***OLSF*** is an online security firm providing real time online 24 hour monitoring of premises. They offer secuity to all types of clients from Private Dwellings to Small Buinesses right through to large multinational corporations. Below is the ERD for OLSF.

# ERD for ***OLSF (O***n ***L***ine ***S***ecurity ***F***irm)



1. **Clients are characterised and charged under various types.**
2. **Premises are guarded by several key holders.**
3. **A Client can own several premises.**
4. **Key holders guard several premises.**
5. **Each premises is split into several security zones.**
6. **Each premises will have details of the charges for alarm call outs.**
7. **Each security breach in a zone will trigger an online alarm.**
8. **Each alarm will be detailed in the Premises Account Details table.**

**Exam Rules**

Use the calry\calry server to complete this exam. Use the database with your id followed by SQLProject as the database for this exam. E.g. “s000001SQLproject”.

**Breakdown of marks per question 🡪 IPO 30%, SQL 70%.**

**Submission Dates**

The IPOs must be submitted (email the spreadsheet to [harte.padraig@itsligo.ie](mailto:harte.padraig@itsligo.ie)) by Sunday 11th December @17:00.

The queries which created the stored procedures must be saved to your H: drive. Email those queries to [harte.padraig@itsligo.ie](mailto:harte.padraig@itsligo.ie) by December 15th @14:00.

**Exam Continued over page**

1. ~~Create a diagram in your database to resemble the diagram on page 1 of this exam. Note this will require you creating the PKs and FKs in the tables.~~

**(4 marks)**

1. ~~Create a stored procedure~~ **~~(call it SQL2)~~** ~~which will retrieve the name of the clients who have a client type id of “~~***~~X~~***~~”.~~ **~~Note~~** ~~“~~***~~X~~***~~” here is a variable which will be inputted by the user who executes this stored procedure.~~

**(5 marks)**

1. ~~Create a stored procedure (call it~~ **~~SQL3~~**~~) which will retrieve the number of clients in the client table.~~

**(5 marks)**

1. ~~Create a stored procedure~~ **~~(call it SQL4)~~** ~~which will retrieve the Premises id, and the Premises City id with the largest Account Total. Note if there are a number of rows in the Premises table whose Account Total amount is equal to the largest Account Total then all those rows should be returned.~~

**(5 marks)**

1. Create 2 stored procedures
2. ~~Create a sproc~~ **~~(call it SQL5a)~~** ~~which will retrieve the Premises id, and the Premises City of all premises who have an alarm charge raised against them in the Premises Accounts Details TBL. Note this query will return the duplicate rows of data for any premises who has more than one alarm charge recorded in the Premises Accounts Details TBL. Write your SQL in such a way as to eliminate these duplicate rows.~~
3. ~~Create a sproc~~ **~~(call it SQL5b)~~** ~~which will retrieve the Premises id, and the Premises City of all premises who do not have an alarm charge raised against them in the Premises Accounts Details TBL. .~~

**(8 marks)**

1. ~~Create a stored procedure~~ **~~(call it SQL6)~~** ~~which will update the Client Password of a particular client in the ClientTBL.~~ **~~Note~~**
   1. ~~The new password and the client’s id must both be passed into the stored procedure using external variables.~~
   2. ~~This procedure must check to see that the update worked~~

**(8 marks)**

1. ~~Create a stored procedure~~ **~~(call it SQL7)~~** ~~which will retrieve the Client ID and Client Name and the number of premises that each client has in the PremisesTBL.~~

**(10 marks)**

1. ~~Create a stored procedure~~ **~~(call it SQL8)~~** ~~which will retrieve the Premises id, and the Premises City of any premises who has above the average NoOfAlarms.~~

**(10 marks)**

1. ~~Create a stored procedure~~ **~~(call it SQL9)~~** ~~which will retrieve the keyholder id, and the keyholder name and the number of premises they have keys for of any keyholder who has more that~~ **~~X~~** ~~number premises -~~ **~~Note~~** ~~“~~***~~X~~***~~” here is a variable which will be inputted by the user who executes this stored procedure.~~

**(10 marks)**

**Examination continued over page**

1. ~~Create a stored procedure~~ **~~(call it SQL10)~~** ~~which will retrieve the client id, and the client name of any client whose client type description is High Level’ and who do not have a Premises in the city of ‘Sligo’.~~ ***~~Hint use except to resolve this.~~***

**(15 marks)**

1. ~~Create a stored procedure~~ **~~(call it SQL11)~~** ~~which will retrieve the client id, and the client name of any client whose NoOfKeyHolders value is greater than the average NoOfKeyHolders value for all the clients who are of a particular client type.~~ ***~~Hint use a co-related sub query on ClientyTypeID in the ClientTBL.~~***

**(17 marks)**

1. ~~Run a backup of your database.~~

**(3 marks)**

**End of Examination**