern, user-friendly design to better meet project requirements

1



2



Practitioner 360 Development

Key Components to Develop:

- **Functional Development:**
 - Data integration pipelines for real-time updates from Mumaris Plus, Tawasul, and other databases.
 - AI algorithms for ticket prioritization and resolution recommendations.
 - Tableau dashboards and analytics widgets.
 - Role-based access controls for data privacy.
 - Responsive and intuitive UI/UX.
- **Non-Functional Development:**
 - Encryption of sensitive data.
 - Optimization of response times.
 - Building scalable backend infrastructure.

Development Approach:

- Agile methodology with sprints to deliver functional increments.
- Collaboration between the Data Solutions Team and Customer Care Department.

Staging and Production Environment Preparations

Staging Environment:

- Mock data for testing analytics functionalities.
- Secure, isolated environment for development and testing.

Production Environment:

- Cloud or on-premise hosting with real-time data pipelines.
- Scalable infrastructure for increasing user loads.



Practitioner 360 Testing and Timeline

Testing Scope

- Functional testing: Validate dashboard features, data accuracy, and AI outputs.
- Performance testing: Ensure low latency and scalability under heavy loads.
- Security testing: Verify role-based access and data encryption.
- Usability testing: Gather feedback from Customer Care employees.

Types of Testing:

- System Testing: Validate end-to-end functionality.
- User Acceptance Testing (UAT): Confirm the dashboard meets operational needs.

Timeline

- Pilot of use case By 06/2025
- Complete use case By 12/2025



Practitioner 360 Required Resources and Acceptance Criteria

Required Resources

- Project Manager: Oversee project timeline and deliverables.
- Data Engineers: Develop DataMart.
- Data Scientists: Build and validate AI algorithms.
- BI Specialist: Design and implement dashboard interfaces.
- Customer Care Representatives: Provide feedback and validate use case functionality.

Acceptance Criteria:

- Successful integration of practitioner and ticketing and other data sources.
- Real-time synchronization of dashboard data from the Datamart.
- Positive feedback from UAT with a >80% satisfaction rate among Customer Care employees.
- Reduction in ticket handling time by at least 20% for the ticket that needs looking to the history.
- Operational readiness confirmed with no major issues during pilot deployment.
- Compliance with data security and privacy standards.



AI Agent Functional and Non-Functional Requirements

Functional Requirements

- **Interactive Query Handling:**
 - Enable user-specific access to information using Natural Language Processing (NLP) based on permissions.
 - Provide real-time responses to user inquiries.
 - Support inquiries related to regulations, services, and follow-ups on registered requests.
- **Personal Assistance Features:**
 - Offer task management and daily work assistance for employees.
 - Summarize data and generate periodic insights for managers.
- **Data Analytics:** Perform exploratory, descriptive, diagnostic, and predictive analyses.
- **Role-Based Permissions:** Allocate user access and data visibility based on job roles.
- **Periodic Reporting:** Generate reports on service effectiveness, common queries, and system performance.

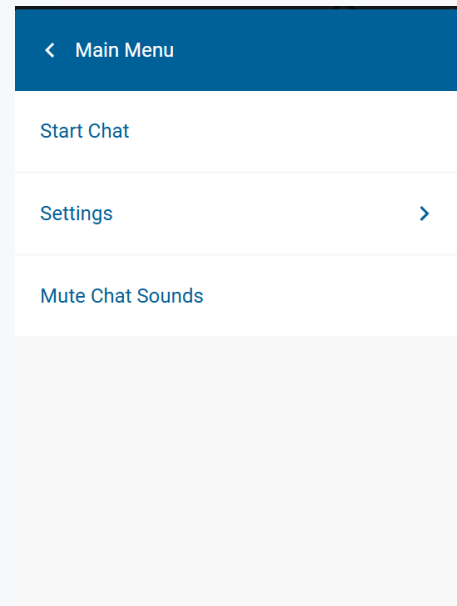
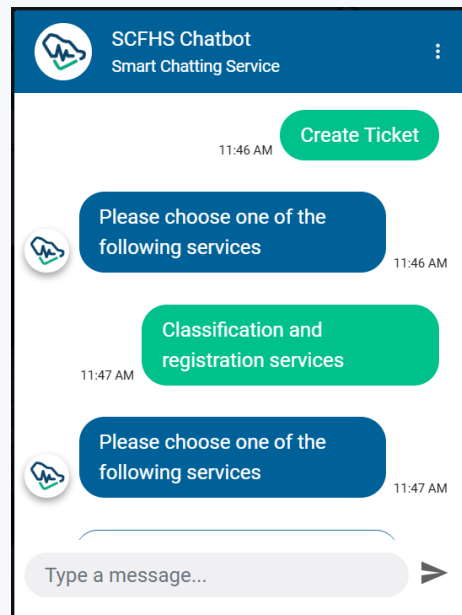
Non-Functional Requirements

- **Performance:**
 - Ensure query responses are processed within 20 seconds.
 - Handle concurrent users without latency.
- **Security:** Implement robust encryption and secure access based on user roles.
- **Scalability:** Support increasing volumes of user queries and data.
- **Usability:** Ensure the user interface is simple, intuitive, and multilingual.
- **Reliability:** Maintain 95% uptime.



AI Agent High-Level Design and Staging and Production Environment Preparations

High-Level Design



Staging and Production Environment Preparations

Staging Environment:

- Mock data for testing analytics functionalities.
- Secure, isolated environment for development and testing.

Production Environment:

- on-premise hosting with real-time data pipelines.
- Scalable infrastructure for increasing user loads.



AI Agent Development

Key Components to Develop:

- Functional Development:
 - NLP integration for natural language query handling.
 - Machine learning (ML) models for predictive analysis.
 - Role-based access system integration.
- Non-Functional Development:
 - Encryption of sensitive data.
 - Optimization of response times.
 - Building scalable backend infrastructure.

Development Approach:

- Agile methodology with sprints to deliver functional increments.
- Collaboration between the Data Solutions Team and IT Department.



AI Agent Testing and Timeline

Testing Scope

- Functional testing of all interactive features.
- Performance testing for query processing speed.
- Security testing to validate data access restrictions.
- Usability testing for interface navigation

Types of Testing:

- System Testing: Validate end-to-end functionality.
- User Acceptance Testing (UAT): Confirm the dashboard meets operational needs.

Timeline

- Pilot of use case By 06/2026
- Complete use case By 12/2027



AI Agent Required Resources and Acceptance Criteria

Required Resources

- Project Manager: Oversee project timeline and deliverables.
- Data Engineers: Develop DataMart.
- Data Scientists: Build and validate AI algorithms.
- Backend Developers: Build data integration and processing systems.
- Frontend Developers: Design the chat interface
- BI Specialist: Design and implement dashboard interfaces.
- System Administrators: Configure staging and production environments.

Acceptance Criteria:

- **System Functionality:**
 - Accurate and secure responses to queries within SLA limits.
 - Role-based access implemented correctly.
- **User Experience:**
 - User-friendly and error-free interface.
 - Feedback from UAT indicates satisfaction.
- **Performance:**
 - Handles 10 concurrent users without latency.
 - Uptime meets or exceeds 95%.
- **Analytics Insights:**
 - Reports provide actionable insights aligning with objectives.
 - Predictive models demonstrate >75% accuracy.
- **Stakeholder Satisfaction:** Positive feedback from managers, employees, and practitioners during pilot and post-deployment reviews.



Assessment Department Project : Functional and Non-Functional Requirements

Functional Requirements

- **Performance Reports:** Generate detailed reports on trainees' and practitioners' exam performance.
- **Strength and Weakness Analysis:** Use analytics tools to identify areas of improvement.
- **Benchmarking Comparisons:** Enable comparison between institutions (universities, training centers).
- **Exploratory Analysis:** Identify patterns and trends from exam and inquiry data.
- **Descriptive Analytics:** Provide statistical summaries (e.g., averages, ratios, standard deviations).
- **Diagnostic Analytics:** Identify root causes for high or low performance (like which category of the exam impacting the score) .
- **Real-Time Data Integration:** Consolidate data from multiple systems (e.g., Exam result, Matching System)..

Non-Functional Requirements

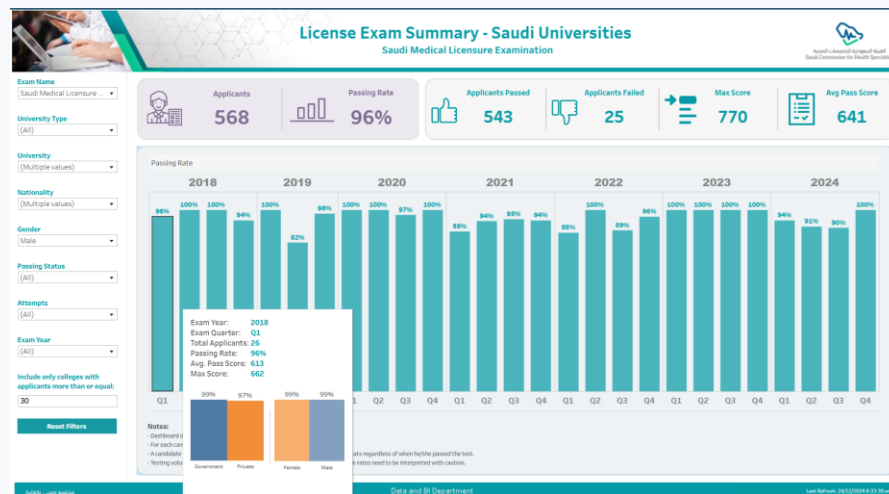
- **Performance:** Ensure system responsiveness under peak load (<2 seconds latency).
- **Scalability:** Handle increasing data volumes and user demands.
- **Security:** Role-based access control and data encryption.
- **Availability:** 99.9% uptime with robust disaster recovery.
- **User-Friendliness:** Intuitive dashboards for easy navigation and reporting.



Assessment Department Project : High-Level Design

High-Level Design

- Something similar to below the Dashboard but with more functionality



Staging and Production Environment Preparations

Staging Environment:

- Mock data for testing analytics functionalities.
- Secure, isolated environment for development and testing.

Production Environment:

- on-premise hosting with real-time data pipelines.
- Scalable infrastructure for increasing user loads.



Assessment Department Project : Development

Key Components to Develop:

- Functional Development:
 - Core Components to Develop:
 - Data integration pipelines from Exam result, Matching System, and other sources.
 - Analytical models for exploratory, descriptive, and diagnostic insights.
 - Tableau dashboards for visualization and reporting.
 - Role-based access control for data security.
- Non-Functional Development:
 - Encryption of sensitive data.
 - Optimization of response times.
 - Building scalable backend infrastructure.

Development Approach:

- Agile methodology with sprints to deliver functional increments.
- Collaboration between the Data Solutions Team and Assessment Department .



Assessment Department Project : Testing and Timeline

Testing Scope

- Functional testing: Validate dashboard features, data accuracy, and Advance analytics outputs.
- Performance testing: Ensure low latency and scalability under heavy loads.
- Security testing: Verify role-based access and data encryption.
- Usability testing: Gather feedback from University Deans and DIO .

Types of Testing:

- System Testing: Validate end-to-end functionality.
- User Acceptance Testing (UAT): Confirm the dashboard meets operational needs.

Timeline

- Pilot of use case By 6/2025
- Complete use case By 12/2025



Assessment Department Project :Required Resources and Acceptance Criteria

Required Resources

- Project Manager: Oversee project timeline and deliverables.
- Data Engineers: Develop DataMart.
- Data Scientists: Build and validate AI algorithms.
- BI Specialist: Design and implement dashboard interfaces.

Acceptance Criteria:

- **System Functionality:**
 - Accurate and secure responses to queries within SLA limits.
 - Role-based access implemented correctly.
- **User Experience:**
 - User-friendly and error-free interface.
 - Feedback from UAT indicates satisfaction.
- **Performance:**
 - Handles 100 concurrent users without latency.
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- **Analytics Insights:**
 - Reports provide actionable insights aligning with objectives.
- **Stakeholder Satisfaction:** Positive feedback from managers, employees, and practitioners during pilot and post-deployment reviews.



THANK YOU.

