All tables

- 1. Customers
- 2. Departments
- 3. Employees
- 4. OrderDetails
- 5. Orders
- 6. ProductSuppliers

- 7. ProductTypes
- 8. Products
- 9. Suppliers
- 10. UserTitles
- 11. UserTypes
- 12. Users

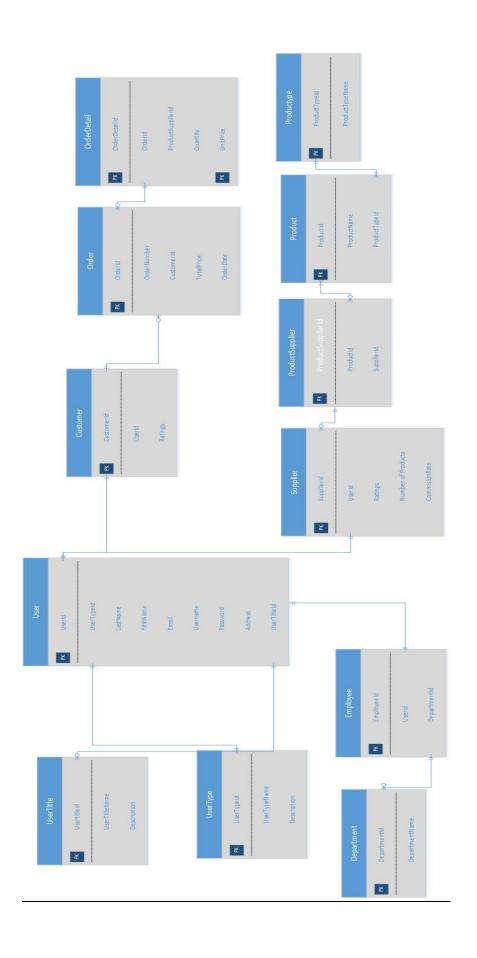
New tables were added

- 1. UserTitles As mention in the assignment 3 with use of stored procedures we need to create tables, add columns to existing tables delete columns in existing table and delete the table. So I decide to create "UserTitles" tables and relevant stored procedures are implemented in the database.
- 2. Departments The employees who work in the system can be categorized in to departments. So to keep those data I created a new table called "Departments".

Changes took placed in table schemas

- "SupplierProduct" to "ProductSupplier" In assignment 1 I mentioned a table as "SupplierProduct" but later I renamed as "ProductSupplier". Reason for the renaming is rather than using "SupplierProduct" "ProductSupplier" makes more meaning to the table. Only 'Description' column is removed.
- 2. Order details In this table there are two columns renamed. As a result of above table name changes "SupplierProductId" changed to "ProductSupplierId" and "Price" column changed to "UnitPrice". In the Order table I am going to keep total price of the order so keeping unit price make more reasonable to calculate the total price in future. Or else it would help administrators to look hoe the price is floating.
- 3. Orders Added a new column "OrderNumber" that reflects human readable integer. Also removed the "NumberofProducts" because we can calculate with use of "OrderDetails" table and added "OrderDate" to get an idea which dates processed which order.
- 4. UserTypes Added a "Description" column to this table to get a better idea about the content of the table.
- 5. Employee Renamed the "Department" column to keep the "DepartmentId". Because I created a new table called "Department" and "Department" table keeps the name of the departments.

After change the database the relevant ER diagram is as follows.



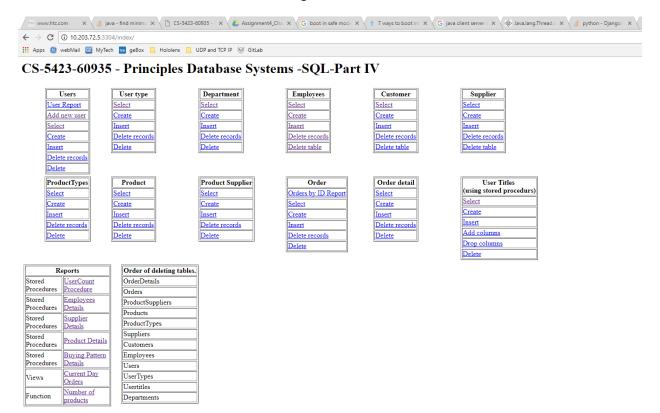
The use of Django framework to develop the propose database.

Proposed enterprise system contains 12 tables. For categorization purpose I created 5 different operations for each table.

- 1. Select Select all the records from the table. The query is inside the Django model.
- 2. Create Table creation query and also inside the Django model.
- 3. Insert Few records insert to the table and those insert queried are inside the Django model.
- 4. Delete Records When run this method it deletes all the data in the table. Query is included in Django model class.
- 5. Delete Drop the entire table.

But in one case the "UserTitles" table creation was used stored procedures and when Django methods calls the relevant stored procedure fires and do the relevant operation.

Screen shot is attached for better understanding.



For each table in Django, I created separate apps and the formats of the names of those apps are "Tablename" site. As an example for User table the site name is "usersite" and usertypes table its "usertypessites"

In the "User" table I create a Django form to enter the user data in to the table.

To view the report in html format I choose querying type as stored procedures, views and functions. Following are the types of report and the queries I used to execute the data.

- a. Reports
 - i. Daily sales report
 - ii. Supplier report
 - iii. Product report
 - iv. Buying pattern report
- b. Queries
 - i. Sales report query
 - ii. Daily order details
 - iii. Product report query
 - iv. Supplier report
 - v. Buying pattern query

Also, there are 2 dynamic reports that is

- 1. User report (Select a user type Employee, supplier or customer) to get the list of users.
- 2. Orders by Order number (When user supplied certain order number the report will give orders and the count of the products that is great than the supplied order number.)

Coding

I took files in the usersite App for describing the coding.

```
    apps.py
    from __future__ import unicode_literals
    from django.apps import AppConfig
    # Crating the App configuration
    class UsersiteConfig(AppConfig):
    name = 'usersite'
```

2. url.py

from django.conf.urls import include, url

```
from . import views
# The redirection views url
urlpatterns = [
```

url(r'^createtable/', views.createTable, name='createtable'),

```
url(r'^inserttable/', views.insertTable, name='inserttable'),
          url(r'^selecttable/', views.selectTable, name='selecttable'),
          url(r'^deleterecords/', views.deleterecords, name='deleterecords'),
          url(r'^deletetable/', views.deleteTable, name='deletetable'),
          url(r'^new/', views.get_name, name='get_name'),
          url(r'^setnew/', views.setnew, name='setnew'),
          url(r'^thanks/', views.thanks, name='thanks'),
    3. forms.py
from django import forms
from usersite import models
# The form properties that required to pass for the html file
class NameForm(forms.Form):
  lastname = forms.CharField(label='Last name', max_length=100)
  firstname = forms.CharField(label='First name', max length=100)
  email = forms.CharField(label='Email', max length=100)
  username = forms.CharField(label='Username', max length=100)
  password = forms.CharField(label='Password', max length=100)
  address = forms.CharField(label='Address', max_length=100)
  usertype = forms.CharField(label='User type')
   4. model.py
        from __future__ import unicode_literals
        from django.db import models,connection
        from django.db import IntegrityError
        from django.shortcuts import render_to_response
        # CREATE models
        tablename = "Users"
        url = "../../user/selecttable/"
        errormsg = None
        # Crating the table
        def create_table():
          try:
            with connection.cursor() as cursor:
```

```
cursor.execute(
        "CREATE TABLE Users ( UserId int NOT NULL AUTO INCREMENT, LastName
varchar(255) NOT NULL, FirstName varchar(255), Email varchar(255),"
        "Username varchar(255) NOT NULL, Password varchar(255) NOT NULL, Address
varchar(255), UserTypeId int NOT NULL, PRIMARY KEY (UserId), FOREIGN KEY (UserTypeId)
REFERENCES UserTypes(UserTypeId));")
      cursor.close()
    return tablename + 'table created successfully'
  except Exception as inst:
    return inst
# Insert some records into the table
definsert table():
  try:
    with connection.cursor() as cursor:
      cursor.execute(
        "INSERT INTO Users (LastName, FirstName, Email, Username, Password, Address,
UserTypeId) VALUES"
         ('Maryann', 'Justa', 'Justa@gmail.com', 'Justa', '123', '3483 N. Hefner St. #61 Toledo FL"
', '2'),"
        "('Maire', 'Francesco', 'Francesco@gmail.com', 'Francesco', '123', '2806 W. Pine Blvd.
Harrisburg AL', '1'),"
        "('Marva', 'Kizzie', 'Kizzie@gmail.com', 'Kizzie', '321', '1850 E. Rockwell Way #96 Tulsa
OK', '3'),"
        "('Lily', 'Susan', 'Susan@gmail.com', 'Susan', '123', '13222 W. Regina Way #33
Providence SC', '2'),"
        "('Shawnda', 'Annis', 'Annis@gmail.com', 'Annis', '123', '5931 N. Pine Blvd. #72 Las
Vegas AL', '1'),"
        "('Robbie', 'Rigoberto', 'Rigoberto@gmail.com', 'Rigoberto', '123', '13405 N. Regina Pl.
Oklahoma City CT', '3'),"
        "(' Elda', ' Roxanna', ' Roxanna@gmail.com', ' Roxanna', '123', ' 7013 W. Rockwell Blvd.
#38 Little Rock MD', '3');")
      cursor.close()
    return 'data inserted to ' + tablename + ' sucessfully'
  except Exception as inst:
    return inst
# When the form data is insertted this method triggered.
def insert tablewithparam(lastname, firstname, email, username, password, address,
usertypeid):
```

```
try:
      with connection.cursor() as cursor:
        cursor.execute(
           "INSERT INTO Users (LastName, FirstName, Email, Username, Password, Address,
UserTypeId) VALUES"
           "("" + lastname + "',"" + firstname + "',"" + email + "',"" + username + "',"" + password +
"','" + address + "','" + usertypeid + "');")
        cursor.close()
      return 'data inserted to ' + tablename + ' sucessfully'
    except Exception as inst:
      return inst
# Get data from table
def select_table():
 try:
    global errormsg
    errormsg = None
    with connection.cursor() as cursor:
      cursor.execute("Select * FROM Users")
      rows = cursor.fetchall()
      cursor.close()
      if len(rows) == 0:
        errormsg = "No records found"
    return rows
  except Exception as inst:
    errormsg = inst
    return None
# Delete the records forn the table
def delete_records_table():
 try:
    with connection.cursor() as cursor:
      cursor.execute("DELETE FROM Users")
      cursor.close()
      return "Records deleted"
  except Exception as inst:
    return inst
```

```
# Drop the table
   def drop table():
     try:
        with connection.cursor() as cursor:
          cursor.execute("drop table Users;")
          cursor.close()
        return tablename + ' table deleted successfully'
      except Exception as inst:
        return inst
5. views.py
   from django.http import HttpResponse
   from usersite import models
   from django.shortcuts import render
   from django.http import HttpResponseRedirect
   from django.template import loader
   from .forms import NameForm
   # Creating the table
   def createTable(request):
     message = models.create_table()
     template = loader.get template('template.html')
     context = {'table': models.tablename, 'url': models.url, 'message': message}
      return HttpResponse(template.render(context, request))
   # Insert some records to the table.
   def insertTable(request):
     message = models.insert_table()
     template = loader.get template('template.html')
     context = {'table': models.tablename, 'url': models.url, 'message': message}
     return HttpResponse(template.render(context, request))
   # Display the records in table.
   def selectTable(request):
     rows list = models.select table()
     template = loader.get_template('getData.html')
     titles = ["UserId", "Firstname", "Lastname", "Email", "Username", "Password", "Address",
    "User typeid", "User title id"]
```

```
context = {'type': models.tablename, 'rows_list': rows_list, 'message': models.errormsg ,
'titles': titles}
  return HttpResponse(template.render(context, request))
# Delete the records in the table
def deleterecords(request):
  message = models.delete_records_table()
  template = loader.get template('template.html')
  context = {'table': models.tablename, 'url': models.url, 'message': message}
  return HttpResponse(template.render(context, request))
# Delete the table
def deleteTable(request):
  message = models.drop_table()
  template = loader.get template('template.html')
  context = {'table': models.tablename, 'url': models.url, 'message': message}
  return HttpResponse(template.render(context, request))
# After sucessfully insert the data in to the table this method triggered.
def thanks(request):
  template = loader.get template('thanks.html')
  context = {}
  return HttpResponse(template.render(context, request))
# When user request for insert the data this method trigged
def get name(request):
  form = NameForm()
  return render(request, 'new.html', {'form': form})
# When user submit the form with data this methos triggered and if there is any thing wrong
# it redirect to error page
def setnew(request):
  # if this is a POST request we need to process the form data
 if request.method == 'POST':
    # create a form instance and populate it with data from the request:
    form = NameForm(request.POST)
    # check whether it's valid:
    if form.is_valid():
      lastname = form.cleaned_data['lastname']
      firstname = form.cleaned_data['firstname']
      email = form.cleaned_data['email']
```

```
username = form.cleaned data['username']
          password = form.cleaned data['password']
          address = form.cleaned data['address']
          usertype = form.cleaned_data['usertype']
          #usertitle = form.cleaned_data['usertitle']
          message =
   models.insert_tablewithparam(lastname,firstname,email,username,password,address,usertype)
          # redirect to a new URL:
          return HttpResponseRedirect('/user/thanks/')
     # if a GET (or any other method) we'll create a blank form
      else:
        form = NameForm()
     return render(request, 'error.html', {'form': form})
6. model.py used to view stored procedures, view and functions
   from future import unicode literals
   from django.db import models,connection
   from django.db import IntegrityError
   from django.shortcuts import render_to_response
   # CREATE models
   tablename = "Multiple tables"
   url = ""
   errormsg = None
   # Get data from user count stored procedure
   def call UserCount():
     try:
       global errormsg
       errormsg = None
       with connection.cursor() as cursor:
          cursor.execute("call userCount;")
          rows = cursor.fetchall()
          cursor.close()
          if len(rows) == 0:
            errormsg = "No records found"
```

```
except Exception as inst:
    errormsg = inst
    return None
# returns the employeelist
def call_EmployeeDetails():
  try:
    global errormsg
    errormsg = None
    with connection.cursor() as cursor:
      cursor.execute("call getEmployeesDetailsProc;")
      rows = cursor.fetchall()
      cursor.close()
      if len(rows) == 0:
        errormsg = "No records found"
    return rows
  except Exception as inst:
    errormsg = inst
    return None
# Returns the supplier list
def call_SupplierDetails():
 try:
    global errormsg
    errormsg = None
    with connection.cursor() as cursor:
      cursor.execute("call SupplierList;")
      rows = cursor.fetchall()
      cursor.close()
      if len(rows) == 0:
        errormsg = "No records found"
    return rows
  except Exception as inst:
    errormsg = inst
```

return rows

return None

```
# Returns the Buying patterns
def call_BuyingPattern():
 try:
    global errormsg
    errormsg = None
    with connection.cursor() as cursor:
      cursor.execute("call BuyingPattern;")
      rows = cursor.fetchall()
      cursor.close()
      if len(rows) == 0:
        errormsg = "No records found"
    return rows
  except Exception as inst:
    errormsg = inst
    return None
# Returns the product list
def call ProductDetails():
 try:
    global errormsg
    errormsg = None
    with connection.cursor() as cursor:
      cursor.execute("call ProductList;")
      rows = cursor.fetchall()
      cursor.close()
      if len(rows) == 0:
        errormsg = "No records found"
    return rows
  except Exception as inst:
    errormsg = inst
    return None
# get current day order details
def get_CurrentDayOrder():
 try:
    global errormsg
    errormsg = None
    with connection.cursor() as cursor:
```

```
cursor.execute("select * FROM CurrentDayOrders;")
      rows = cursor.fetchall()
      cursor.close()
      if len(rows) == 0:
        errormsg = "No records found"
    return rows
 except Exception as inst:
    errormsg = inst
    return None
def get_NumberofProducts():
 try:
   global errormsg
    errormsg = None
   with connection.cursor() as cursor:
      cursor.execute(" select getNumberOfProducts(3);")
      rows = cursor.fetchall()
      cursor.close()
      if len(rows) == 0:
        errormsg = "No records found"
    return rows
 except Exception as inst:
    errormsg = inst
   return None
```

All the Apps developed in the Django site is in the above format.

7. Template folder.

a. getData.html – All the list related data showing using this html template.

```
<title> '{{ type }}' table list </title>
<h1> '{{ type }}' table list</h1>
```

```
{% for title in titles %}
          {{ title }} 
       {% endfor %}
     {% for user in rows list %}
     {% if user.0 %}
        {{ user.0 }}  {% endif %}
       {% if user.1 %}
        {{ user.1 }}  {% endif %}
       {% if user.2 %}
        {{ user.2 }}  {% endif %}
       {% if user.3 %}
        {{ user.3 }}  {% endif %}
       {% if user.4 %}
        {{ user.4}}  {% endif %}
       {% if user.5 %}
        {{ user.5 }}  {% endif %}
       {% if user.6 %}
        {{ user.6 }}  {% endif %}
       {% if user.7 %}
        {{ user.7 }}  {% endif %}
       {% if user.8 %}
        {{ user.8 }}  {% endif %}
     {% endfor %}
   <div>
     {% if message %} {{ message }} {% endif %}
   </div>
   <br />
   <br />
   <a href="../../index">Index</a>
b. new.html – When user adding this form is used to display the controls
   <h1>Fill the user details</h1>
```

```
<form action="../setnew/" method="post" >
 {% csrf token %}
 <label for="lastname">Last name: </label> 
 <input id="lastname" type="text" name="lastname" value="{{ current name }}">
 <label for="firstname">First name: </label>  
 <input id="firstname" type="text" name="firstname" value="{{ current name }}">
  <label for="email">Email: </label>  
 <input id="email" type="text" name="email" value="{{ current name }}">
 <label for="username">Username: </label>  
 <input id="username" type="text" name="username" value="{{ current name }}">
 <label for="password">Password: </label>  
 <input id="password" type="text" name="password" value="{{ current name }}">
 <label for="address">Address: </label>  
 <input id="address" type="text" name="address" value="{{ current name }}">
 <label for="usertype">User type </label>  
 <select name="usertype">
  <option value="1">Employee</option>
  <option value="2">Supplier</option>
  <option value="3">Customer</option>
 </select>
<label for="usertitle">User Title </label>  
  <select name="usertitle">
<option value="1">Mr</option>
<option value="2">Mrs</option>
<option value="3">Ms</option>
</select>
<input type="submit" value="OK">
   </form>
<div><a href="../../index">Index</a>
</div>
```

c. added.html – After adding the data successfully this html appears. <form>

```
<label>Thanks </label>
    </form>
d. error.html – When something went wrong it appears.
    <form>
      <label>Something went wrong </label>
    </form>
    <div><a href="../../index">Index</a>
    </div>
e. index.html – contains all the links to the apps.
    <title> CS-5423-60935 - Principles Database Systems -SQL-Part IV</title>
    <style type="text/css">
      .div-table {
        display: table;
        width: auto;
        border: 0px solid #666666;
        border-spacing: 5px; /* cellspacing:poor IE support for this */
     .div-table-row {
        display: table-row;
        width: auto;
        clear: both;
      .div-table-col {
        float: left; /* fix for buggy browsers */
        display: table-column;
        width: 200px;
    </style>
    <h1> CS-5423-60935 - Principles Database Systems -SQL-Part IV</h1>
    <div class="div-table">
      <div class="div-table-row">
        <div class="div-table-col" align="center">
```

```
Users
   <a href="../../user/new">Add new user</a>
   <a href="../../user/selecttable">Select</a>
   <a href="../../user/createtable">Create</a>
    <a href="../../user/inserttable">Insert</a>
     <a href="../../user/deleterecords">Delete records</a>
   <a href="../../user/deletetable">Delete</a>
  </div>
<div class="div-table-col">
 User type
```

```
<a href="../../usertype/selecttable">Select</a>
    <a href="../../usertype/createtable">Create</a>
    <a href="../../usertype/inserttable">Insert</a>
     <a href="../../usertype/deleterecords">Delete records</a>
    <a href="../../usertype/deletetable">Delete</a>
  </div>
<div class="div-table-col">
 Department
    <a href="../../department/selecttable">Select</a>
    <a href="../../department/createtable">Create </a>
    <a href="../../department/inserttable">Insert</a>
```

```
 <a href="../../department/deleterecords">Delete records</a>
    <a href="../../department/deletetable">Delete </a>
  </div>
<div class="div-table-col">
 Employees
    <a href="../../employee/selecttable">Select</a>
    <a href="../../employee/createtable">Create </a>
    <a href="../../employee/inserttable">Insert</a>
     <a href="../../employee/deleterecords">Delete records</a>
    <a href="../../employee/deletetable">Delete table</a>
  </div>
<div class="div-table-col">
```

```
Customer
   <a href="../../customer/selecttable">Select</a>
    <a href="../../customer/createtable">Create </a>
    <a href="../../customer/inserttable">Insert</a>
     <a href="../../customer/deleterecords">Delete records</a>
   <a href="../../customer/deletetable">Delete table</a>
  </div>
<div class="div-table-col">
 Supplier
    <a href="../../supplier/selecttable">Select</a>
```

```
<a href="../../supplier/createtable">Create </a>
      <a href="../../supplier/inserttable">Insert</a>
      <a href="../../supplier/deleterecords">Delete records</a>
     <a href="../../supplier/deletetable">Delete table</a>
    </div>
</div>
<div class="div-table-row">
 <div class="div-table-col" align="center">
  ProductTypes
     <a href="../../producttype/selecttable">Select</a>
      <a href="../../producttype/createtable">Create</a>
```

```
<a href="../../producttype/inserttable">Insert</a>
     <a href="../../producttype/deleterecords">Delete records</a>
    <a href="../../producttype/deletetable">Delete</a>
   </div>
<div class="div-table-col">
 Product
    <a href="../../product/selecttable">Select</a>
    <a href="../../product/createtable">Create</a>
    <a href="../../product/inserttable">Insert</a>
     <a href="../../product/deleterecords">Delete records</a>
    <a href="../../product/deletetable">Delete</a>
   </div>
<div class="div-table-col">
```

```
Product Supplier
    <a href="../../productsupplier/selecttable">Select</a>
    <a href="../../productsupplier/createtable">Create</a>
    <a href="../../productsupplier/inserttable">Insert</a>
     <a href="../../productsupplier/deleterecords">Delete records</a>
   <a href="../../productsupplier/deletetable">Delete</a>
  </div>
<div class="div-table-col">
 Order
    <a href="../../order/selecttable">Select</a>
```

```
<a href="../../order/createtable">Create</a>
    <a href="../../order/inserttable">Insert</a>
     <a href="../../order/deleterecords">Delete records</a>
   <a href="../../order/deletetable">Delete</a>
  </div>
<div class="div-table-col">
 Order detail
    <a href="../../orderdetail/selecttable">Select</a>
    <a href="../../orderdetail/createtable">Create</a>
    <a href="../../orderdetail/inserttable">Insert</a>
```

```
 <a href="../../orderdetail/deleterecords">Delete records</a>
     <a href="../../orderdetail/deletetable">Delete</a>
    </div>
          <div class="div-table-col">
   User Titles <br/>
                                (using stored procedurs)
      <a href="../../usertitle/selectTable">Select</a>
      <a href="../../usertitle/createTable">Create</a>
      <a href="../../usertitle/insertDataToTable">Insert</a>
       <a href="../../usertitle/addColumnToTable">Add columns</a>
     <a href="../../usertitle/dropColumnInTable">Drop columns</a>
     <a href="../../usertitle/deleteTable">Delete</a>
    </div>
</div>
```

```
</div>
```

```
<div class="div-table">
 <div class="div-table-row">
  <div class="div-table-col" align="center">
    Reports
       Stored Procedures
       <a href="../../differnetqueries/callUserCountProc"> UserCount
Procedure</a>
       Stored Procedures
       <a href="../../differnetqueries/callEmployeeDetailsProc">Employees
Details</a>
       Stored Procedures
       <a href="../../differnetqueries/callSupplierDetailsProc">Supplier
Details</a>
```

```
Stored Procedures
       <a href="../../differnetqueries/callProductDetailsProc">Product
Details</a>
       Stored Procedures
       <a href="../../differnetqueries/callBuyingPatternProc">Buying Pattern
Details</a>
       Views
       <a href="../../differnetqueries/getCurrentDayOrders"> Current Day
Orders</a>
       Function
       <a href="../../differnetqueries/getNumberOfProducts"> Number of
products</a>
       </div>
   <div class="div-table-col" align="right">
```

```
Order of deleting tables.
OrderDetails
Orders
ProductSuppliers
 Products
 ProductTypes
Suppliers
Customers 
 Employees
 Users
UserTypes 
Usertitles
```

```
>tr>
Departments
```

```
</div>
```

</div>