

## UIL Computer Applications Contest Sample Test

Being a contest based on Microsoft Office, Computer Applications will continue to make incremental changes to keep abreast of the changing technology. This year, the competitors will be using only Office 2007 or Office 2010. The format of these two versions is fairly consistent.

Currently, consideration is being given to distribute larger files via downloading from the UIL website so that tests will not be as severely impacted by typographical errors and will be closer to what is common in the business world usage of Microsoft Office. If a student enters a typo, then every field that is calculated based on the field with the typo is also incorrect, and this complicates grading by having graders count a field correct if it matches the key or if, for instance, the field is equal to one field minus another field. When we eliminate typos in the entered data, we eliminate this complication in grading.

An Access database has been created that is downloadable from the UIL website, and it is entitled **Starter File.accdb**. We'd like coaches to download this file and the associated file, **Downloadable Test.pdf**, with directions for this exercise. If this experiment works well, we will use such a downloadable database for the State UIL test. This database has 350+ records in a table entitled "All Employees," and it has nearly 1,000 records in a table entitled "All Sales." This will enable the test to work with a large set of data without requiring students to enter that data.

The **Downloadable Test.pdf** file is in a pdf format so that it is easily downloaded, and it has directions for taking a sample test using the downloaded **Starter File.accdb**. Included are the following:

- **Test.** The test uses the downloaded database to make calculations using an update query and print a report in which summary only data is printed. The test then creates a select query, taking fields from both the **All Employees** table and from the **All Sales** table and exports the result to an Excel worksheet. Students are instructed to use the Excel data to create a pivot table and hide part of the rows of data and print the worksheet.
- **Score Sheets.** Scoring sheets are available for each of the printouts similar to scoring sheets for all Computer Application invitational tests, and a Final Total scoring sheet is included for composite scores.
- **Printouts.** Both printouts are included after the scoring sheets.
- **Additional Data.** Since this is an experiment, this packet includes a printout of the update query formulas, a printout of the select query fields, a printout of the design view of the report, and a printout of the building of the pivot table.

After you've tried the sample test yourself, have your students attempt the test. **I would really like to get feedback on how this system will work.** I think this will actually give students a truer picture of how people use Microsoft Office, particularly Excel and Access. Perhaps, eventually this will make it clear what the actual function of a database is as opposed to the usage of a spreadsheet. Many students working with a very limited collection of data have little understanding of the value of database applications and feel that everything can be done in a spreadsheet. This is not the case when there are large database files and multiple related tables. Hopefully, this will also make the grading a bit more straightforward with the elimination of most typos.

## UIL Computer Applications Test Using Downloaded Files

**GENERAL TEST INSTRUCTIONS:** This is a sample test that uses files that should be downloaded onto students' hard drives so that the test can be taken with files for which students do not have to enter data. This attempts to eliminate most typos in the test, and it is a precursor to possibly using large downloadable files for the State Computer Applications Test in 2012. Download the Access file entitled **Starter Files.accdb**, which has 2 tables, **All Employees** and **All Sales**. Process each section of this sample test to create the required printouts. When time is called, you will be graded on the printouts completed. Times New Roman in a 12 point font was primarily used for the Answer Key, but this is not a requirement, and a smaller type is sometimes easier to fit to a page. Include only what is requested (i.e., if it asks for boldface type, include only boldface type, not underlined and not italic.

### I. DATABASE

MAX 125

- A. Use the **Starter Files** database, and be sure there is a relationship between the **ID** field of the **Employees** table and the **Salesman** field of the **Sales** table.
- B. Save the database as **Finished Files**.
- C. Create an update query in design view to update the following fields from **All Employees** table.
  1. Update **NoYears** by subtracting the **DateHired** from 12/31/2011 and dividing the result by 365.25, then use the Int function with the entire formula as the parameter and run query.
  2. Update the **Increase** field by subtracting **StartSalary** from **CurrentSalary** and run query.
  3. Update the **AvgInc** field by dividing **Increase** by **NoYears** and run query. Six 6 fields will not update because **NoYears** and **Increase** are 0. Click Yes to ignore error.
  4. Update the **PctInc** field by dividing the **AvgInc** by **StartSalary** and run query. One record with 6 fields will not update because **AvgInc** is blank. Click Yes to ignore error.
  5. Save query as **UpdQry**.
- D. Create a report using the report wizard with the following specifications.
  1. Select these fields from the **All Employees** table: **StartSalary**, **CurrentSalary**, **NoYears**, **Increase**, **AvgInc**, and **PctInc**, and use the **SaleAmount** field from the **AllSales** table.
  2. Group by **NoYears** with grouping intervals of 10.
  3. For Summary Options, calculate the average of **StartSalary**, **CurrentSalary**, **Increase**, **AvgInc**, and **PctInc**, and calculate the sum of **SaleAmount**.
  4. Show Summary Only.
  5. Use Stepped Layout, landscape orientation, and None Style (if using Office 2007).
  6. Use the following title: Salary Summary.
  7. Make the following changes after the report is created.
    - a. Add a label box with the following top aligned with the title and right aligned on the right-hand margin, replacing 99999 with contestant number: (99999)-Printout 1
    - b. Make everything in the report plain, black type.
    - c. Set all margins to 1".
    - d. Remove **Years Employed** column heading and detail data field.
    - e. Be sure nothing is truncated or wrapped, including the Summary for... line.
    - f. Everything in the first column should be left justified with page header, group header, and group footer inset from the report header, report footer and page footer.
    - g. All other column headings and summary data should be vertically right justified.
  8. Print your report. (Note: report may or may not have shading and borders.)
- E. Create a select query in design view with the following specifications.
  1. Use both tables, and select the following from **All Employees** table: **LastName**, **NoYears**, **Increase**, **AvgInc**, and **PctInc**, and select **SaleAmount** and **Quarter** from **All Sales** table.
  2. Save the query as **SelQry**, and run the query.
  3. View the data from the **SelQry** in the datasheet view and export the data with formatting and layout to an Excel file named **Selected Sales**, and open the destination file after the export operation is complete.

**II. EXCEL WITH PIVOT TABLE & PRINTOUT**

**MAX 100**

- A. Using the newly exported **Selected Sales** table in Excel, select Cells A1 thru G937 and create a pivot table in Cell A938 of the **SelQry** worksheet with the following appearance.
1. Use **Last Name** for Row Labels.
  2. Use **Quarter** for Column Labels.
  3. Use **Amount of Sales** for Values
  4. The pivot table should have the following appearance. Note colons represent missing rows of data.

	A	B	C	D	E	F
938	Sum of Amount of Sales	Column Labels				
939	Row Labels	Q1	Q2	Q3	Q4	Grand Total
940	Bridges	727,889	773,090	1,016,396	883,967	3,401,342
:	:	:	:	:	:	:
950	<b>Grand Total</b>	<b>8,097,065</b>	<b>8,436,618</b>	<b>8,331,055</b>	<b>9,392,536</b>	<b>34,257,274</b>

- B. Format the worksheet and pivot table with the following specifications.
1. Use landscape orientation.
  2. Use 3/4" for all margins, and center the printout vertically and horizontally.
  3. Use the following header 3/4" from the top and right margins: Printout 2
  4. Show gridlines and row and column headings.
  5. Make sure everything in Row 1 is boldface type with shading and borders, and center and wrap column headings as needed to fit on a one-page printout.
  6. Hide all rows from Row 3 thru Row 936 so that they are not visible.
  7. Center everything in Columns A and G.
  8. Right justify everything else in the worksheet and pivot table.
  9. Make sure all column headings for the pivot table in Rows 938, 939 and 950 are boldface type and shaded, and all match those shown above with nothing wrapped or truncated.
  10. Show values in Cells E2 and E937 as percentages with no decimals, and show all other values in the worksheet and pivot table as numbers with commas and no decimals and no dollar signs.
  11. Set the print area to be Cell A1 thru Cell G950.
  12. Print your printout on one page.

## UIL Computer Applications Test Using Downloaded Files

### I ACCESS REPORT

**TOTAL VALUE: 125**

	PTS	GRD1	GRD2	GRD3
1 <b>Format</b> ( <i>Grading for formatting only, not for correct data.</i> )				
2 Printout in Landscape Orientation on one page	5	___	___	___
3 Top, bottom, left, and right margins 1"	5	___	___	___
4 Everything shown in plain, black type	5	___	___	___
5 Header top aligned with the title and right aligned on the right-hand margin	5	___	___	___
6 7 columns shown, no more and no less	5	___	___	___
7 Headings matching key	5	___	___	___
8 Nothing truncated or wrapped	5	___	___	___
9 Group footer averages shown for <b>Start Salary, Current Salary, Salary Increase, Average Increase, and Percent of Increase</b>	5	___	___	___
10 Group and report footer sums shown for <b>Amount of Sales</b>	5	___	___	___
11 Everything in the first column left aligned, and all other column headings and summary values vertically right aligned	5	___	___	___
12 <b>Percent of Increase</b> shown as percent with no decimals and all other numbers shown with commas and no decimals and no dollar signs	5	___	___	___
13 No detail data shown	5	___	___	___
14 <b>Format Total</b>	<b>60</b>			
15 <b>Grouping/Calculations</b> ( <i>Grading for correct data, not formatting.</i> )				
16 Report grouped by <b>NoYears</b> by 10s	10	___	___	___
17 5 groups shown matching key	5	___	___	___
17 All <b>Starting Salary</b> group footer values matching key	5	___	___	___
18 All <b>Current Salary</b> group footer values matching key	5	___	___	___
19 All <b>Salary Increase</b> group footer values matching key or equal to <b>Current Salary</b> minus <b>Starting Salary</b>	10	___	___	___
20 All <b>Average Increase</b> group footer values matching key	10	___	___	___
21 All <b>Percent of Increase</b> group footer values matching key	10	___	___	___
22 All <b>Amount of Sales</b> group footer values matching key	5	___	___	___
23 <b>Amount of Sales</b> in report footer matching key or equal to sum of the group footer values	5	___	___	___
24 <b>Grouping/Calculations Total</b>	<b>65</b>			
25 ♣ <b>SUBTOTAL PRINTOUT 1</b>	<b>125</b>			
26 <b>SUBTRACT TYPOS</b>				
27 ♣ <b>Maximum 20 Points</b>				
27 ♣ Deduct two points for each typographical error in the printout. Note that this was a practice test, and there was no way to easily grade values in group footers if they did not equal the key by defining a calculation except for <b>Salary Increase</b> .				
27 ♣ Errors include misspelling, missed capitalization, double words, omitted words, extra words, words that run together, incorrectly divided words, and incorrect values not otherwise scored. Header is subject to 2 typos.				
28 ♣ <b>TOTAL PRINTOUT 1</b>	<b>125</b>			
29 <b>GRADERS' INITIALS</b>		___	___	___

UIL Computer Applications Invitational Test B - Printout 2

II. EXCEL WORKSHEET WITH PIVOT TABLE		TOTAL VALUE: 125			
Format (Grading for formatting, not correct data.)		PTS	GRD1	GRD2	GRD3
1	Printout in landscape orientation on one page	5	___	___	___
2	Header right aligned 3/4" from top and right edges of the page	5	___	___	___
3	Printout centered vertically and horizontally with at least 3/4" margins	5	___	___	___
4	7 columns shown	5	___	___	___
5	Row headings matching key, showing <u>only</u> Rows 1, Row 2 and Rows 937 thru 950	10	___	___	___
6	Everything in Row 1 centered and boldface type	5	___	___	___
7	Everything in Rows 938, 939, and 950 in boldface type	5	___	___	___
8	Everything in Columns A and G centered	5	___	___	___
9	Everything in Cells B2 thru F950 right justified	5	___	___	___
10	<b>Percent of Increase</b> shown as percent with no decimals and all other values shown as numbers with commas and no decimals and no \$ signs	5	___	___	___
11	Pivot table shown covering most of Cells A938 thru F950	5	___	___	___
12	Row labels of pivot table shown as <b>Last Name</b> fields	10	___	___	___
13	Column labels of pivot table shown as <b>Q1 thru Q4 &amp; Grand Total</b>	10	___	___	___
14	Gridlines shown (except in pivot table)	5	___	___	___
15	<b>Format Total</b>	<b>85</b>			
16	<b>Calculations/Pivot Table</b>				
17	Add 5 points for values in <b>Years Employed</b> matching key max	10	___	___	___
18	All values in Q1 detail data matching key	10	___	___	___
19	All values in Q2 detail data matching key	10	___	___	___
20	All values in Q3 detail data matching key	10	___	___	___
21	All values in Q4 detail data matching key	10	___	___	___
22	All values in <b>Grand Total</b> column of pivot table matching key or equal to sum of values in Columns B thru E on each line	10	___	___	___
23	All values in <b>Grand Total</b> row of pivot table matching key or equal to sum of the values in the respective column	5	___	___	___
24	<b>Calculations/Pivot Table Total</b>	<b>65</b>			
25	<b>❖ SUBTOTAL PRINTOUT 1</b>	<b>150</b>			
26	<b>SUBTRACT DEDUCTIONS</b>	<b>Maximum 10 Points</b>	___	___	___
27	❖ Deduct two points for each typographical error in the printout. Do not deduct for typos in the values that were specifically scored. Header is subject to 2 typos. Note: most data came straight from the downloaded database and this precludes most typos unless incorrect data was exported. Deduct typos for Row 2 and 937 for all values except <b>Years Employed</b> . ❖ Errors include misspelling, missed capitalization or punctuation, double words, omitted words, extra words, words that run together, incorrectly divided words, truncated or wrapped values, and incorrect values that are not otherwise scored.				
28	<b>❖ TOTAL PRINTOUT 1</b>	<b>150</b>			
29	<b>GRADERS' INITIALS</b>		___	___	___

Contestant Number \_\_\_\_\_

## UIL Computer Applications Invitational Test B - Final Score

### FINAL SCORE

❖ **TOTAL PRINTOUT 1** 125 \_\_\_\_\_

❖ **TOTAL PRINTOUT 2** 125 \_\_\_\_\_

❖ **TOTAL SCORE** 250 

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GRADER'S INITIALS \_\_\_\_\_

# Salary Summary

Printout 1

NoYears by 10s	Start Salary	Current Salary	Salary Increase	Average Increase	Percent of Increase	Amount of Sales
0 - 10						
Summary for 'NoYears' = 6 (378 detail records)						
Sum						13,805,672
Avg	20,991	29,052	8,061	3,454	16%	
10 - 20						
Summary for 'NoYears' = 14 (92 detail records)						
Sum						3,401,342
Avg	16,900	47,100	30,200	2,157	13%	
20 - 30						
Summary for 'NoYears' = 25 (292 detail records)						
Sum						10,709,023
Avg	10,294	40,464	30,170	1,344	14%	
30 - 40						
Summary for 'NoYears' = 32 (83 detail records)						
Sum						3,110,848
Avg	9,800	44,000	34,200	1,069	11%	
40 - 50						
Summary for 'NoYears' = 41 (91 detail records)						
Sum						3,230,389
Avg	8,100	43,200	35,100	856	11%	
Grand Total						34,257,274

Monday, January 23, 2012

(UIL Computer Applications [Printout 1 - Access for Coaches/Graders](#))

Page 1 of 1

	A	B	C	D	E	F	G
1	Last Name	Years Employed	Salary Increase	Average Increase	Percent of Increase	Amount of Sales	Quarter
2	Bridges	14	30,200	2,157	13%	30,047	Q3
937	Thyme	3	10,200	3,400	14%	70,013	Q1
938	<b>Sum of Amount of Sales</b>						
939	<b>Row Labels</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Grand Total</b>	
940	Bridges	727,889	773,090	1,016,396	883,967	3,401,342	
941	Cash	614,464	942,986	786,042	1,477,773	3,821,265	
942	Kerr	750,257	1,082,661	1,070,522	939,102	3,842,542	
943	Marx	727,289	952,901	804,644	745,555	3,230,389	
944	Nutt	1,084,108	977,810	855,201	917,927	3,835,046	
945	Oki	1,028,415	782,977	614,540	684,916	3,110,848	
946	Poole	610,279	959,549	1,095,383	831,617	3,496,828	
947	Rubin	807,924	581,483	823,568	818,460	3,031,435	
948	Shinn	911,986	505,953	629,803	773,647	2,821,389	
949	Thyme	834,454	877,208	634,956	1,319,572	3,666,190	
950	<b>Grand Total</b>	<b>8,097,065</b>	<b>8,436,618</b>	<b>8,331,055</b>	<b>9,392,536</b>	<b>34,257,274</b>	

UpdQry

All Employees

- \* ID
- FirstName
- LastName
- DateHired
- StartSalary
- CurrentSalary
- NoYears
- Increase
- AvgInc
- PctInc

Field:	NoYears	Increase	AvgInc	PctInc
Table:	All Employees	All Employees	All Employees	All Employees
Update To:	Int(#12/31/2011# - [DateHired])/365.25	[All Employees].[CurrentSalary]; [All Employees].[StartSalary]	[All Employees].[Increase]/[All Employees].[NoYears]	[All Employees].[AvgInc]/[All Employees].[StartSalary]
Criteria:				

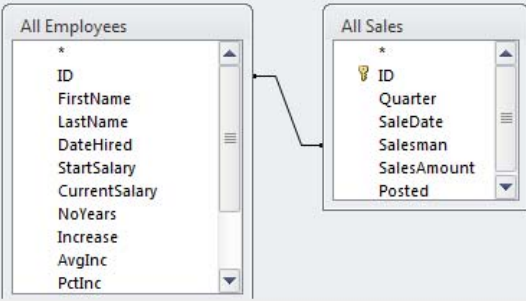
or:

(UJL Computer Applications **Update Query for Coaches/Graders**)

## Design View of Salary Summary Report

Report Header									
Salary Summary									Printout 1
Page Header									
NoYears by 10s	Start Salary	Current Salary	Salary Increase	Average Increase	Percent of Increase	Amount of Sales			
NoYears Header									
=Int((([NoYears])/10)*10 &									
Detail									
	StartSalary	CurrentSalary	NoYears	Increase	AvgInc	PctInc	SalesAmc		
NoYears Footer									
="Summary for " & "NoYears' = " & " " & [NoYears] & " (" & Count(*) & " " & If(Count(*)=1,"detail record","detail records") & ")"									
Sum									=Sum([SalesA
Avg	=Avg([StartSal	=Avg([CurrentSa	=Avg([Increase]	=Avg([AvgInc]	=Avg([PctInc				
Page Footer									
=Now()					="Page " & [Page] & " of " & [Pages]				
<small>(Util. Computer Application) <b>Printout 1 - Access for Coaches/Graders</b> ;</small>									
Report Footer									
Grand Total									=Sum([SalesA

SeQry



Field:	LastName	NoYears	Increase	AvgInc	PctInc	SalesAmount	Quarter
Table:	All Employees	All Employees	All Employees	All Employees	All Employees	All Sales	All Sales
Sort:							
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:							
or:							

PivotTable Field List

Choose fields to add to report:

- Last Name
- Years Employed
- Salary Increase
- Annual Increase
- Percent of Increase
- SalesAmount
- Quarter

Drag fields between areas below:

Report Filter: Quarter

Row Labels: Last Name

Column Labels: Values

Sum of SalesAmount

Defer Layout Update

Update

	A	B	C	D	E	F	G
	Last Name	Years Employed	Salary Increase	Annual Increase	Percent of Increase	SalesAmount	Quarter
1	Bridges	14	30,200	2,157	13%	30,047	Q3
2	Thyme	3	10,200	3,400	14%	70,013	Q1
937							
938	<b>Sum of SalesAmount</b>	<b>Column Labels</b>					
939	<b>Row Labels</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Grand Total</b>	
940	Bridges	727,889	773,090	1,016,396	883,967	3,401,342	
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950	<b>Grand Total</b>	<b>8,097,065</b>	<b>8,436,618</b>	<b>8,331,055</b>	<b>9,392,536</b>	<b>34,257,274</b>	
951							

(UJL Computer Applications **Pivot Table Format for Coaches/Graders**)