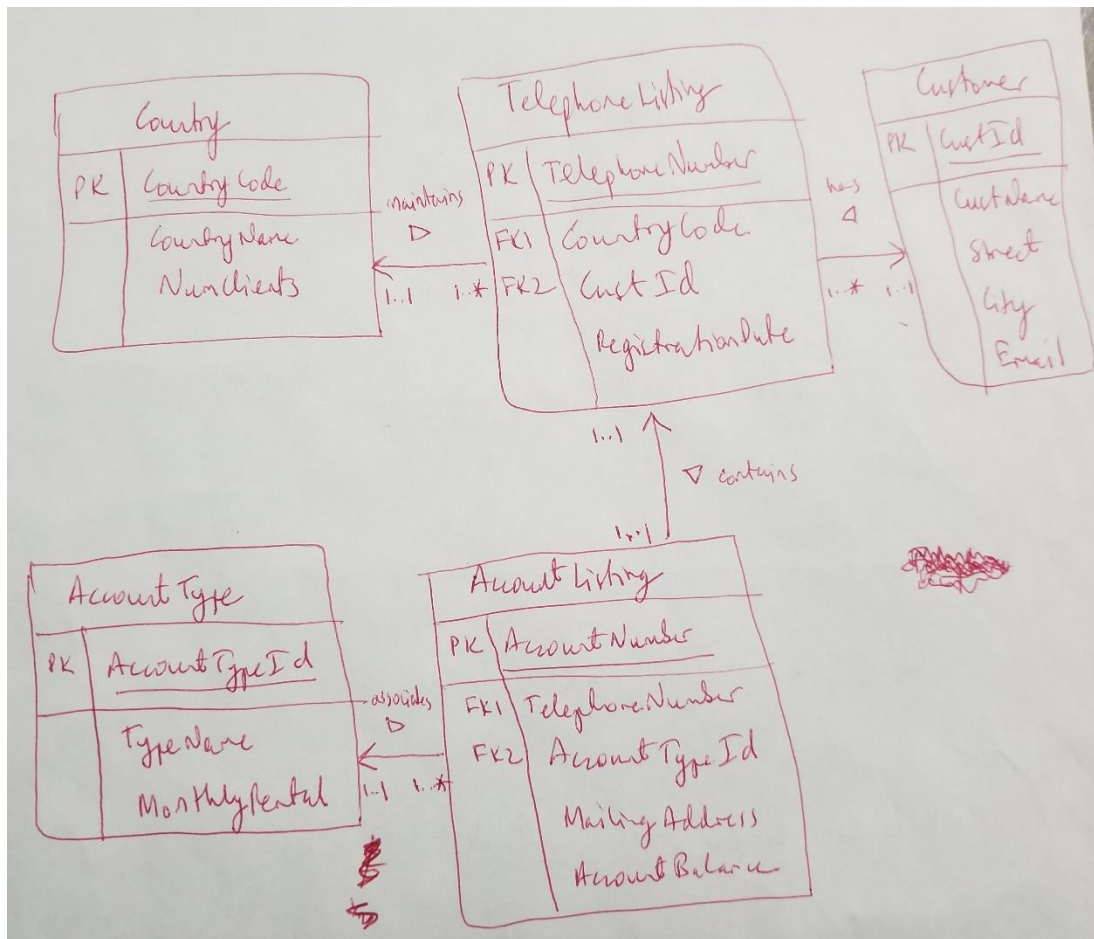1(a)

7 marks were given for the tables, PK, FK, attribute naming etc… The other 8 were given to cardinalities (4 marks) and verbs/arrows (4 marks).

(b) To obtain the marks the student has to identify the one-to-one mapping and explain. Marks were given as follows:

1..1 - 1..1 (5 marks)

The minimum cardinalities were given 2 marks and the maximum cardinalities 3 marks. The question clearly states that each accountType can be associated with one telephone number. This is very important in the eventual design and thus the 3 marks for this part.

COMP2605 : Assignment 2 solutions

2(a) To obtain the marks students had to explain how the Linear Search Data Access Method works and give as example using the SQL query.

2(b) custId

2(c) To obtain the four marks students must:

   i)   Indicate that databases use unordered data on disk
   ii)   Use table size (small vs large) as an argument
   iii) Mention the cost (advantages/disadvantages) of indexing
   iv)   Use the above three points in one or more scenarios indicating how the value 'CUS125' is found. One scenario is if the record was the first in the unordered list etc…

3(a) Partial dependencies:

   i)   TelephoneNumber -> CustId
   ii)   TelephoneNumber -> CountryCode
   iii) TelephoneNumber -> CountryName
   iv)   TelephoneNumber-> Mailing Address
   v)   AccountTypeId -> MonthlyRental

Note: students with 4 or 5 attributes obtained 5 marks

3(b) 2NF

   Telephone(TelephoneNumber, CustId, CountryCode, CountryName, MailingAddress)

   Register(TelephoneNumber, AccountTypeId)

   Account(AccountTypeId, MonthlyRental) (the top underline should be solid and the one under this dotted)

3(c) Transitive Dependencies

   i)   TelephoneNumber -> CustId -> MailingAddress
   ii)   TelephoneNumber -> CountryCode -> CountryName

3(d) 3NF

   Telephone(TelephoneNumber, CustId)

   Customer(CustId, CountryCode) (the top underline should be solid and the one under this dotted)

   Address(CountryCode, CountryName, MailingAddress)

   The Account and Register schemas remain the same from 3(b)

Removing the two transitive dependencies was given one mark each. Producing meaningful tables, that is, those with related attributes was given 2 marks.