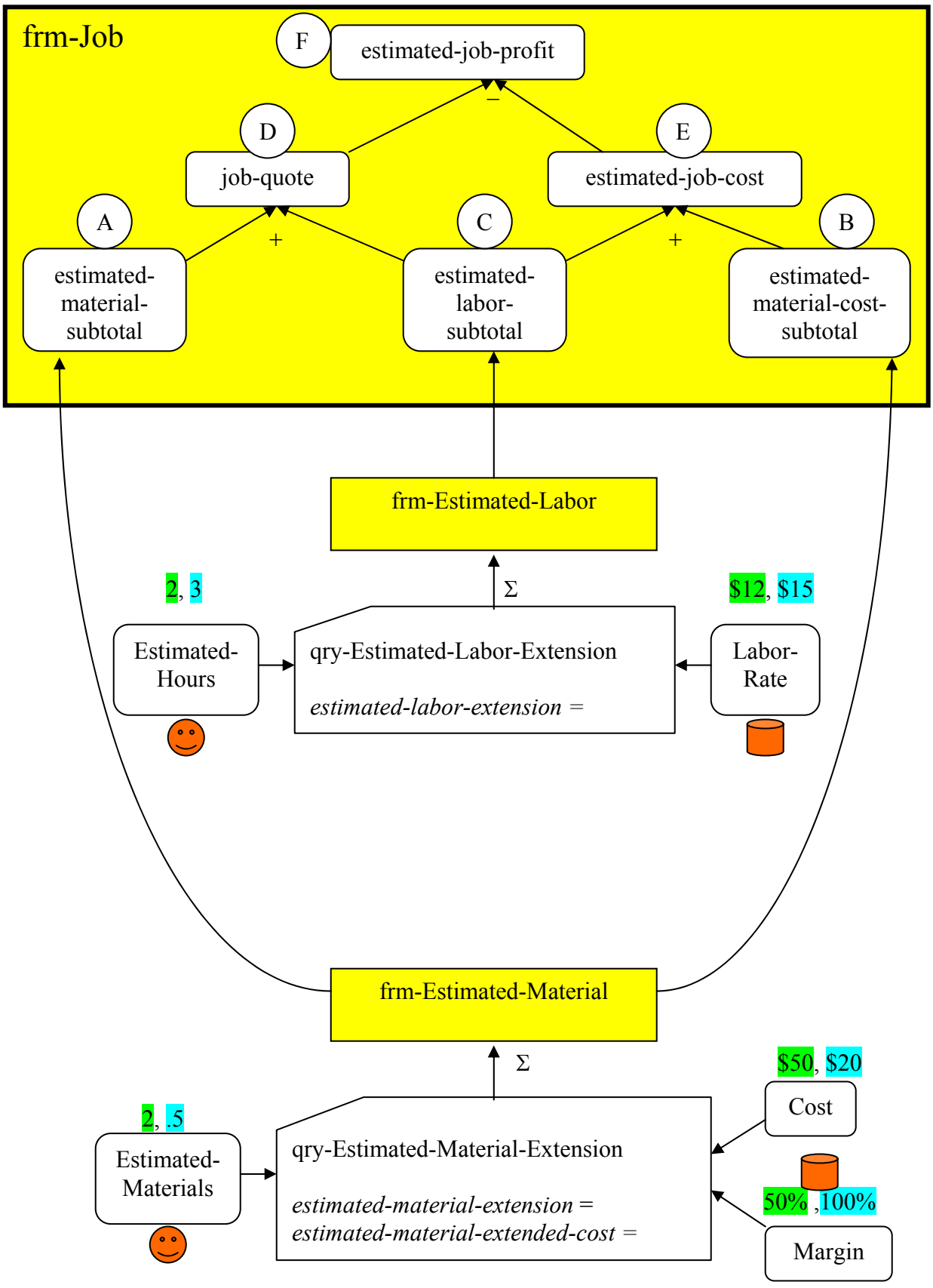
Produce a Quote: Overall Structure in ACCESS



Lab: Produce A Quote (I)

The objective of this lab is to create the form that produces a quote. In this lab you will develop the "bare bones" version of the form so that you understand what goes into creating it. The final project version of this form will no doubt be more refined.

Due to its complexity, this lab will be done in two phases.

Step 1.A.
Build a query called qry-Estimated-Material-Extension. For every job and every material used in that job, this query will show:

- job-id, material-id, estimated-material from tbl-JOB-MATERIAL
- material-name, cost, margin from tbl-MATERIAL
- Save it. Go back to it in design mode and add:
- estimated-material-extension (: estimated-material * cost * [1+margin])
- estimated-material-extended-cost (: estimated-material * cost).

Step 1.B.
Build a query called qry-Estimated-Labor-Extension. For every job and every worker used in that job, this query will show:

- job-id, worker-id, estimated-hours from tbl-JOB-WORKER
- worker-name, rate from tbl-WORKER
- estimated-labor-extension (: estimated-hours * rate).

Step 2.A.
Use the form wizard to build a form on the qry-Estimated-Material-Extension called frm-Estimated-Material. Select all the fields except job-id. Columnar layout. Choose any style that you wish. Save. Go back to it in design mode. Extend to the right. Move things around. Activate the toolbox (under view, or click on the icon). In form footer, place a text box (from the toolbox):

- For label (caption): Material Subtotal
- For Data: properties, control source, click on …, Forms, loaded forms (or from the top of the list), frm-Estimated-Material, choose estimated-material-extension in the middle column
- Up in the expression builder: = sum ([estimated-material-extension])
- Name: estimated-material-subtotal
- Format it properly as currency

In form footer, place another text box (from the toolbox):

- For label (caption): Material Cost Subtotal
- For Data: properties, control source, click on …, Forms, loaded forms (or from the top of the list), frm-Estimated-Material, choose estimated-material-extended-cost in the middle column
- Up in the expression builder: = sum ([estimated-material-extended-cost])
- Name: estimated-material-cost-subtotal
- Format it properly as currency

Step 2.B.
Use the form wizard to build a form on the qry-Estimated-Labor-Extension called frm-Estimated-Labor. Select all the fields except job-id. Columnar layout. Choose any style that you wish. Save.

Go back to it in design mode. Extend to the right. Move things around. Activate the toolbox. In form footer, place a text box (from the toolbox):

- For label (caption): Estimated Labor Subtotal
- For Data: properties, control source, click on …, Forms, loaded forms, frm-Estimated-Labor, choose estimated-labor-extension in the middle column
- Up in the expression builder: = sum ([estimated-labor-extension])
- Name: estimated-labor-subtotal
- Format it properly as currency

Step 3.A.

Build a form on tbl-JOB called frm-Job. Select job-id, customer-id, description, quote-date, promised-date, status (type-id?) ordertaker (workerid?). Columnar Layout. Choose any style that you wish. Save. Go back to it in design mode. Extend the detail area a lot.

Click on the Subform/Subreport icon on the toolbox and drag that to the detail area. Select the frm-Estimated-Material. To link the main form to this subform, click "Define my own". For both *Form Field* and *Subform Field* select job-id.

Click on the Subform/Subreport icon on the toolbox and drag that to the detail area. Select the frm-Estimated-Labor. To link the main form to this subform, click "Define my own". For both *Form Field* and *Subform Field* select job-id.

Step 3.B.

On the Job-Form place the following six text boxes:

A

- For label (caption): Material Subtotal
- For Data: properties, control source, click on …, Forms, loaded forms, frm-Job, frm-Estimated-Material, choose estimated-material-subtotal in the middle column. This will automatically insert = [frm-Estimated-Material].Form![estimated-material-subtotal] in the Expression Builder.
- Name: estimated-material-subtotal
- Format it properly as currency

B

- For label (caption): Material Cost Subtotal
- For Data: properties, control source, click on …, Forms, loaded forms, frm-job, frm-Estimated-Material, choose estimated-material-cost-subtotal in the middle column. This will automatically insert = [frm-Estimated-Material].Form![estimated-material-cost-subtotal] in the Expression Builder.
- Name: estimated-material-cost-subtotal
- Format it properly as currency

C

- For label (caption): Labor Subtotal
- For Data: properties, control source, click on …, Forms, loaded forms, frm-Job, frm-Estimated-Labor, choose estimated-labor-subtotal in the middle column. This will automatically insert = [frm-Estimated-Labor].Form![estimated-labor-subtotal] in the Expression Builder.
- Name: estimated-labor-subtotal
- Format it properly as currency

D

- For label (caption): Job Quote
- For Data: properties, control source, click on …, Forms, loaded forms, frm-Job, choose estimated-labor-subtotal in the middle column. After this is inserted in the Expression Builder, insert +, select and add estimated-material-subtotal. The Expression Builder will now show = [estimated-labor-subtotal] + [estimated-material-subtotal].
- Name: job-quote
- Format it properly as currency

E

- For label (caption): Job Cost
- For Data: properties, control source, click on …, Forms, loaded forms, frm-Job, choose estimated-labor-subtotal in the middle column. After this is inserted in the Expression Builder, insert +, select and add estimated-material-cost-subtotal. The Expression Builder will now show = [estimated-labor-subtotal] + [estimated-material-cost-subtotal].
- Name: estimated-job-cost
- Format it properly as currency

F

- For label (caption): Job Profit
- For Data: properties, control source, click on …, Forms, loaded forms, frm-Job, choose job-quote in the middle column. After this is inserted in the Expression Builder, insert –, select and add job-cost. The Expression Builder will now show = [job-quote] – [estimated-job-cost].
- Name: estimated-job-profit
- Format it properly as currency

Deliverable:
A one-page screen shot of your job form, showing the job details in addition to the two subforms embedded in it, all shown with the same data set as discussed in class.

Note: This may not be the *most efficient* way of producing the required result, but it is probably the most transparent. Since the goal is to understand the design rather than learn the intricacies of MS-Access, transparency is desirable at this point.

Lab: Produce A Quote (II)

This is the second part of the project module that produces a quote.

You need to assure that your historic material and labor rates for each past job are saved and not updated when you increase your material costs, margins and labor rates in the future. This is accomplished in the various phases of step 4.

Step 4.A.
Build a query called qry-Material-Extension-Update. Bring in tbl-MATERIAL and tbl-JOB-MATERIAL. Click on Query (top tool bar) and then on Update Query. This inserts a new *Update To* row in the lower half.

- Select quoted-material-cost from the tbl-JOB-MATERIAL. Put the cursor in the *Update To* cell, right click, select Build, and in the Expression Builder insert the cost field from tbl-MATERIAL.

- Select quoted-material-margin from the tbl-JOB-MATERIAL. Put the cursor in the *Update To* cell, right click, select Build, and in the Expression Builder insert the margin field from tbl-MATERIAL.

We want this query to update not ALL job-material records but only the ones in the active form. So …..

- Select job-id from tbl-JOB-MATERIAL. Put the cursor in the *Criteria* cell, right click, select Build, and in the Expression Builder insert the job-id from the job form. It will look something like [Forms]![frm-Job]![job-id].

Step 4.B.
Build a query called qry-Labor-Extension-Update. Bring in the tbl-WORKER and tbl-JOB-WORKER. Click on Query (top tool bar) and then on Update Query. This inserts a new *Update To* row in the lower half.

- Select quoted-worker-rate from tbl-JOB-WORKER. Put the cursor in the *Update To* cell, right click, select Build, and in the Expression Builder insert the rate field from the tbl-WORKER

We want this query to update not ALL job-worker records but only the ones in the active form. So …..

- Select job-id from tbl-JOB-WORKER. Put the cursor in the *Criteria* cell, right click, select Build, and in the Expression Builder insert the job-id from the job form. It will look something like [Forms]![frm-Job]![job-id].

Step 4.C.
Build a macro called mcr-Save-Material-And-Labor-Rates. Under action, insert “open query”, go down and select as query name: qry-Material-Extension-Update. In the same macro, put a second action: insert “open query”, go down and select as query name: qry-Labor-Extension-Update. Save.

Step 4.D.
Open the frm-Job in design mode. Somewhere (next to the six text boxes built earlier under step 3.B., but not too close to them) insert a command button to run the macro just built. When the wizard pops up, select miscellaneous, run macro, and choose mcr-Save-Material-And-Labor-Rates. Both for the button's name and label write: Save Material And Labor Rates. To save historic rates at the end of each quote transaction, all the user has to do is press this button. Every time this button is pressed, the system will confirm (once per query) that records are to be updated. To turn confirmation messages off (if that is what you wish):

- On the **Tools** menu, click **Options**
- Click the **Edit/Find** tab.
- Under **Confirm**, clear (uncheck) Action Queries.

The following steps build a receipt and embed it in the job form.

Step 5.A.
Use the report wizard to build a report on tbl-JOB called rpt-Receipt. Bring in job-id, customer-id, job-description, and quote-date.

Step 5.B.
Build a macro called mcr-View-Receipt. For action, select *Open Report*, for report name select rpt-Receipt, for View select *Print Preview*. Put the curser in *Where Condition*, right click and select build. Insert the job-id from the job form. OK. Then back in *Where Condition* add [JobNo] = . The end result is that **[JobNo] = [Forms]![Job-Form]![JobNo]** should appear in the *Where Condition.*

Step 5.C.
Open the job from in design mode and put a command button on it. When the command button wizard pops up, from categories select Miscellaneous, and from actions select run macro. Select mcr-View-Receipt. Label: Preview Quote. Name: btn-Preview-Quote. If you run this report, it will print the receipt for only the active job. Without the *Where Condition,* it would have printed the receipt for ALL the jobs.

Step 5.D.
We want the receipt to also show material details (material name, quantity used), labor details (artist name, hours assigned), and the total amount of the quote. Do not divulge any confidential information such as material costs/margins, worker rates, and job cost/profit. Make sure no field names are used as captions. Since you have been spoon-fed enough up to this point, it is now up to you to figure out how to do this!

Deliverable:

- A one-page screen shot of your job form as in the previous lab (same data), but this time also showing the two buttons inserted on the form. By turning in this page, you are acknowledging that both buttons actually work and that they are not merely cosmetic. If they do not work, do not turn in this page.
- A screen shot of your receipt, showing the required details for the same job as your previous lab.