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**New Reporting Tool Implementation Using Python Streamlit**

ICM Computer Systems Limited – VER 20240918

I7DW: new Reporting Tool Implementation Using Python Streamlit

ICM COMPUTER SYSTEMS LIMITED

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**Project Plan**: Transition from SSRS to Python Streamlit Reporting System

**Project Overview**:

This project aims to transition from the existing SSRS reporting system to a new solution using Python Streamlit. The new system will enhance interactivity, visual quality, and ease of report development and maintenance. The project will be executed in multiple phases, with defined responsibilities across various teams. The solution will be implemented on-premises, and existing stored procedures will be used to maintain continuity with the current system.

# Project Phases:

## 1. Initial Demo Phase (35-45 hours)

**Description**:

Develop a prototype featuring key reports, interactive widgets, and dynamic visualizations. The goal is to validate functionality and the visual interface, ensuring they surpass SSRS limitations.

**Deliverables**:

* Functional prototype with dynamic and interactive reports.
* Charts and tables based on data extracted through existing stored procedures.
* Simplified interface with optimized navigation.

**Main Engineers**: Nicolas da Silva

**Support Engineers**: Darren L.

## 2. Review and Feedback Phase (20-30 hours)

**Description**:

Collect feedback on the prototype, adjust functionalities and interface based on received comments and revisions.

**Deliverables**:

* Adjusted reports with improved interactivity.
* Second demo ready for review.

**Main Engineers**: Nicolas da Silva

**Support Engineers**: Darren L, Derek.

## 3. Template Creation and Testing (35-45 hours)

**Description**:

Develop templates for future reports to standardize visualizations and interactions.

Prepare an on-premises installation package to be used on local machines.

Try to measure how much time will be spent to create a new report from a Python template then measure how much time will be spent to generate all the active SSRS reports.

**Deliverables**:

* Report templates in Streamlit.
* .bat file for installing Python and dependencies.

**Main Engineers**: Nicolas da Silva

**Support Engineers**: Darren L, Derek, Paul H.

## 4. Versioning control

**Description**:

Implement version control for the project in Azure DevOps to enable efficient project management, code deployment, and version tracking.

**Deliverables**:

* Azure DevOps project setup for version control.
* Process established for deploying new versions

**Main Engineers**: Derek

**Support Engineers**: Nicolas da Silva, Darren.

## 5. Testing and Quality Assurance (QA)

**Description:**  
Conduct extensive testing to ensure system reliability and performance. This phase includes integration, performance, and user acceptance testing.

**Deliverables:**

* Integration testing to validate compatibility with stored procedures.
* Performance testing under real-world data loads.
* User Acceptance Testing (UAT) to gather feedback from end-users.

**Main Engineers:** Nicolas da Silva

**Support Engineers:** QA Team

## 6. Monitoring and Logging

**Description:**  
Set up monitoring and logging mechanisms to track errors, performance metrics, and user activity after deployment.

**Deliverables:**

* Logging system to track errors and report usage.
* Performance monitoring system.

**Main Engineers:** Nicolas da Silva

**Support Engineers:** Darren L., Paul H.

## Team Responsibilities:

**Network Team:**

* **Verification:** Review the .bat file to ensure correct installation of Python and project dependencies.
* **Configuration:** Confirm that all essential libraries such as pandas, streamlit, and plotly are installed.
* **Maintenance:** Monitor and manage updates to the libraries and Streamlit, including testing for potential incompatibilities.
* **Security:** Ensure the secrets file, containing credentials for the database connection, is properly configured and securely stored.
* **Planning:** Collaborate with the Python developer for regular updates and library maintenance.

**Data Team:**

* **Stored Procedures Maintenance:** Ensure the existing stored procedures and SQL functions are optimized for use in the new Streamlit reports. Collaborate with the Python developer to address any performance-related issues.

**Python Developer:**

* **Report Development:** Implement and test reports using Python Streamlit, leveraging existing stored procedures and SQL scripts.
* **Ongoing Maintenance:** Responsible for updating the project code and documentation, including adding new reports and maintaining dependencies.
* **Testing:** Conduct integration and performance tests, ensuring system robustness and user satisfaction.

**Update Planning and Monitoring:**

* **Streamlit and Libraries:** Regular review cycle with the network team for updating Streamlit and associated libraries. Ensure a clear update process is in place to avoid disrupting the production environment.
* **Compatibility Testing:** Conduct tests with new versions of Streamlit and key libraries to ensure performance and compatibility before deploying updates.

**Additional Considerations:**

1. **Documentation:**
   * **Technical Documentation:** Comprehensive technical documentation should be developed for installation, maintenance, and troubleshooting. This will be essential for future support.
   * **User Documentation:** Provide easy-to-understand documentation for end-users to explain how to navigate and use the new reports, especially focusing on new interactive features.
2. **Security and Compliance:**
   * Ensure secure handling of database credentials within the secrets file and that only authorized personnel have access to critical components of the system.
   * Maintain compliance with the company’s security policies and regulations related to sensitive data handling.
3. **Performance Optimization:**
   * Regular performance assessments should be carried out, especially focusing on reports that handle large datasets, ensuring that the Streamlit reports outperform or match SSRS in terms of efficiency.

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