Lab 2
MS Access Queries and Reports.

General Information

In this lab you will be creating two reports based on the tables of the Company Products Database. Although when working on your team projects you will be using the tables you created in Oracle via a link from Access (see the handout posted on the course schedule on how this is done), in the Lab you’ll be working on a local, Access version of the tables.

Download the file arlab.mdb from the course web-site and open it in Access.

In this lab you will create two reports. The creation of the first one is more guided than the second, which is left more open-ended. The second report is based on a parameterized query – its contents depend on the input value the user provides.

1. Creating a simple report - Product Sales by the Product Line:
   • Creating the report query.
   • Creating the report layout.

2. Creating a parameterized report - Employee Birthdays in a given month
   • Creating the report query.
   • Creating the report layout.

REPORT 1: Summary of product sales for each product line

Creating the query for the report:

- Click on the Queries object button in the database window.
- To begin creating a query, click on the Create Query in Design View from the box on the right. Click Next.
- Select the tables that are involved in the query: Prodline, Product and Sales tables from the box that appears, then right-click on the top pane and select SQL view.
- Enter the following query (by copy/pasting):

```
SELECT prodline_name AS ProductLine, prod_name AS ProductName,
sum(sales_last_year) AS AmtSalesLastYear, sum(sales_year_to_date) AS AmtSalesThisYear
FROM PRODLINE, PRODUCT, SALES
WHERE prodline_nbr=prod_prodline And prod_nbr=sales_prod_nbr
GROUP BY prod_prodline, prodline_name, prod_nbr, prod_name
ORDER BY prodline_name, prod_name, sum(sales_last_year);
```

- Save the query under the name ProdSalesReport. Click on the ! button to see the results of this query in the tabular format.

Creating the report layout.

- Click on the Reports object button in the database window. You currently have no reports created for this database. To begin creating one, click the New toolbar button in the database window. The New Report dialog box appears. In the drop-down list box captioned “Choose the table or query where the object’s data comes from:”, use the down arrow to show the list of available tables and queries. Since we want to use the ProdSalesReport query as the basis of our report, scroll down the list and select this query.
We will let Access help us build our report, so in the top list box, select **Report Wizard**, then click **OK**.

- You are then asked which fields you wish to include on your report. Choose **all** seven of the available fields in the order listed, by clicking the button with the >> symbol on it. Click the **Next** button.

- You are then asked, “Do you want to add any grouping levels?” Select **ProductLine** then click the **Next** button. This will suppress the repetition of the **ProductLine** information, and at the same time, enable displaying the summary statistics per each change in the Product Line. Click the **Next** button.

- The next step in the Report Wizard asks you how you want to sort the data within groups and what summary information (per group, over the entire data set) you’d like to include.

  Since the query already arranges the data in the desired order, you don’t have to specify the order.

  For the summary options, since we’d like to see the sum of all last and this year’s sales per each product line, click on “**Summary Options**” and check the sum option for both **AmtSalesLastYear** and **AmtSalesThisYear**. Click **OK** and then move to the **Next** screen.

- You are then asked which layout and orientation you desire for your report. I suggest **Outline 1** layout and **Portrait** orientation. Click the **Next** button.

- You are then asked what style you want. Select **Corporate**, or any other style you like and then click **Next**.

- You are then asked for a title for the report. Type **Product Sales Report by Product Line** for the title, and then click the **Finish** button.

Access opens the report preview window showing you your report with the existing data displayed.

In the steps that follow, you’ll practice manipulating the report controls in order to modify the report layout slightly.

Click the **View** button (the first button on the left end of the toolbar) to switch to report Design view. **Maximize** the report design window. You will now make some modifications to the default report that the Report Wizard has created.

The report design view contains a window that’s split into sections:

- **Report Header** - contain the info printed in the beginning of the report, i.e. its title.
- **Page Header**
- **Product Line Header** - contain information that is repeated for each new Page/Product Line
- **Detail** – contains other fields displayed in a row-format
- **Product Line Footer** – displays statistics (aggregate functions) per each product line
- **Page Footer** – contains information displayed in the end of each page (default is the current date/time and the page number)
- **Report Footer** – contains statistics over the entire report.

Items that in the report design view are displayed in **Boldface**, are labels. Other items, are field names and expressions used in generating the report data.

The labels (their text, font) can be changed and moved around:

1. Modify the **Sum** label of the **ProductLine** footer to “Total Sales (last, this year)” and move it closer to the boxes that display the values.

2. Modify the **Grand Total** label that appears in the Page Footer to **Total Sales over all product lines (last, this year)**.
For the data fields, you can change the format:

1. In the Detail section, double click on the AmtSalesLastYear field to bring up a dialog box with a number of options controlling the display of the data. Select the Currency format. Click the View button (the first button on the left end of the toolbar) to see how the layout of the field changes. Make the same change to the AmtSalesThisYear and all statistics.

In the Report Footer section, use the Label (Aa in the toolbox) tool to create the label, Prepared by: Your Name (where you are to substitute your real first and last names). Save the changes you have made to your report. When you have an opportunity, print your report out and examine it.

The screen shot on the next page of this handout shows you what your final report design should look like in the design.

REPORT 2: Employee Birthdays in a given month.

Create the following parameterized query:

```sql
SELECT dept_name, emp_fName & ' ' & emp_lName AS EmployeeName, 
emp_DateOfBirth
FROM EMPLOYEE, DEPT
WHERE emp_dept=dept_nbr And 
emp_DateOfBirth Like ([Enter Month number] & '/**/')
ORDER BY dept_name, emp_DateOfBirth;
```

In this query note the following:
- & is Access’s string concatenation operator (corresponds || in standard SQL)
- * is Access’s wildcard that denotes any number of any characters (corresponds to % in standard SQL)
- [Enter Month Number] is the placeholder of the month number parameter that the user will be asked to enter.
- The default date format in Access is MM/DD/YYYY, and this format is used in this table, so, January is month number 01

Creating the report layout:

As you have done with the previous report, create the report layout using the wizard. Then, display the report in the design view to make the following changes:

- Changing the format of the Birth date
  Click on the emp_dateOfBirth field appearing in the Detail section, and change the format to an alternative date format.

- Adding a total count of employee birthdays per department and per company overall:
  Add dept_name Footer by right-clicking on the report area, selecting the Sorting and Grouping option and changing the Group Footer setting to yes.

  Select the textbox option from the toolbox (ab button). Place it on the dept_name Footer area and enter the following content: =Count(*).

  Do the same in the Report Footer section.

Also, modify the Report Footer as follows:
Add a horizontal line (use the Line tool in the Toolbox) in the Report Footer section above the total fields (see screen shot).

As shown in the screen shot below, in the Report Footer section, use the Label (Aa button) tool to create the label, Prepared by: Your Name (where you are to substitute your real first and last names).

*Change and enlarge the field labels where and however you find appropriate*

Save the changes you have made to your report. When you have an opportunity, print your report out and examine it.