Development project for The Modern World History Museum of South Africa

Compiled by:

* Armand Metelerkamp (Project Leader) - 30729696
* Heino Louwrens - 29968119
* Martin du Plooy - 30745004
* Louw Pretorious - 30373646
* Robbie van Breda - 25046659

Date: 30 Augustus 2019

**CMPG223 Group Project Final Mark Sheet**

**NAMES OF GROUP MEMBERS:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **SHORT DESCRIPTION OF THE TOPIC:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **PROGRAMMING LANGUAGE:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

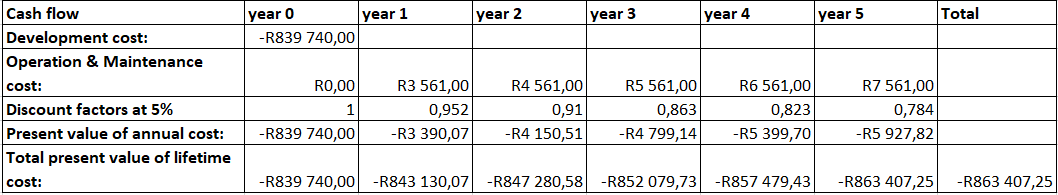
**DBMS:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

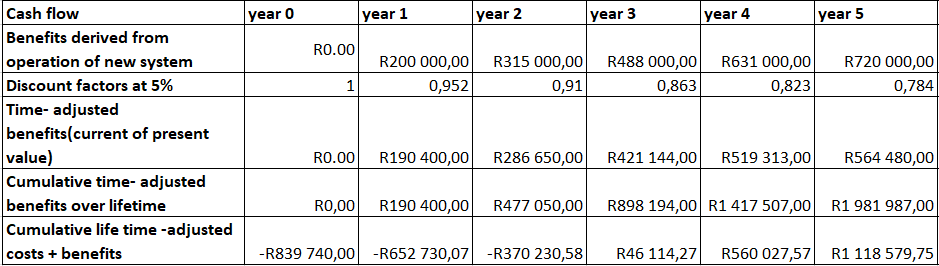
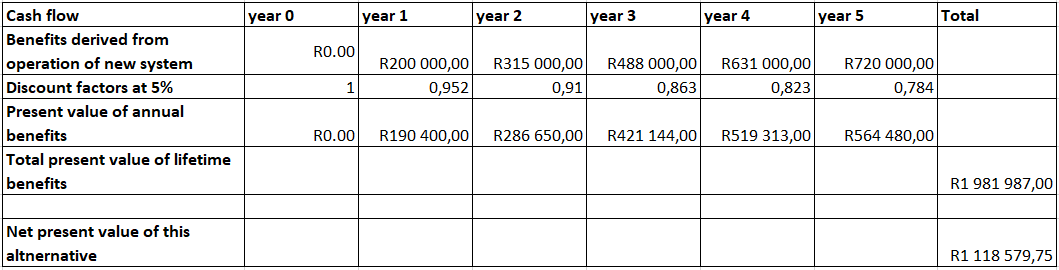
|  |  |  |
| --- | --- | --- |
| **Criteria** | **Total** | **Mark** |
| Project plan in MS Project | 10 |  |
| Feasibility Matrix with Cost Benefit Analysis | 10 |  |
| Physical Data Model  • Entities  • Attributes  • PK’s  • FK’s  • Relationships  • Referential Integrity  • Database has minimum duplication  • Efficient design | 25 |  |
| Physical Process Model | 20 |  |
| Network Architecture DFD | 10 |  |
| Prototypes of input, output and user interface (Hard copy) | 15 |  |
| Database schema created electronically according to physical data model (Hard copy) | 10 |  |
| Example code, e.g. code verifying input | 10 |  |
| Example reports generated from your system | 10 |  |
| Test document: see P 691 – 692 on acceptance testing Hand in proof of:  • verification testing (alpha testing), 2 x test cases per table  • integration testing, e.g. data entered appears correctly on all reports | 20 |  |
| User manual: Table of content and index, ‘getting started’, easy to follow instructions, technical compilation | 25 |  |
| Detail diary of time spent by each member on the project | 15 |  |
| CD with ALL documentation and source code | 10 |  |
| Hardcopy of all of above | 10 |  |
| Presentation / Demonstration:  • Program must be installed from CD  • Whole team participates  • On time for appointment  • Computer set up correctly  • Questions answered correctly | 10 |  |
| System itself:  • Professional and functional  • For all tables identified in data model, functionality to :  o create new records,  o update records  o remove records  o input data validation  • Integration test, i.e. correctness of input and output  • Reports: Professional layout, well planned, accuracy of output  • Calculations, sorting, fast and effective searching of data  • User friendly system, help function  • Efficient program code | 70 |  |
| Complexity/ level of difficulty | 10 |  |
| Bonus marks | 10 |  |
| System not ready for demonstration on date and time of appointment | -50 |  |
| TOTAL | /300 |  |
|  | /300 …8 /100 |  |

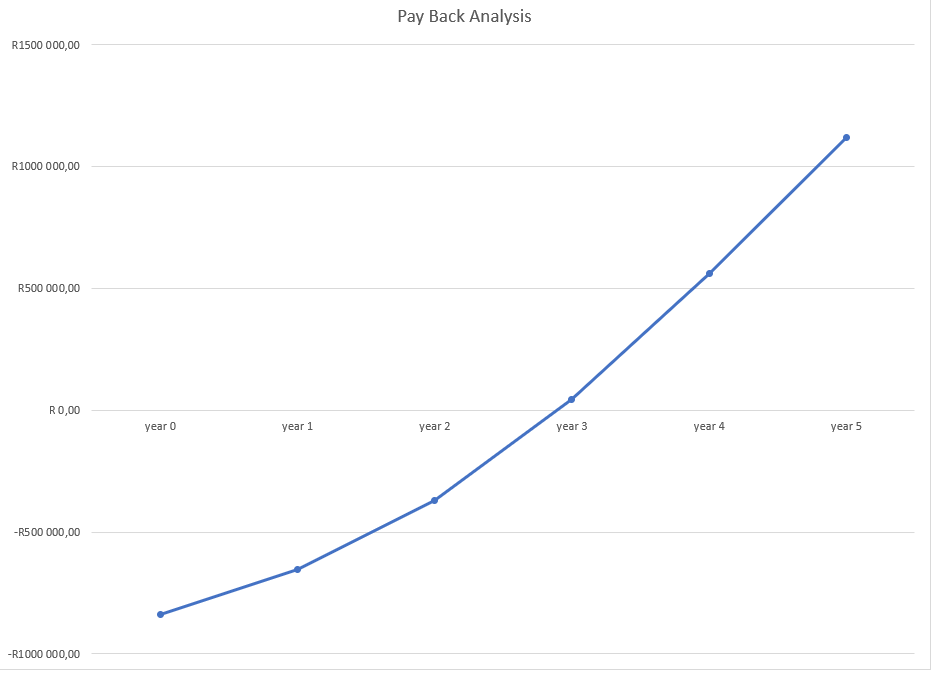
# Feasibility Analysis Matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Wt. | Candidate 1  AS-IS | Candidate 2  COTS Package Software Solution (Altru) | Candidate 3  Custom Designed Solution |
| Description |  |  |  |  |
| Technical feasibility. | 20% | This candidate can be used, but it cannot be changed by the project team.  Score: 10% | The candidate system can be easily installed and is very easy to use. However, people can be very sceptical to use a cloud-based server service, as it can be seen as a high risk to lose al of the system’s data.  Score: 50% | The candidate will be programmed in C# language and SQL Server database software that is well-known by the project team.  Score: 80% |
| Operational feasibility. | 20% | The candidate solution will satisfy most business requirements, but is inefficient and time-consuming.  Score: 30% | The candidate system can satisfy most business requirements, expect that exhibits can’t be checked for historical accuracy.  The system is complex due to it’s cloud-based nature.  Score: 65% | The candidate system will satisfy all business requirements and will have customer functionality as well.  It will make the work environment more efficient and will decrease employees’ workload a lot.  The system will have user-friendly interfaces.  Score: 90% |
| Risk feasibility | 20% | Physical representations of data are used, which could get lost or destroyed.  Score: 10% | Due to the use of cloud-based functionality, there is a higher risk of data being lost or stolen if not taken care of properly.  Score: 30% | The project team has experience and knowledge in C# programming language used to implement the system. Failed implementation is low.  Score: 85% |
| Economic feasibility:  Cost to develop:  Payback period:  Net present value:  Detailed calculations: | 20% | N/A  N/A  N/A  N/A  Score: 100% | Approximately R900 000  An unknown period of time. The system is an investment.  R10000  Score: 75% | R R839 740,00  Payback: 3 years  R34 786,75  Score: 90% |
| Schedule feasibility | 10% | No changes will have to be made.  Score: 10% | The team is sceptical over cloud-based functionality and also unfamiliar. Additional time may be needed to complete the system as well as adjustments.  Score: 45% | The candidate requires the project team to create all interfaces from scratch, thus by means of reverse scheduling and resource levelling the system can be will likely be completed in the scheduled time. (8 months needed)    Score: 80% |
| Legal feasibility | 10% | No foreseeable legal problems.  Score: 100% | No foreseeable legal problems.  Score: 100% | No foreseeable legal problems.  Score: 100% |
| Weighted feasibility. | 100% | 41% | 62% | 87% |

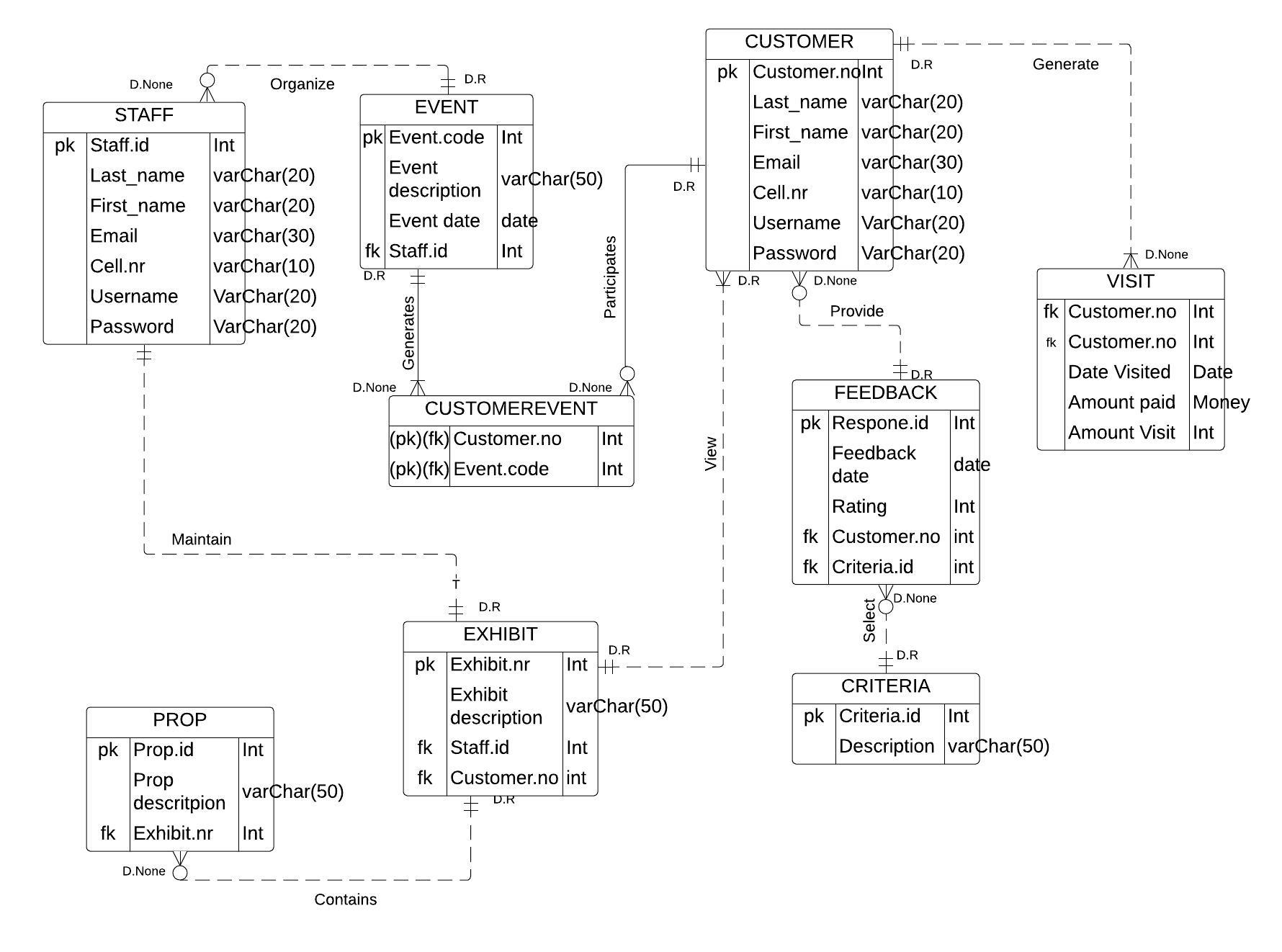
**Cost Benefit Analysis**

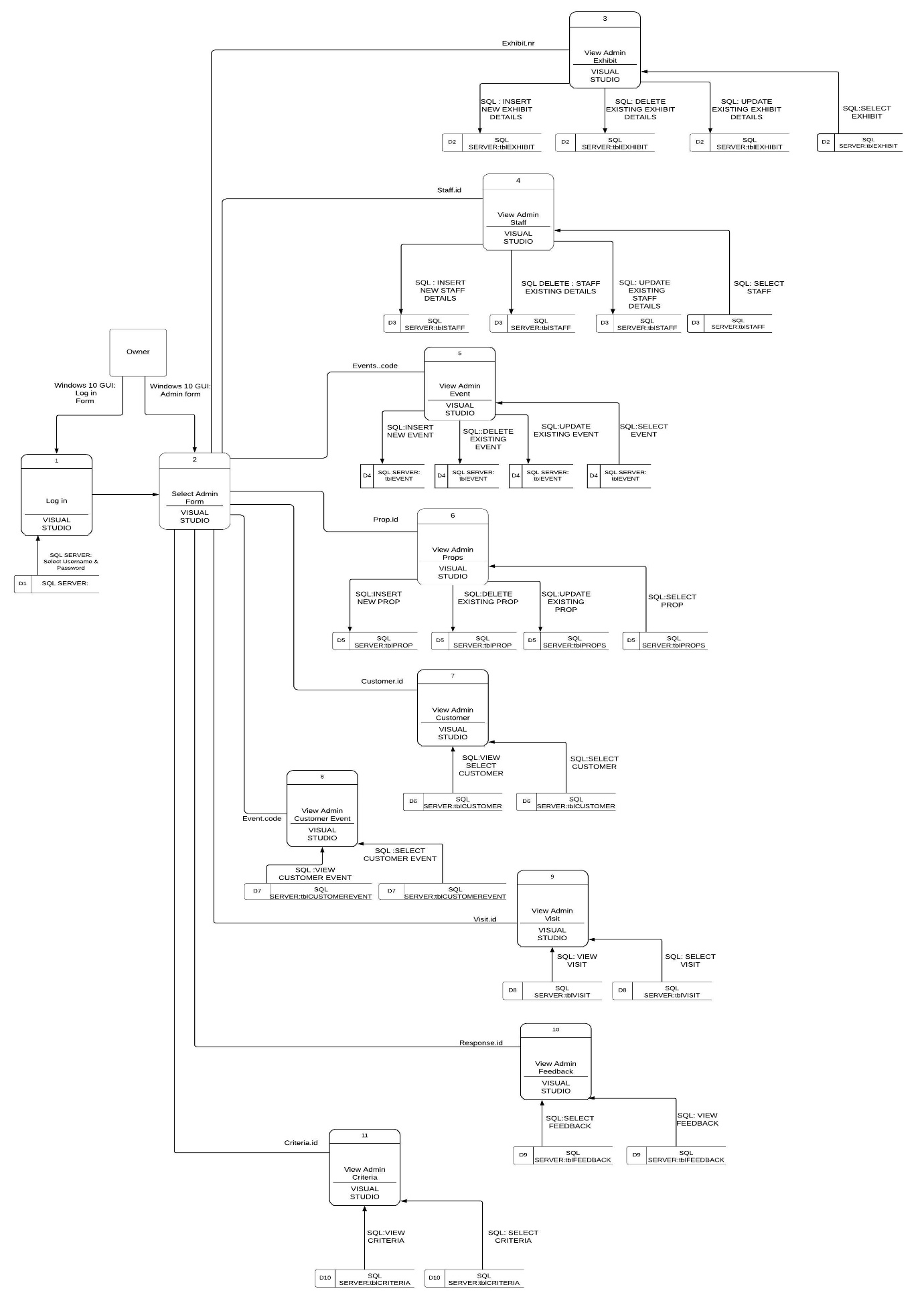


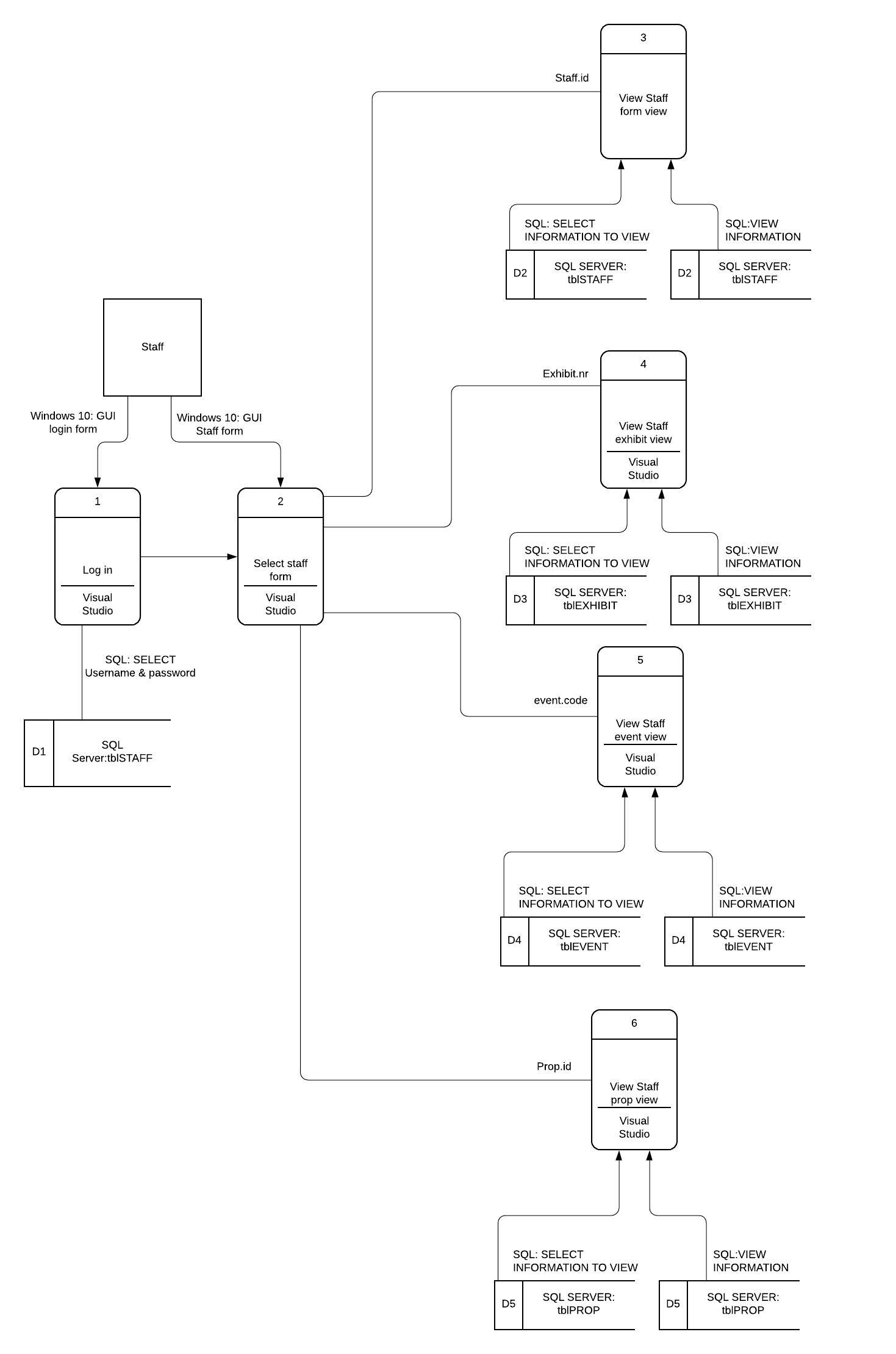


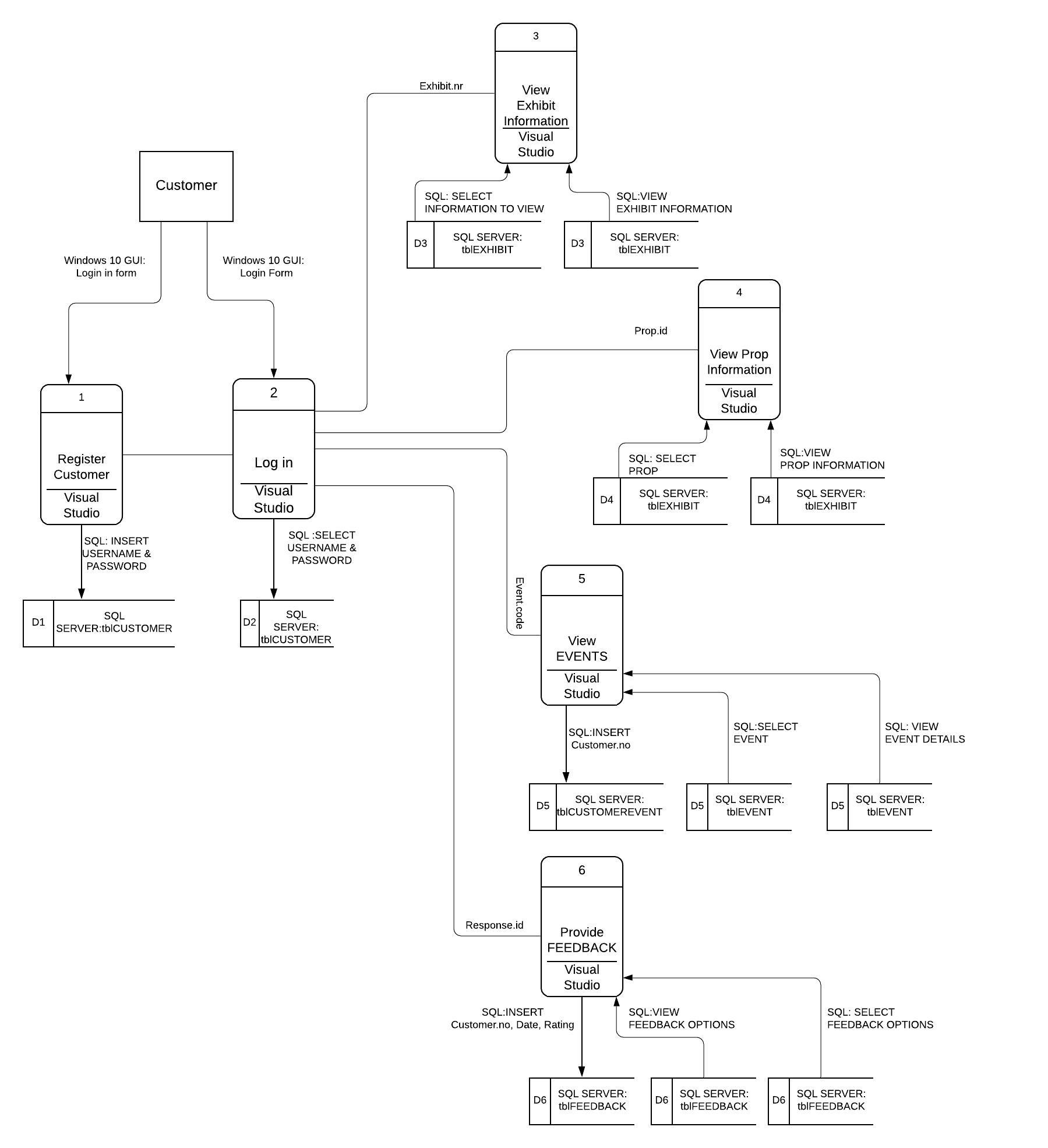


**Physical Data Model**

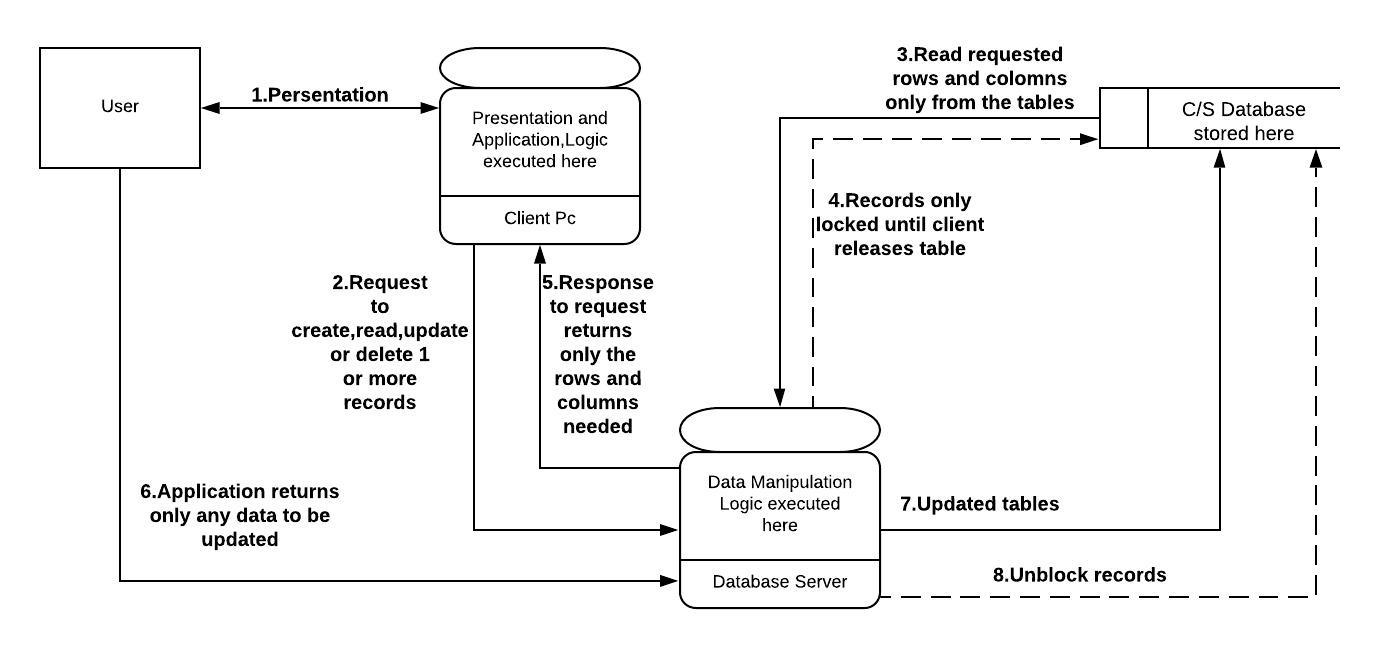


**Physical process model**





**Network Architecture DFD**



**Prototypes of input, output and user interface (Hard copy)**