Guidelines for Creating a database

Installing process is pretty straightforward.

1. Download all the package together either 2014 or 2012 SQL Server (any edition is fine, not BI for this lab now, you can install it later)
   Make sure to install every components in the package - ODBC, Server, Clients, gateway.....
   Make sure that you install a server with a matching version of Visual Studio.

2. When installing a server, make sure to choose to
   1) Follow Window Authentication to login and
   2) the SQL server started automatically when your hosting system starts.

3. Check Control panel -> Computer management -> Service to see your SQL server is up and running, if not, start it manually there.

If you don’t see SQL Server there in the service list, it means that you didn’t install the server in your system. Remove all by uninstalling program (NOT by you manually), then reinstall ALL the components in the package that the DreamSpark site provides.

Once everything is installed, then
4. in Program -> 2012 or 2014 MS SQL Server, start MS SQL Server Management Studio which is an interface for both the sql server running on your host system and a client where you can type and execute SQL queries.

If you need anything else, check MS site (or google it, you will find the site) for any info to install, everything is there.

- It will work only when you are a part of an Administration group of the host system. If you install the server in your system and you choose the option that a server get your OS user id and password, by default, your SQL server put your user id into the Admin group. If you are not, try to add yourself into Admin group in the database server in the host system in Control panel -> (Computer) System Management -> User management.

For the Installation step for 2014 SQL Server step by step: You can find any related info here including Pre-requirement and all the components to install together.


https://www.youtube.com/watch?v=p3xcoLVNFho

For installation step for SQL Management Studio with 2014 SQL Server (Note that this is for an Express version), there is a video guide here.

https://www.youtube.com/watch?v=eGFdh_D0lYs
One issue could be coming from installing SQL Server in Window8. Check the site for info. Depending on which one(Windows 8 or Window 8.1) you are setting up a SQL Server on

http://support.microsoft.com/kb/2681562

My suggestion for this issue is choose Window 7 to install to stay away from this kind of issue until they announce a complete solution for the issue. If that is not an option for you, then it is probably worth trying their most recent Service Pack for window 8 provided by their site to see it resolves the issue.

Note that apart from the issue with Window 8, even on window 7, you have to match a version of Visual Studio and a version of SQL Server to install. Either 2012 VS with 2012 SQL Server or 2013 VS with 2014 server. They added a lot of new features and changed some design in each 2012 and 2014, so some of them are not compatible to install together. Any SP (Patch work) wouldn’t resolve this issue.

Your another issue in using SQL Server to create a database: Without knowing what you did in the process of creating a database, I can guess two causes:
1. If your user id is not part of Administrators of your system that is hosting your SQL server,
   You have to add your user id into the admin group of your system in Control Panel ->Administration -> Computer management -> User management
   If you are not the one install the SQL Server, ask the person who did in the Help desk office.

2. If the issue is not coming from Access Control, then it is coming from syntax of MS SQL.

   In MS TSQL, Return key is not Submitting and get the query Executed. Query is executed by issuing GO in the next line or hit Execute button.

   You have to change your current database to Company with Use Company; GO after creating the database in the master level.
   Or setting in SQL management studio overwrites Use command in your query script, so set your current database to Company once you create it in the drop down list on the top corner of the Left side of Management Studio. By default, it is set to master when connect to the server first.

   At master level, create a database first, which means you have to Execute it first (either by hitting Execute button or type Go in the next line in your script (script means the query editor where you can write multiple queries then execute them at once) then in a separate query, issue Use database-name you just create. Make sure you got MSG from your server that the database is created, then you can submit Use database command.

   See the attached scripts help. Just to see how to use USE, GO, Create Database. Don’t worry about the rest of the long list of option and alter stats there.

   One more tip. If you have any installation issues, which are usually coming from version mismatch between the components, no point to try to fix. Most of time, not
working. Remove all then freshly reinstall them. Note that you have to let the
uninstalling program (by MS) or Remove Program by your system do all the
uninstalling process. Never do it manually.

Creating database scheme

Make sure you create all the tables using Create Table statements with
all the columns and each PK declared first then add FK using Alter
table. Do not mix the FK constraint names with PK, FK column names. To avoid
confusion, do not use Constraint names in your DDL, just use Column names of PK, FK
with the correct Keywords (clauses) to declare FK. Note that the
sequence to create database objects matters here. You should not use any database
object (for example, a table name) that you have not created in the database yet inside
another table’s DDL.

Don't mix the syntax specifying Constraints Name with the syntax without specifying
Constraint Name. Use the very specific syntax either with specifying constraint name or
without specifying constraint name, NOT a mixture of both syntax, it never going to work.
Either one of the following two would be correct.

Alter Table Employee
Add Foreign Key (Super_ssn) References Employee (Ssn);

OR

ALTER TABLE EMPLOYEE
ADD CONSTRAINT FKCONSTRAINT1
FOREIGN KEY (Super_ssn) REFERENCES EMPLOYEE(Ssn);

INSERT INTO EMPLOYEE VALUES('John', 'B', 'Smith', '123456789', '9-Jan-55', '731 Fondren,
Houston, TX', 'M', 30000, '987654321', 5);

INSERT INTO EMPLOYEE VALUES('James', 'E', 'Borg', '888665555', '10-Nov-27', '450
Stone, Houston, TX', 'M', 55000, NULL, 1);

...  
Alter Table Employee

Add Foreign Key (Super_ssn) References Employee (Ssn);

Select * From Employee;

insert into DEPARTMENT values ('Headquarters', 1, 888665555, '19-Jun-71');

INSERT INTO DEPENDENT VALUES (123456789, 'Alice', 'F', '31-Dec-78', 'Daughter');

INSERT INTO PROJECT VALUES ('ProductX', 1, 'Bellaire', 5);

INSERT INTO WORKS_ON VALUES (123456789, 1, 32.5);
... 

ALTER TABLE employee ADD
    foreign key (superssn) references employee(ssn),
    foreign key (dno) references department(dnumber);

ALTER TABLE department ADD Constraint FKMgrSsnPKSsn
    foreign key (mgrssn) references employee(ssn)

...

Note that the sequence of creating each database object and adding FK constraints matters here. So, one possible sequence to start could be Create all the Tables with PK first without FK constraints added then Alter tables to add FKs, or some later. Then Populate tables...

Depends on the sequence you create them, sometimes you might want to populate one table for example, Employee or Department table first to seed a database with PK before adding a specific FK constraint if the server complaints.

Msg 547, Level 16, State 0, Line 2
The INSERT statement conflicted with the FOREIGN KEY constraint "FK.Employee_Dno". The conflict occurred in database "COMPANY", table "dbo.Department", column 'Dnumber'.

The statement has been terminated.

The error message is usually thrown out when you tried to insert invalid data into DNO column (which is FK of Employee table). Invalid data for FK Dno could be:
1. You tried to insert Non existing value of its corresponding PK column Dnumber of Department. So you tried to insert a value other than 1, 4, 5, 7 or Null in this Company example.
2. You tried to insert space " " instead of Null.
3. This error is also thrown out when you tried to insert into Dno of Employee table first even before you populate Department table, so PK Dnumber column of Department table has no value, yet you tried to insert a value into FK Dno of Employee table. As a result whatever you tried to insert into FK column is a non existing PK value because your PK Dnumber column is empty. Populate Department table first before inserting tuple Employee table.

Visualize a database ER diagram:

It is in the Object Explorer, Click on your Company database, then it will expand Database Diagram and all the tables and columns you
created under the database. Click database diagram -> ER diagram, then you will see the diagram in the window.

It may be found with Right click on Database Diagram under your Company database in Object Explorer in the left pane of SQL Server Management Studio.

If you want to know more on this, check here.