1. Abstract   
   This project involves the integration of student data from Salesforce to HireSmith while ensuring data consistency, code development and maintenance, performance, usability, collaboration, and version control.
2. Scope

The scope of this project is to develop and implement a data integration system that seamlessly transfers student data from Salesforce to HireSmith while adhering to specific requirements.

1. Schedule

|  | **Milestone** | **Task** | **Description** |
| --- | --- | --- | --- |
| 1 | Integration System Setup | 1.1.Get access to Salesforce | To initiate the Integration System Setup, the first step is to gain access to Salesforce, which is the cloud-based Customer Relationship Management (CRM) platform. This access is essential for establishing data connections and enabling seamless data flow between Salesforce and other systems or applications. |
| 1.2. Install necessary software for backend access | List of software tools needed:   1. WinSCP 2. Putty 3. Sophos VPN Client 4. MySQL Workbench |
| 2 | DBMS Query Development | 2.1 Data Schema Analysis | Before proceeding with query development, it is crucial to conduct a comprehensive analysis of the data schema within the present MySQL database. This involves understanding the structure of the database, including tables, relationships, and data types. This analysis is essential for crafting efficient and accurate database queries. |
| 2.2 Query Development | Once the data schema analysis is complete, the next step is to develop queries for extracting, updating, or manipulating data within the database.  These queries should be tailored to specific business requirements and should ensure that the integration system can access the necessary data for various functions. |
| 2.3. Perform unit testing | Testing to ensure appropriate tables were populated and no data is missing |
| 2.4. Fix bugs | Fix bugs discovered during testing |
| 3 | Code Development & Testing | 3.1 Unit Testing | Developers should perform unit testing to ensure that individual code components are functioning correctly. This involves testing functions, classes, or modules in isolation. |
| 3.2 Data Consistency Testing | Consistency testing is essential to verify that the system works as a whole, with all components interacting seamlessly. This stage tests data flows and interactions between Salesforce and other systems. |
| 3.3 Performance Testing | Performance testing evaluates the integration system's efficiency, scalability, and responsiveness. It assesses how well the system performs under various loads and conditions. |
| 3.4 User Acceptance Testing (UAT) | UAT involves end-users or stakeholders testing the integration system to ensure that it meets business requirements and is user-friendly. It helps in verifying that the integration system aligns with the intended use cases. |
| 3.5 Prepare a user manual | Throughout the code development and testing phases, comprehensive documentation should be maintained. This documentation includes code comments, user guides, and system documentation to facilitate future maintenance and troubleshooting. |
| 4 | Collaboration & Version Control Setup | 4.1 Setup Version Control System | Implement a version control system (e.g., Git) for managing the codebase. Version control allows for tracking changes, collaborating with team members, and ensuring code integrity. |

The following list encapsulates the important tasks with planned weeks:

**Week 1 (October 8 - October 14):** Integration System Setup

Task 1.1: Get access to Salesforce

Task 1.2: Install necessary software (WinSCP, Putty, Sophos VPN Client, MySQL Workbench)

**Week 2 (October 15 - October 21):** DBMS Query Development

Task 2.1: Data Schema Analysis

Task 2.2: Query Development

**Week 3 (October 22 - October 28):** DBMS Query Development

Task 2.3: Perform unit testing (for the queries developed)

Task 2.4: Fix bugs (if any are discovered during testing)

**Week 4 (October 29 - November 4):** Code Development & Testing

Task 3.1: Unit Testing (of code components)

Task 3.2: Integration Testing

Task 4.1: Setup Version Control System

**Week 5 (November 5 - November 11):** Code Development & Testing

Task 3.3: Performance Testing

Task 3.4: User Acceptance Testing (UAT)

Task 3.5: Documentation (Ongoing)

**Week 6 (November 19th - November 25):** Collaboration & Version Control Setup

Task 3.5: Documentation (Continued)

Task 4.1: Setup version control

Task X: Training and Handoff

1. Communication Plan

| Name | Designation | Email |
| --- | --- | --- |
| Jeff Stoltzfuz | Project Director | jlstoltz@umd.edu |
| [Tharun Kumar Reddy Polu](mailto:tharunp@umd.edu) | Primary Code Developer | tharunp@umd.edu |

1. Technical Specifications:

* Python
* SQL - MySQL
* Git
* WinSCP
* Putty

1. Hand-off Plan
   1. Training Plan:

The training plan is a crucial component of the hand-off process, ensuring that the individuals involved are proficient in operating and maintaining the integrated system. The plan should encompass both training and documentation creation. These details are to be finalized no later than November 24th 2023.

Training Participants:

Tharun Kumar Reddy (Primary Python Developer) who will be responsible for managing and configuring the integrated system.

* 1. Final Product Location: On the Smith School cloud server

1. Deliverables

* Integration system setup with a low error rate.
* DBMS queries adhering to the pre-existing database schema design.
* Code/scripts with clear comments and minimal API calls.
* Integration processes completing within the defined time frame.
* Usability with understandable error logs and maintenance procedures.
* Collaboration system for OCS code developer and project team.
* Version control using GitLab.
* Data consistency between Salesforce and HireSmith.