Operating fee revenue distribution calculations for ABB

UNIVERSITY of WASHINGTON

Agenda

- **Roadmap for data/tool development**
- **Steps to calculate tuition revenue pools**
- **Steps to calculate distribution of revenue to units**
- **Summary of approach to making projections**

- **Additional questions**

Questions of clarification only, please

All questions are welcome!

Roadmap for ABB information development

- **Data are now available in AIDB (in EDW) that allow everyone to see and perform all of the operating fee revenue distribution calculations for ABB.**
- **From now until the end of the FY, we will be developing tools that make it easier to take advantage of the data**
  - **First, SQL code and Access queries that do specific things.**
  - **Later, more user-friendly tools**

What is available *now*?

- **Sixteen new tables**
  - **Ten required for ABB calculations**
  - **One additional table will facilitate projections**

- **Detailed information can be found here**

There are three basic sets of calculations required for tuition in ABB

- **Calculation of net operating fee revenue pools for each tuition group**
- **Calculation of the distribution of each tuition group's revenue pool to each school/college**
- **Projections for future years**

Calculating Net Operating Fee Revenue Pools by Tuition Group

UNIVERSITY of WASHINGTON

One preliminary detail: tuition codes, categories, groups

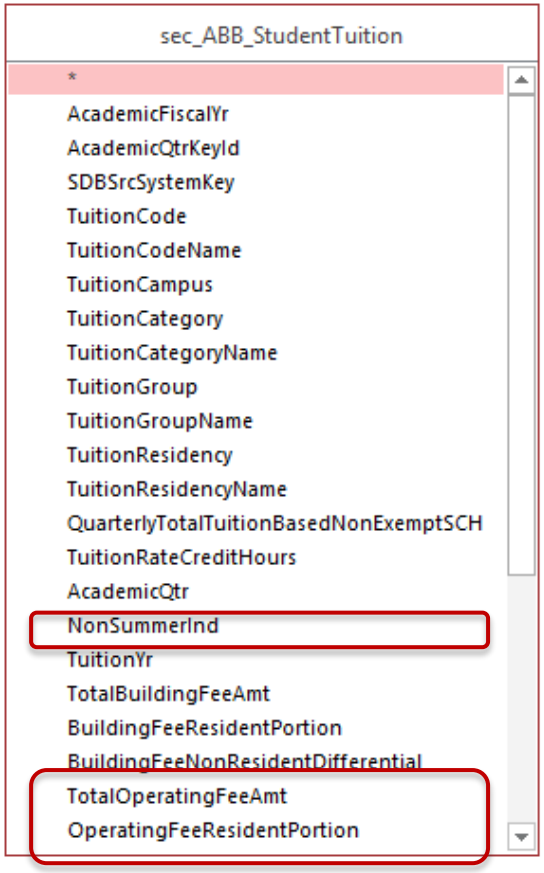
Detail is in OPB_TuitionCodeCategoryGroup

Tuition Campus	Tuition Code	Tuition Code Name	Tuition Category Name	Tuition Residency Name	Tuition Group Name
0	100	Seattle, Resident, Undergraduate	Undergraduate	Resident	Undergraduate
0	101	Seattle, Nonresident, Undergraduate	Undergraduate	Nonresident	Undergraduate
0	105	Seattle, Resident, Post-baccalaureate taking only UG courses	Undergraduate Post-Bacc / Non-Matric	Resident	Undergraduate
0	106	Seattle, Nonresident, Post-baccalaureate taking only UG courses	Undergraduate Post-Bacc / Non-Matric	Nonresident	Undergraduate
0	108	Seattle, Resident, Non-matriculated taking only UG courses	Undergraduate Post-Bacc / Non-Matric	Resident	Undergraduate
0	109	Seattle, Nonresident, Non-matriculated taking only UG courses	Undergraduate Post-Bacc / Non-Matric	Nonresident	Undergraduate
0	200	Seattle, Resident, Graduate Tier I	Graduate Tier I	Resident	Graduate Tier I
0	201	Seattle, Nonresident, Graduate Tier I	Graduate Tier I	Nonresident	Graduate Tier I
0	203	Seattle, Resident, Graduate Tier II	Graduate Tier II	Resident	Graduate Tier II
0	204	Seattle, Nonresident, Graduate Tier II	Graduate Tier II	Nonresident	Graduate Tier II
0	208	Seattle, Resident, Graduate Tier III	Graduate Tier III	Resident	Graduate Tier III
0	209	Seattle, Nonresident, Graduate Tier III	Graduate Tier III	Nonresident	Graduate Tier III
0	220	Seattle, Resident, Post-baccalaureate/Non-Matric taking any graduate course	Graduate Post-Bacc / Non-Matric	Resident	Graduate Tier III
0	221	Seattle, Nonresident, Post-baccalaureate/Non-Matric taking any graduate course	Graduate Post-Bacc / Non-Matric	Nonresident	Graduate Tier III
0	435	Seattle, Resident, Master of Education & Master in Teaching	Master of Education and Master in Teaching	Resident	Education Graduate
0	436	Seattle, Nonresident, Master of Education & Master in Teaching	Master of Education and Master in Teaching	Nonresident	Education Graduate
0	432	Seattle, Resident, Doctor of Education & Education PhD	Doctor of Education and Education PhD	Resident	Education Graduate
0	433	Seattle, Nonresident, Doctor of Education & Education PhD	Doctor of Education and Education PhD	Nonresident	Education Graduate



First: Find total amount of operating fee charged

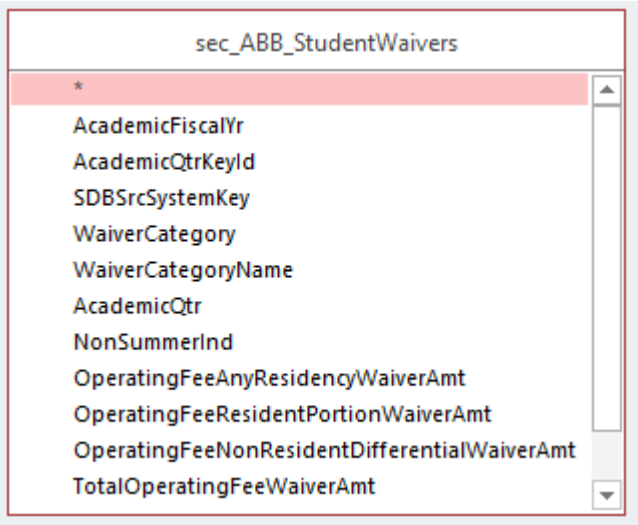
Use ABB_StudentTuition



- One record per student per quarter
- Shows:
  - Tuition campus, category, group, and residency
  - Amount charged, given census day enrollment, for each fee
    - You want operating fee and resident portion of operating fee
- Remember that ABB applies only to Fall, Winter and Spring quarters

Second: Determine total amount waived

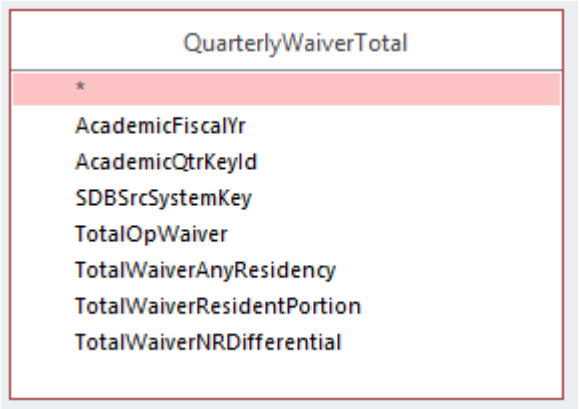
Use ABB_StudentWaivers



- **One record per student per quarter per *waiver category***
- **Shows TotalOperatingFeeWaiverAmt**
  - **Also, needed for projections, waiver of :**
    - **Resident portion**
    - **Nonresident differential**
    - **Op fee regardless of residency**

Second (cont.) Sum waivers over waiver categories

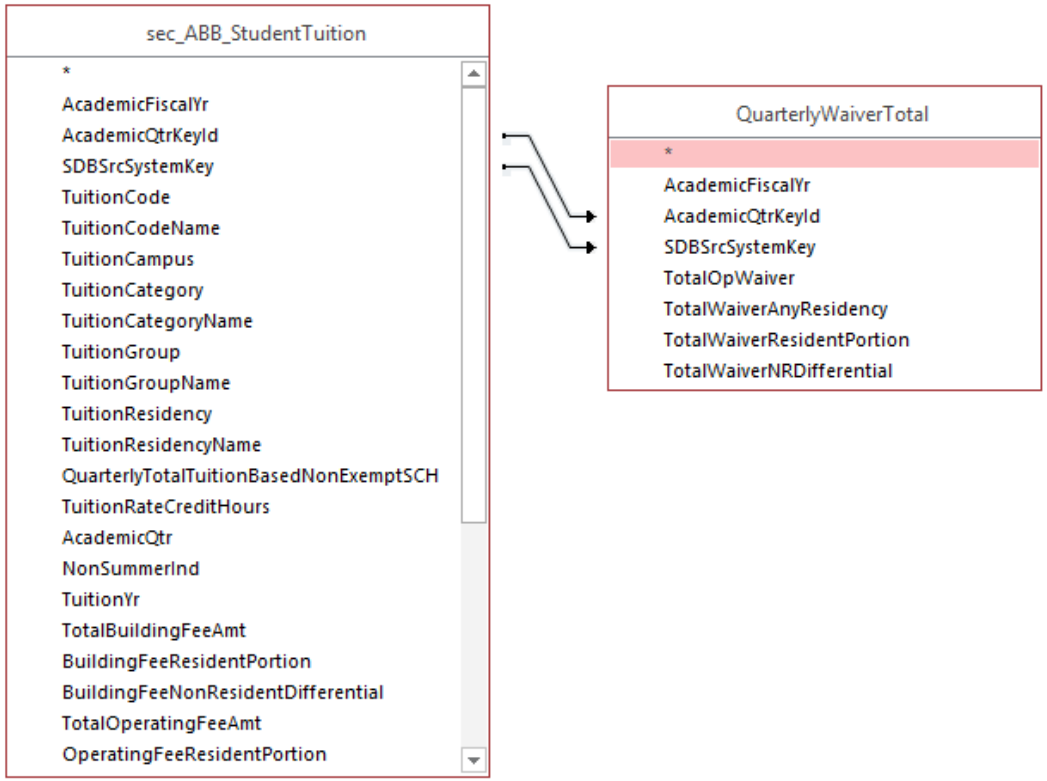
- **To make things easier, sum waiver amounts over categories (unless you want to explore amount associated with each waiver type)**



(This will make things easier because you will have one record per student with op fee charges and one record per student with amount waived)

Third: Combine amount charged with waivers

- **Need a "left join" because not every student receives a waiver**



- **Output:**
  - **Gross revenue**
  - **Gross revenue – resident portion**
  - **Amount waived**

Third (cont.): Finish calculating net revenue

- **For each tuition group, we now have:**

  $G = Gross\ Revenue$

  $G_R = Gross\ revenue, resident\ portion$

  $W = Waivers$

- **Calculate aid pools:**

  $NM = Need\ merit\ pool = 0.04 \times G_R$

  $S = SetAside = 0.05 \times (G - W - NM)$

- **Calculate net revenue:**

  $NetOp = G - W - NM - S - Addl$, **where**

  $Addl = Additional\ Aid\ Pool$ **(from OPB_AdditionalAidPool)**

Fourth: Calibration

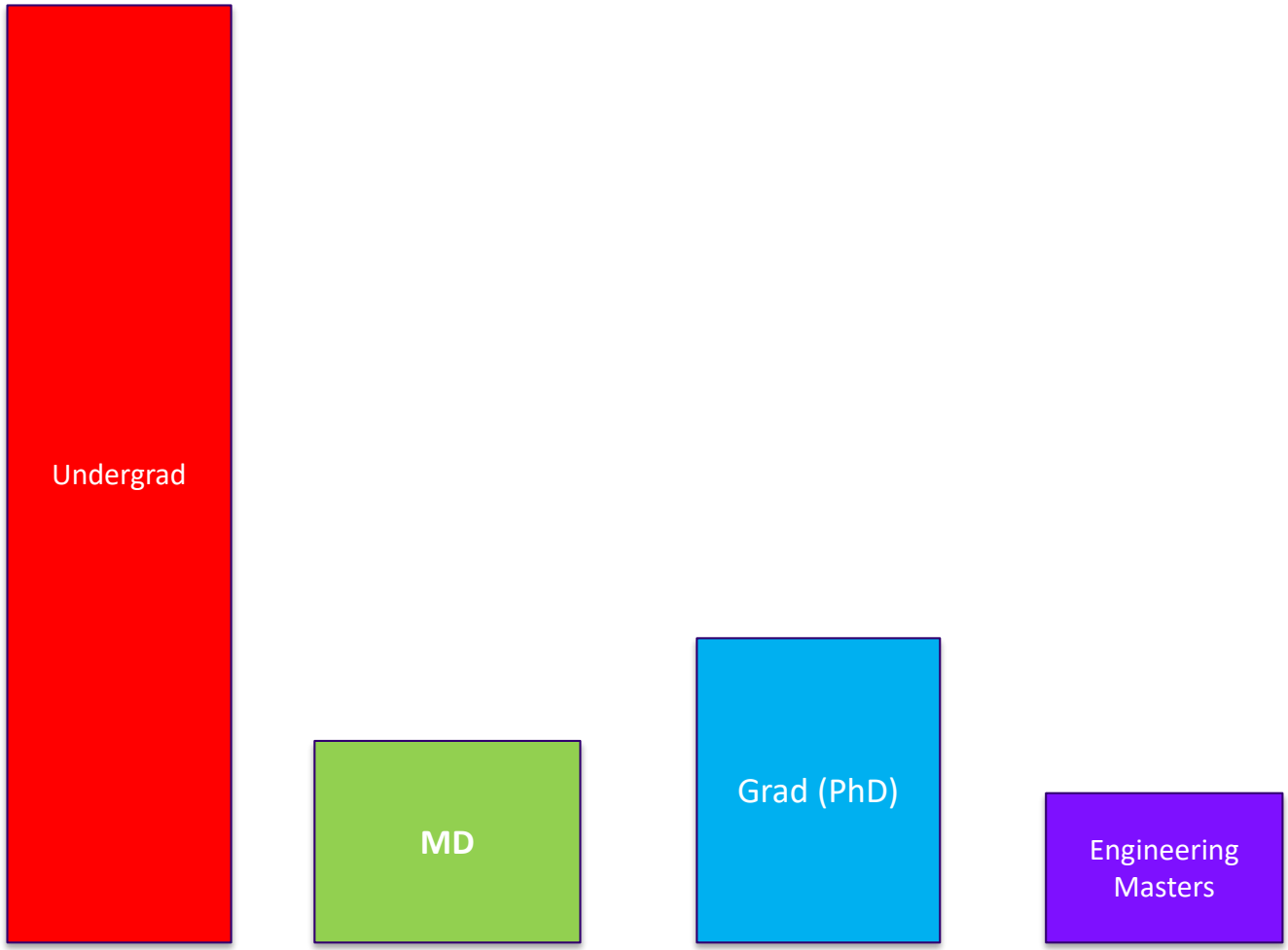
- **There is a difference between the amount of revenue we calculate and the amount we receive because:**
  - **We calculate gross revenue based on census day enrollment**
  - **People may not pay in the quarter in which they are enrolled; people from prior quarters may pay in this quarter**
- **For purposes of calculating true-up, we do calibration, which is detailed in the documentation, SQL, and Access.**
  - **Calibration factors are usually around 0.995, so it is not necessary to use the calibration factor when doing projections.**

Calculating the distribution of net revenue from each tuition group that will go to each school/college

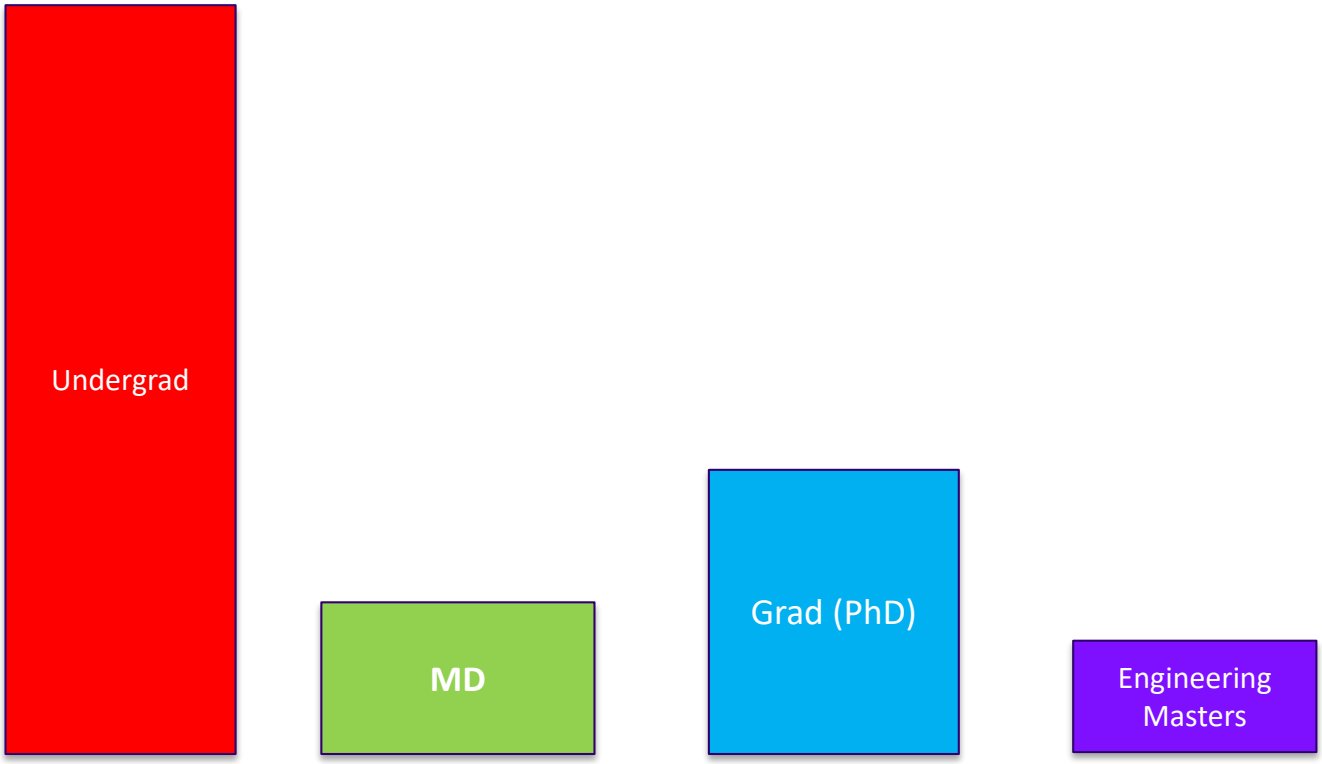
Current rules

- **70% of net operating fee revenue is distributed to units**
  - **Undergrad:**
    - **80% SCH, 20% degree majors**
  - **Grad/Professional:**
    - **80% SCH, 20% major enrollments**

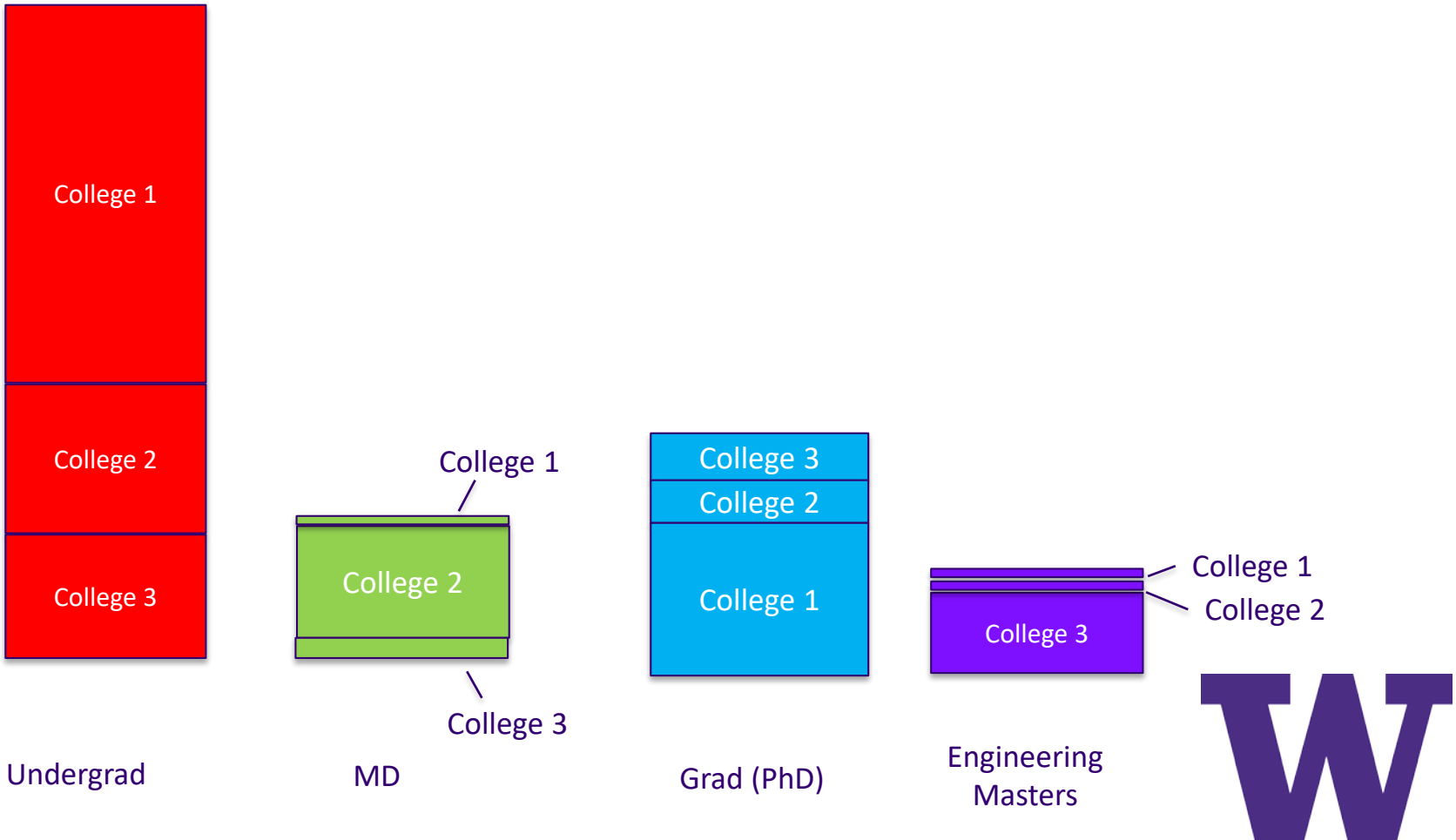
Net op fee revenue from each tuition group



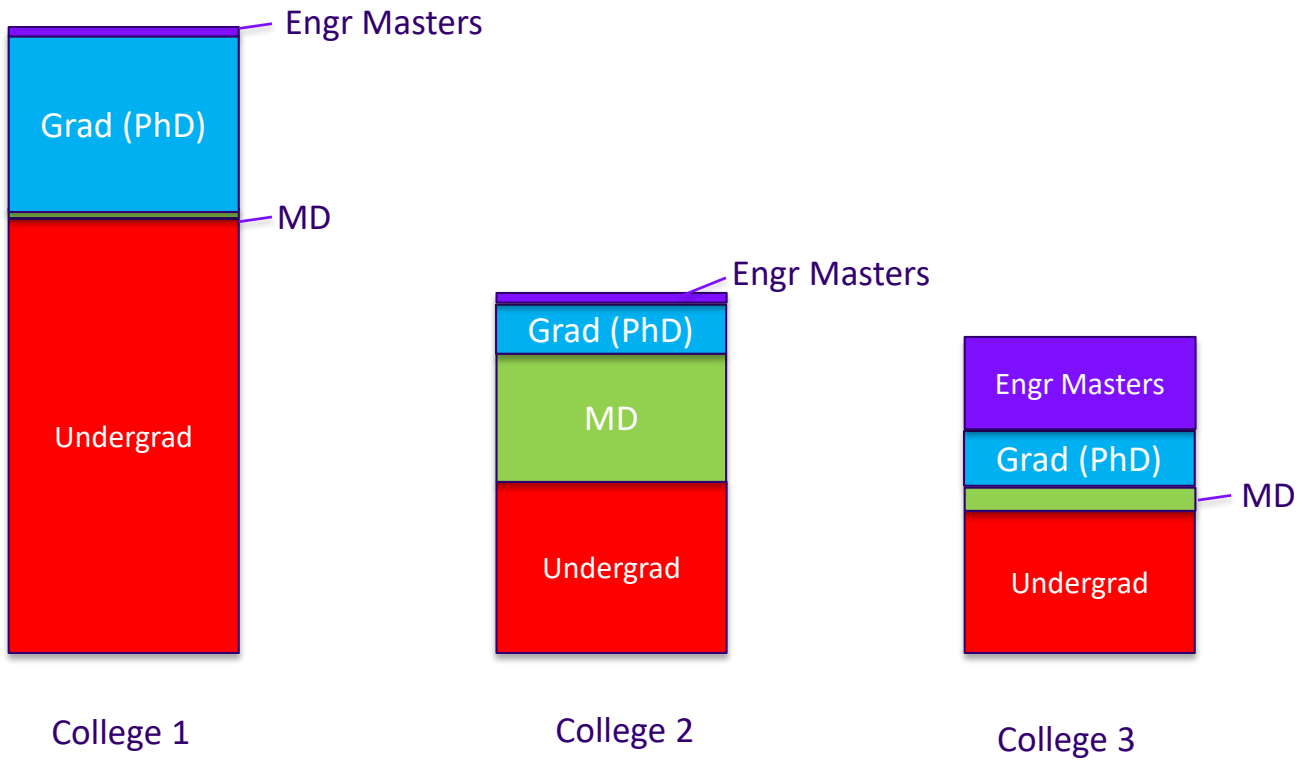
70 % of Net revenue pools



Distribution of each pool

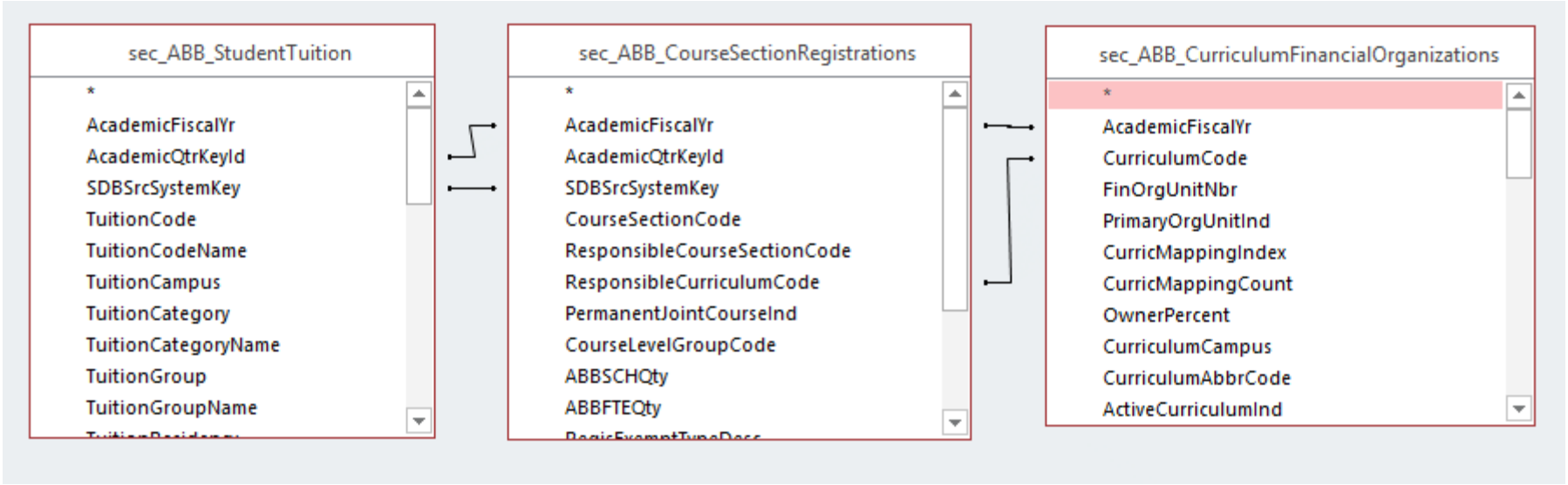


Amount to each school/college



SCH for each Tuition Group from Each Unit

Use ABB_StudentTuition, ABB_CourseSectionRegistrations, and ABB_CurriculumFinancialOrganizations



One record per student per quarter – tells us a student's tuition group

One record per student per quarter per course registration (tells us # SCH by curriculum for each student)

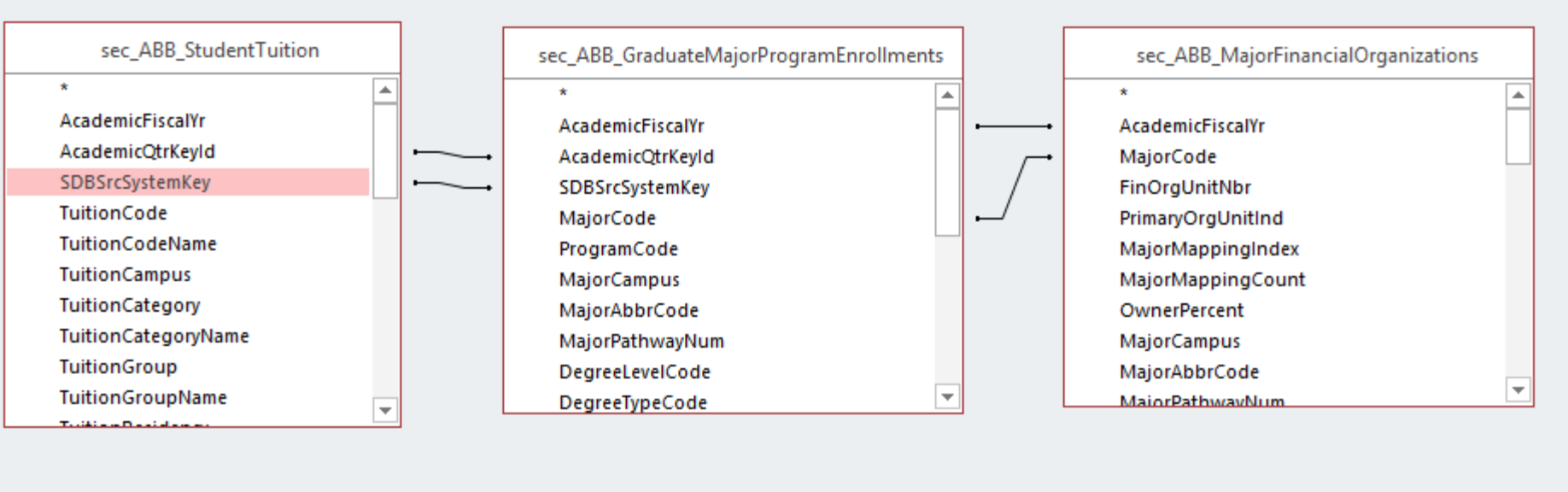
One record per AFY per curriculum to department mapping (tells us which department(s) a curriculum maps to).

% SCH

- **First get # SCH for each tuition group from each school/college (SCH)**
- **Sum total SCH for each tuition group (TotSCH)**
- **Calculate % SCH for each tuition group from each college (SCH/TotSCH)**

% Major Enrollments (grad/prof only)

Use ABB_StudentTuition, ABB_GraduateMajorProgramEnrollments, and ABB_MajorFinancialOrganizations



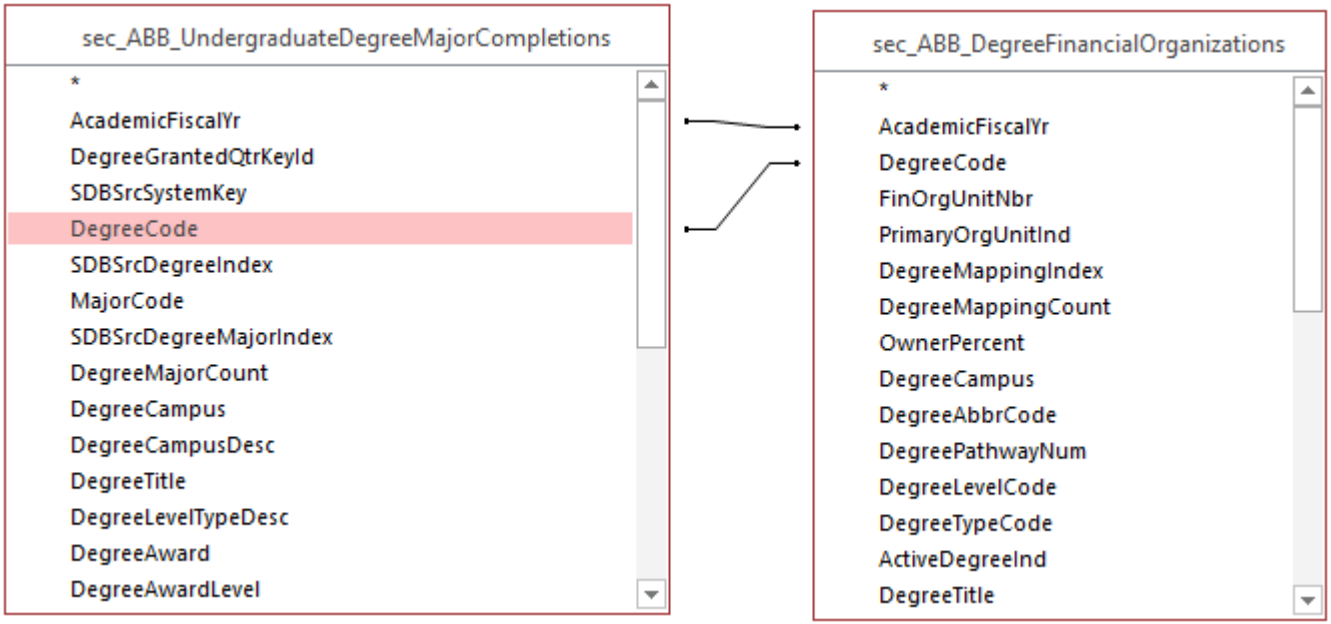
One record per student per quarter – tells us a student's tuition group

One record per grad/prof student per major enrollment.

One record per AFY per major to department mapping (tells us which department(s) a major maps to).

% Degree Majors (undergrad only)

Use ABB_UndergraduateDegreeMajorCompletions and ABB_DegreeFinancialOrganizations



One year lag: That's why code includes ABBYr

One record per student, bachelor's degree, and major

One record per AFY per degree major to department mapping (tells us which department(s) a degree maps to).

Projection basics



Projection basics

- **You may wish to look at two things:**
  - **The likely effect of enrollment changes or tuition rate changes on the net revenue pool for a given tuition group, or**
  - **The likely effect of increasing your unit's SCH production, degree majors, or major enrollments**
- **Note that these things are potentially related**
  - **Are you expecting an increase in enrollment in a given tuition group that will increase majors or SCH, or**
  - **(Undergrads) will your increase in degrees or SCH mean a reduction for another school/college?**

Effect of enrollment or tuition changes on revenue pool

Do calculation separately for each tuition category and residency combination. You will need to know:

Lever	$\Delta E = \%\ change\ in\ enrollment\ for\ tuition\ category, residency$
Lever	$\Delta T_g = \%\ change\ in\ tuition\ for\ tuition\ category, residency$
Lever	$\Delta T_r = \%\ change\ in\ resident\ portion\ of\ tuition\ for\ tuition\ category, residency$
Lever	$\Delta T_n = \%\ change\ in\ nonresident\ differential\ for\ tuition\ category, residency$
Known	$G = gross\ operating\ fee\ revenue\ in\ base\ year\ for\ tuition\ category, residency$
Known	$G_r = gross\ operating\ fee\ revenue, resident\ portion$
Known	$W_g = waivers\ in\ base\ year\ applied\ to\ operating\ fee, regardless\ of\ residency$
Known	$W_r = waivers\ applied\ to\ resident\ portion\ of\ operating\ fee$
Known	$W_n = waivers\ applied\ to\ nonresident\ operating\ fee\ differential$

IV_AnnualFullTimeTuitionSchedule will be useful

Given these values, calculate the values given enrollment and tuition changes as:

$$G' = new\ gross\ revenue = G \times (1 + \Delta E) \times (1 + \Delta T_g)$$

$$G'_r = new\ gross\ resident\ revenue = G_r \times (1 + \Delta E) \times (1 + \Delta T_r)$$

$$W = new\ total\ waiver = (1 + \Delta E) \times (W_g \times (1 + \Delta T_g) + W_r \times (1 + T_r) + W_n \times (1 + \Delta T_n)$$

Now you can calculate the need/merit pool, set-aside, and net revenue as before.

(Note that it is unknown what will happen with the additional aid pools. It is reasonable to calculate the additional aid pool for undergraduate residents as the old pool, inflated for tuition and reenrollment changes. Assume the nonresident undergraduate additional aid pool will be $12 million as of FY18, with no subsequent increases.)

Effect of SCH, degree major, or major enrollment composition changes

- **Simplest approach:**
  - **Add additional SCH, degree majors, major enrollments you expect, and**
  - **Recalculate %**
  - **Reapply final distribution calculation**
- **Undergrad/grad difference:**
  - **For undergraduates, it may be best to assume a zero-sum game**
  - **For graduate/professional students, you may wish to look at effect of change on pool *and* assess whether the distribution is likely to change.**

Connection to published projection model

- **Model found here:**

How can you use the new tables to answer additional questions?

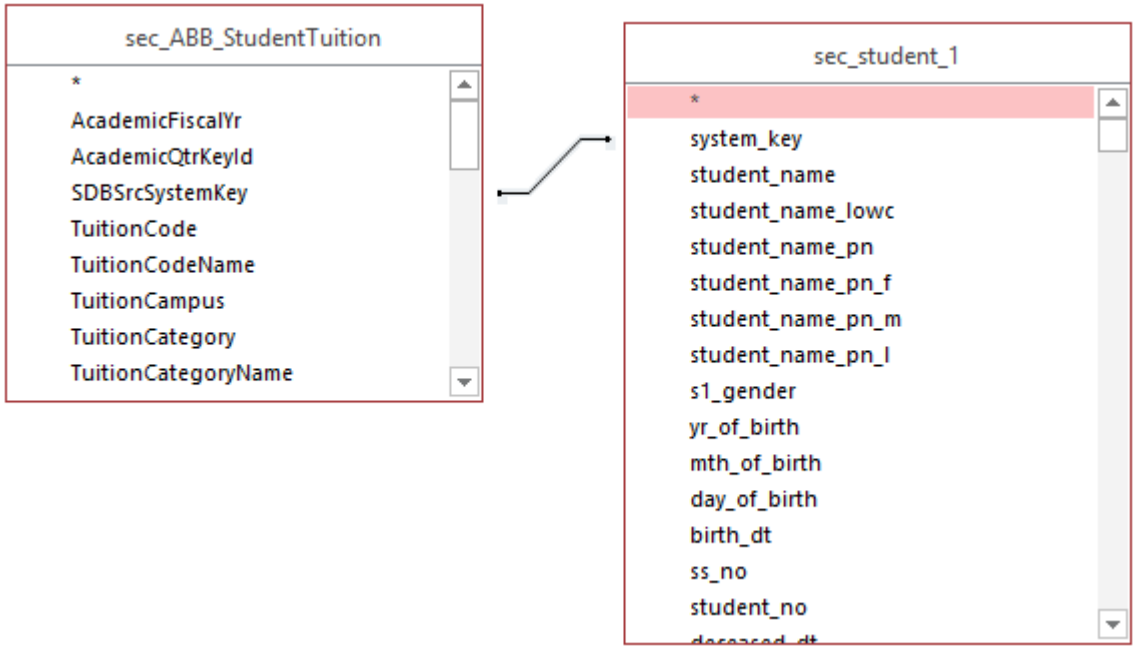
What might you want to find out?

- **My unit has its own tuition category. How can I find out which students are in that tuition category? (A)**
- **I have a student who is not in the tuition category I expect. How can I found out what tuition category they are in? (A)**
- **Which curricula, majors, and degrees are mapped to my school or college? (B)**
- **What kind of waivers (and in what amounts) do students in a given tuition category receive? (C)**
- **What unit has appointed the ASEs receiving waivers in a given tuition category? (D)**

What might you want to find out (cont.)?

- **How do I find students in a tuition category who have multiple majors? (E)**
- **Which curricula, majors, degrees map to more than one department? (F)**

Which students are in a given tuition category?



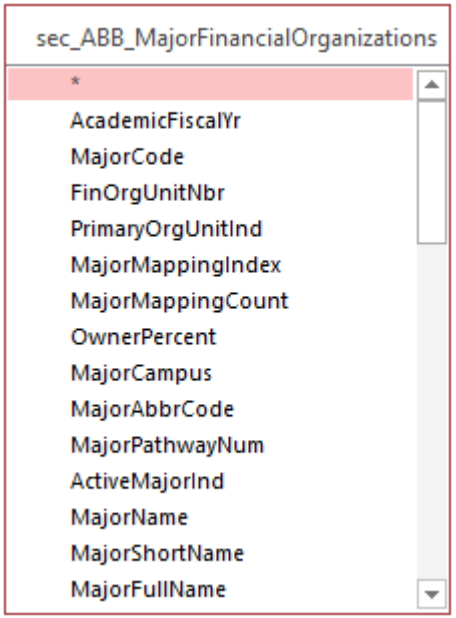
One record per student per quarter

From UWSDBDataStore in EDW. One record per student. This gives you name and student id.

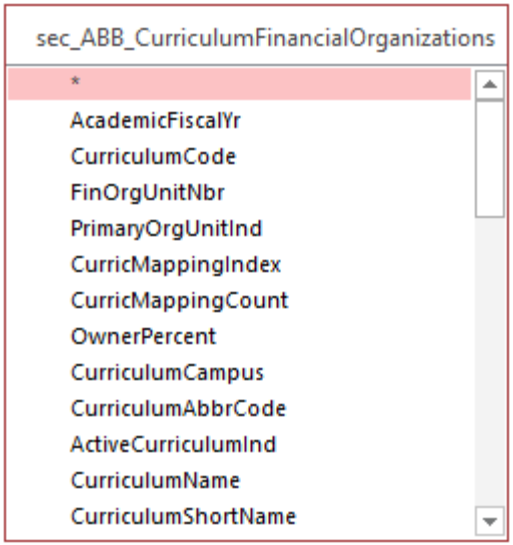
A

What curricula/majors/degrees are mapped to my unit?

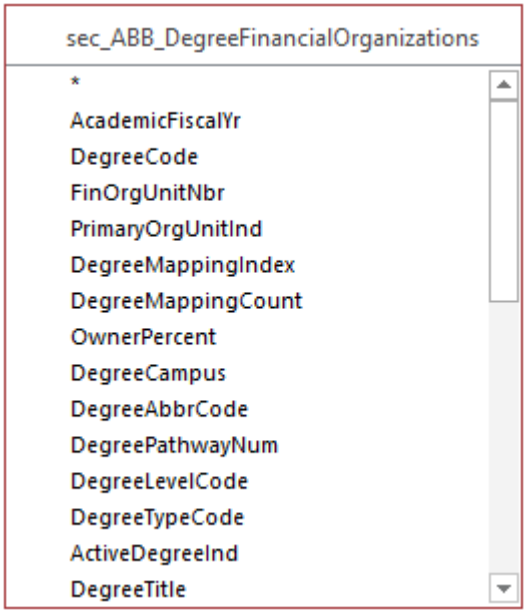
- **Choose a particular AcademicFiscalYr**
- **Select for the left 3 characters in FinOrgUnitNbr = college code**



MajorFullName



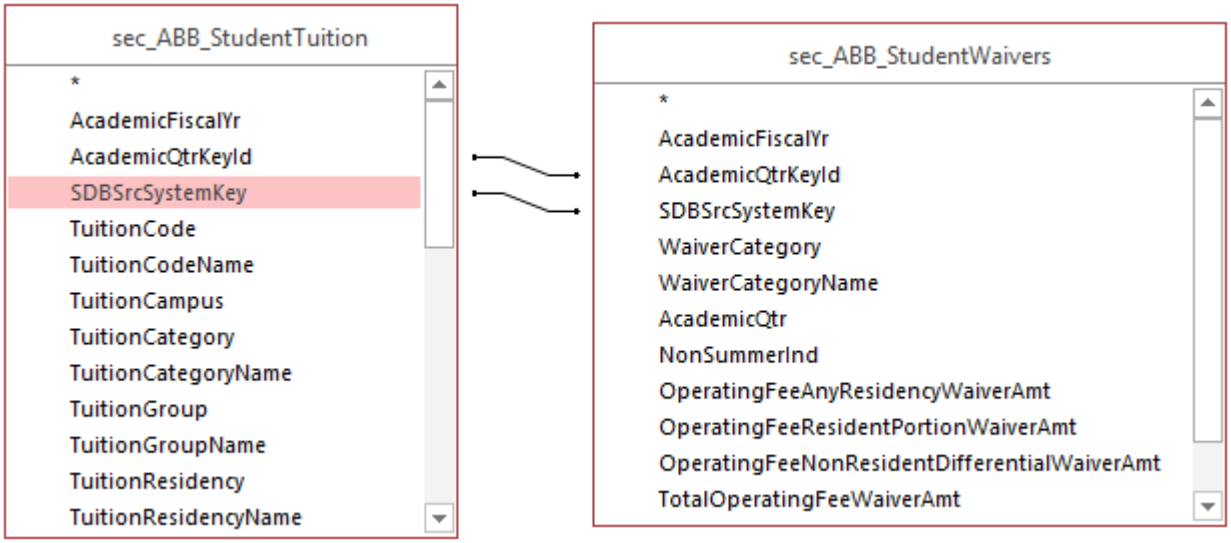
CurriculumName



DegreeTitle

B

What kinds of waivers do students in a given tuition category receive?

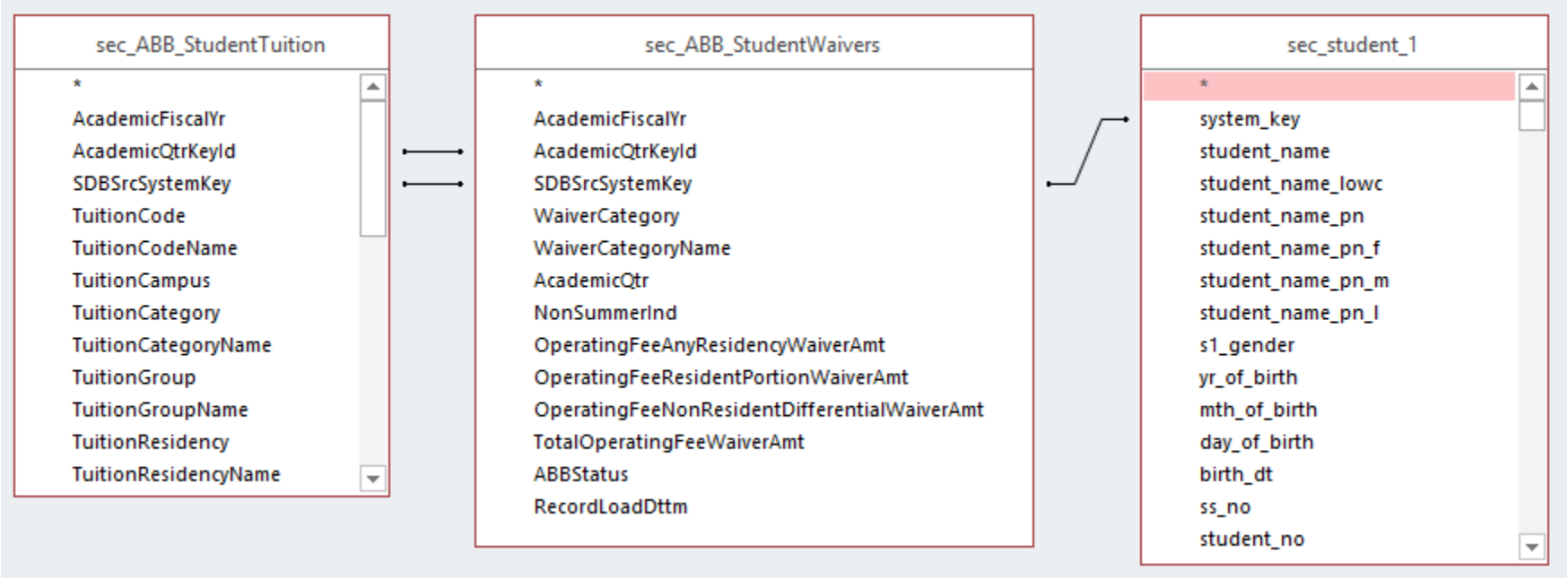


Find student/tuition group in which you are interested

Sum TotalOperatingFee WaiverAmt, group by WaiverCategory

C

How can I find out what unit has appointed a student receiving a waiver?



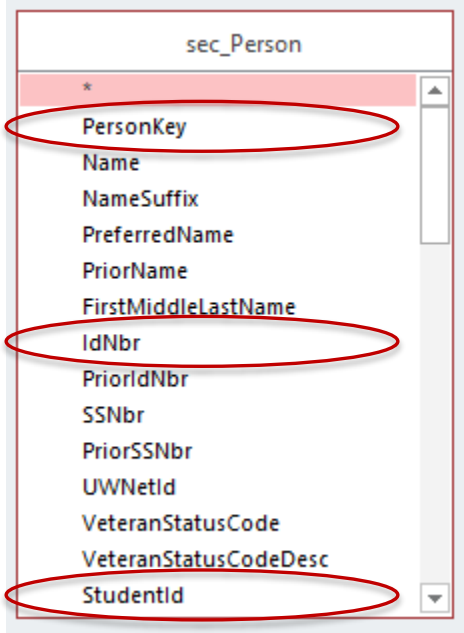
Find tuition category or group in which you are interested

Find students with TotalOperatingFee WaiverAmt>0 in WaiverCategory =1 or 2

Get Student Id #

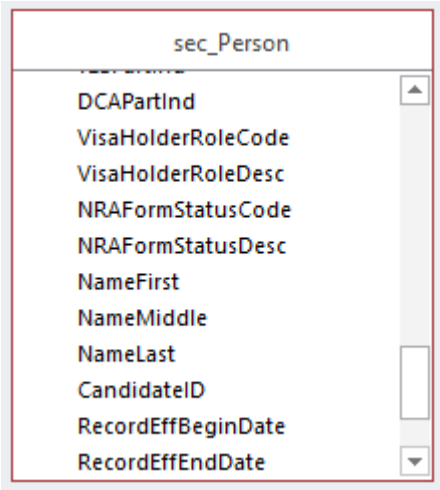
D

Connect to HR data



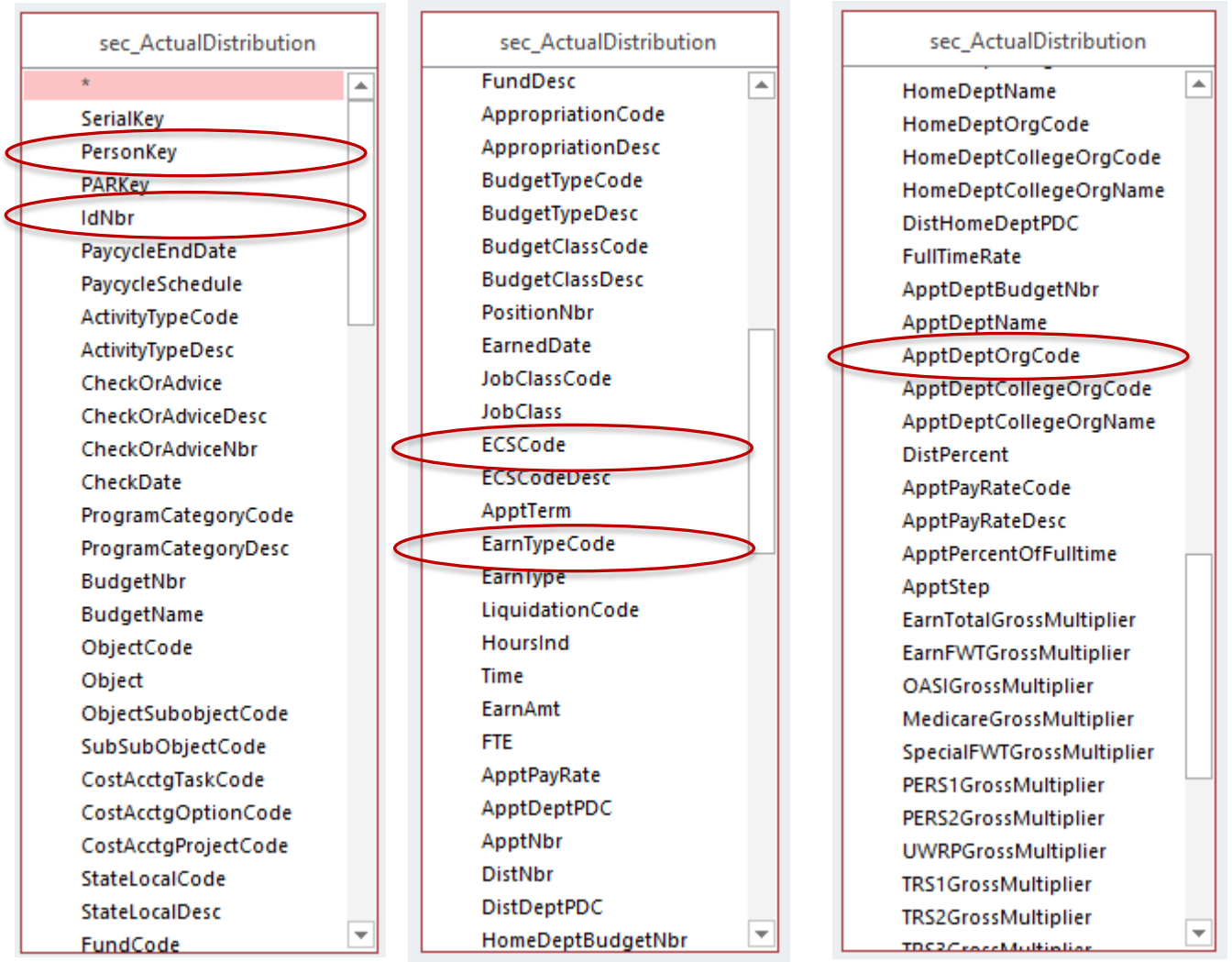
Using StudentId, get PersonKey and IDNbr from Person table in Human Resources db in EDW

(Note that, when you use HumanResources tables, you aren't dealing with snapshot tables, so you have to pay attention to RecordEffBeginDate and RecordEffEndDate)



D

Find appointing department(s)

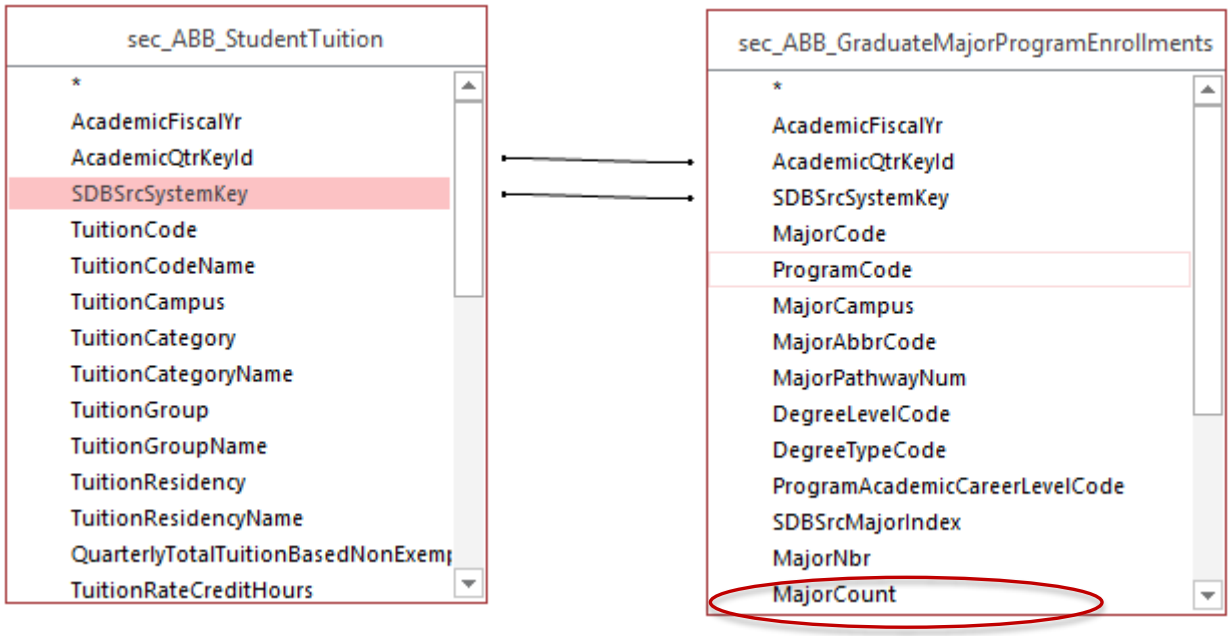


Possible approach:

- Find appointments where:
  - Where ECSCode='G'
  - EarnTypeCode Like 'G*'
  - Get school/college from left three digits of ApptDeptOrgCode
  - Could determine division between units (if >1 appointing department) on basis of FTE

D

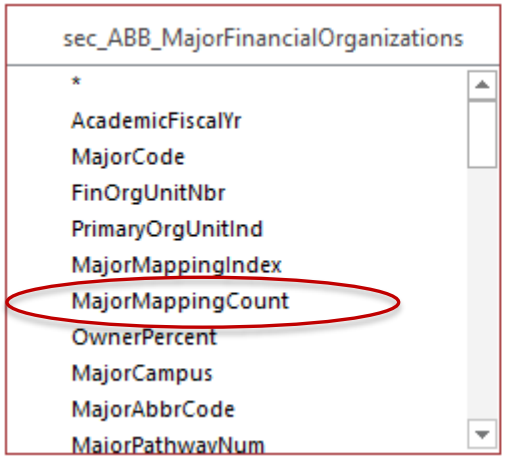
Which students have multiple majors?

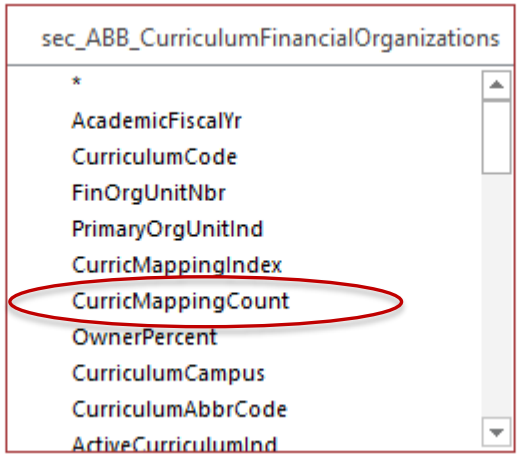


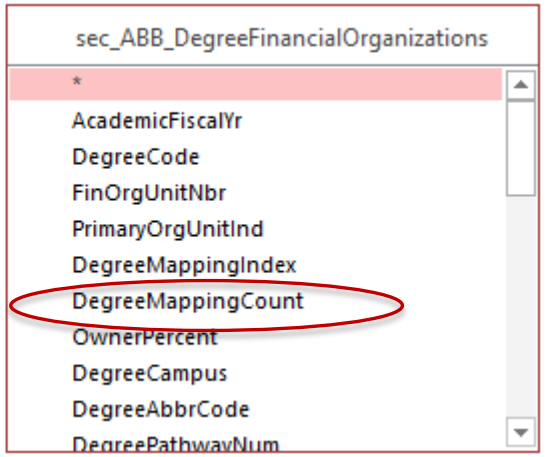
Find tuition category or group in which you are interested

Where MajorCount>1, the student has multiple major enrollments in a quarter

Which curricula, majors, degrees map to more than one department?







F

What questions do you have?