***IT 271 Final Review***

*Content of the Exam*: Chapters 1 – 5, 6-1

*Types of Question*

* Multiple choice
* Matching
* Free response
* Short code writing section : open note

*Topics and questions*

* How do we sync a datatable/dataset to a database?
  + DataAdapter
* How is a database different than a spreadsheet?
  + How they store data
* SELECT, FROM, and WHERE are our standard SQL clauses. What additional SQL clauses can we use to access our databases with? [ GROUP BY, ORDER BY, JOIN, aggregate, LIMIT ]
* Should these primary key fields allow nulls? Why or why not
  + Primary key does not allow null because it has to have a value as a ID
* Should these primary key fields automatically increment? Why or why not
  + Yes because when a new entry is added it will need the primary key to be able to identify what record.
* What are databindings? What are the different applications of databindings?
  + Databinding connect data from a table to a control
* What are primary and foreign keys?
  + Primary keys is the id of the record
  + Foreign key connect to another primary key from another table
* What do ERD diagrams help us with? What is their purpose?
* What does each of these objects do?
* What does it mean for a database to be “in a normal form”?
  + Follows a set of rules to stream line the database
* What is a connection string? What variables and parameters are included in it?
  + A connection string is the string need to connect to the database through the program.
* What is a database join? Why do we do them?
  + Database join is when you join a multiple databases in a query for a search to get all the related information
* What is a database schema?
  + Is a blue print of the database
* What is the advantage to using a datagridview control? When is it not appropriate to use? (aka why do we go about connecting database information to multiple controls? )
* What is the difference between datasets, data tables, and databases?
* What is the idea of using states in a program?
  + Using state create different forms of the application for different purposes
* What objects are required to execute a SQL statement on the actual database?
* What objects do we need to create when connecting a C# Forms project to an SQL database?
* What symbols are used in ERD diagrams?
  + Diamonds, rectangles, lines
* What types of database joins are there?
  + Inner Join, Right Outer Join, Left Outer Join.
* What types of relationships can exist between tables in a relational database?
* When and why does a databases form matter?
* When building a database, why is it important to include a unique field as the primary key?
  + To be able to identify what record
* When we connect a database to a project in code, do we work directly from the database?
* When working with Data Tables, we can update and add rows to the data table. In code and plain language, what do we need to do in order to sync our in-code, up-to-date data table with the SQL original database?
  + Update/refresh the table
* Why is disposing of a database connection object important?
  + Clears memory
* Be familiar with these controls and their properties:
  + Form
  + Button
  + Label
  + TextBox
  + Checkbox
  + RadioButton
  + GroupBox
  + Panel
  + PitcureBox
  + MessageBox
* Be able to build a Windows Form from scratch using appropriate naming conventions and design considerations
* Be able to write simple SQL statements
* Be able to build simple SQL statements based on control input from
* Be able to connect your C# project to a database then use the connection string
* Be able to connect the database connection objects to C# Form fields and update them accordingly