

SAS SQL for CPS snapshot dataset

Source: Corporate Personnel System (CPS) data warehouse

Database name: uc_cdw

Database server: dwp1.ucop.edu

Source schema name: Personnel

Source table name: PER_SNAP_ALL

Result table name: Snapshot_allyears

Date of run: January 27, 2021

/ This code pulls data for both the snapshot FTE and the headcount products for past decade.*/*

/ This runs a macro to handle each year individually*/*

%macro YearCycle;

%do yr = 2011 %to 2020;

PROC SQL;

/ This table prepares data as sequence of April/October payroll snapshots with FTE and unduplicated headcount information.*/*

create table Snapshot_Raw_&yr as

select

```
    eff_date,  
    academic_rank_code,  
    appt_pay_rate,  
    appt_rate_code,  
    location_1,  
    location_2,  
    location_3,  
    empl_bus_unit,  
    loc_indicator,  
    loc_ind_description,  
    employment_status_code,  
    employee_number,  
    empl_emplid,  
    cat(location_1, employee_number) as unique_id,
```

cat(location_1, cat(employee_number, eff_date)) as unique_id_effdate,
pers_pgm,
personnel_program,
Function_code,
function_name,
fund_group_code,
fund,
class_ttl_outl_code_appt,
class_ttl_outl_name_appt,
class_ttl_outl_code_appt1,
TRIM(Org_1_Code) as org_1_code,
org_1_Title,
TRIM(Org_2_Code) as org_2_code,
Org_2_Title,
TRIM(Org_3_Code) as org_3_code,
Org_3_Title,
ethnic_origin_code,
IPEDS_hispanic_flag,
IPEDS_ethnic_origin_1_code,
IPEDS_ethnic_origin_1_name,
IPEDS_ethnic_origin_2_code,
IPEDS_ethnic_origin_3_code,
IPEDS_ethnic_origin_4_code,
IPEDS_ethnic_origin_5_code,
Citizenship_Status_Code,
visa_type,
country_of_origin,
sex_code,
age,
TRIM(payroll_title_unit_rep_code) as payroll_title_unit_rep_code,
empl_unit_code,
paid_over_code,
paygroup,
appt_basis_code,
academic_appt_basis_code,
appt_type_code,
appt_type_code_pri,
dos_code_cps,
dos_desc_cps,
dos_code_pps,
title_code,
title_name,
title_code_pri_appt,
primary_job_ind,
Home_Department_Name,
Home_Department_Code,
cat(location_1, TRIM(Home_Department_Code)) as unique_home_dept,

```
input(UAS_Discipline_Code, BEST12.) as UAS_Discipline_Code_num format = BEST12.,
UAS_Discipline_Name,
SAU_code,
standard_occup_class_code,
date_of_most_recent_hire,
retirement_system_code,
years_of_service,
APPT_DEPT_CD,
APPT_DEPT_NAME,
```

/*Sums Earnings while excluding for certain DOS codes*/

```
sum(case when dos_code_cps in ('XX', 'LV', 'DB', 'DS') then 0 else gross_earnings_pay_per end) as
Earnings_Monthly format = n.2,
```

/*Sums FTE, with an exclusion for some miscoded data at Irvine in 2015*/

```
sum(case when check_date in ('1DEC2015'd) and location_1 = '09' then 0 else time_distrib_actual end)
as FTE_All format = n.3,
```

/*Turns Paid Over Code into a number and fills in 12 for nulls*/

```
input(paid_over_code, n.0) as Paid_over_num format = n.0,
case when missing(calculated paid_over_num) then 12 else calculated paid_over_num END as
Paid_over_full,
```

/*Turns Apt Basis Code into a number and fills in 12 for nulls*/

```
input(appt_basis_code, n.0) as appt_basis_num format = n.0,
case when missing(calculated appt_basis_num) then 12 else calculated appt_basis_num END as
appt_basis_full,
```

/*CTO code fix*/

```
CASE
  WHEN TRIMN(title_code) in
('002743', '002744', '002745', '002746', '002747', '002749', '002750', '002753', '002754', '002757', '002758')
THEN '446'
  WHEN TRIMN(title_code) in ('003602', '003603', '003604', '003605', '003606', '003607') THEN '621'
  WHEN TRIMN(title_code) = '002382' THEN '456'
  WHEN TRIMN(title_code) = '002442' THEN '928'
  WHEN TRIMN(title_code) in
('004560', '004563', '004564', '004565', '004568', '004534', '004533', '004535', '004536', '004538') THEN 'A30'
  WHEN TRIMN(title_code) in ('005840', '005836', '005837', '005838', '004412') THEN 'A35'
  WHEN TRIMN(title_code) in ('004515', '004516', '004517') THEN 'A25'
  WHEN TRIMN(title_code) in ('006290', '006291', '006292', '006293', '006294', '006295') THEN 'A15'
  WHEN TRIMN(title_code) in
('004151', '004152', '004153', '004154', '009453', '009454', '009455', '009456', '009457', '009458', '009459', '0
09460') THEN 'A10'
  WHEN TRIMN(title_code) in ('004919', '004920', '004921', '004922') THEN 'B15'
  WHEN TRIMN(title_code) in ('006632', '007237', '007236', '007234', '007235', '006550') THEN 'F20'
```

```
WHEN TRIMN(title_code) in
('008184','008185','008186','008187','008189','008188','008190','008191','008192','008193','008194','0
08195','008196','008197','008198','008199','008200','008201','008202','008203','008204','008205','008
206','008207','008208','008209','008210','008211','008212','008213','008214','008215','008216','00821
7','008218','008219','008220','008221','008222','008223','008224','008225','008226','008227','008228','
008229','008230','008231','008232','008234','008233','008235','008236','008237','008238','008239','00
8240','008241','008242','008243','008244','008245','008246','008247','008248','008249','008251','0082
50','008252','008253','008254','008255','008256','008257','008258','008259','008260','008261','008262',
'008263','008265','008264','008266','008267','008268','008269') THEN 'G15'
WHEN TRIMN(title_code) in
('005110','005111','005112','005113','005114','005115','005116','005117') THEN 'G35'
WHEN TRIMN(title_code) in
('009609','009610','009611','009612','009613','009614','009615','009616','009617','009618','009619')
THEN 'I20'
WHEN TRIMN(title_code) in ('006508','006542','006480','006489','006854') THEN 'H35'
WHEN TRIMN(title_code) in
('006606','006607','006500','006504','006505','006506','006507','000245') THEN 'M10'
WHEN TRIMN(title_code) = '007359' THEN 'F10'
WHEN TRIMN(title_code) = '006608' THEN 'H20'
WHEN TRIMN(title_code) in ('009558','009976') THEN 'H65'
WHEN TRIMN(title_code) = '006601' THEN 'H80'
WHEN TRIMN(title_code) = '001011' THEN 'S21'
WHEN TRIMN(title_code) = '000164' THEN 'M05'
WHEN TRIMN(title_code) = '000332' THEN 'M20'
WHEN (eff_date = 'OCT2009' and location_1 = '01' and TRIMN(title_code) in
('000209','000212','000213','000214','000215','000220','000245','000280',
'000302','000303','000304','000305','000307','000308','000309','000310',
'000311','000312','000313','000314','000315','000316','000317','000318',
'000319','000320','000321','000322','000323','000324','000325','000327',
'000329','000334','000336','000337','000344','000349','000350','000351',
'000355','000360','000361','000373','000375','000376','000381','000382',
'000389','000390','000391','000392','000394','000395','000398','000403',
'000404','000408','000410','000413','000414','000417','000419','000421',
'000422','000423','000424','000429','000436','000437','000439','000441',
'000444','000445','000457','000458','000459','000460','000464','000465',
'000466','000467','000468','000471','000473','000474','000475','000479',
'000481','000483','000485','000487','000494','000515','000519','000524',
'000525','000541','000547','000548','000549','000550','000552','000556',
'000559','000564','000567','000568','000569','000570','000572','000573',
'000574','000575','000594','000607','000608','000609','000614','000616',
'000617','000621','000624','000625','000626','000630','000631','000649',
'000650','000651','000656','000666','000667','000668','000669','000670',
'000671','000672','000673','000675','000677','000678','000680','000682',
'000688')) THEN 'M10'
ELSE class_ttl_outl_code_appt
END as class_ttl_outl_code_appt,
```

/* Assigns Names to Location 1*/

```
Case
  When location_1 = '01' then 'Berkeley'
  When location_1 = '02' then 'San Francisco'
  When location_1 = '03' then 'Davis'
  When location_1 = '04' then 'Los Angeles'
  When location_1 = '05' then 'Riverside'
  When location_1 = '06' then 'San Diego'
  When location_1 = '07' then 'Santa Cruz'
  When location_1 = '08' then 'Santa Barbara'
  When location_1 = '09' then 'Irvine'
  When location_1 = '10' then 'Merced'
  When location_1 = '18' then 'Agriculture & Natural Resources'
  When location_1 = '25' then 'ASUCLA'
  Else 'Unassigned'
END as Location_1_Name,
```

/* This logic uses location 2, location 1, SAU code, and business unit to separate UCOP and ANR and create a complete location field called "Location Full"*/

```
CASE
  When empl_bus_unit = 'BKCMP' then 'Berkeley'
  When empl_bus_unit = 'DVCMP' OR empl_bus_unit = 'DVMED' then 'Davis'
  When empl_bus_unit = 'SFCMP' OR empl_bus_unit = 'SFMED' then 'San Francisco'
  When empl_bus_unit = 'LACMP' OR empl_bus_unit = 'LAMED' then 'Los Angeles'
  When empl_bus_unit = 'RVCMP' then 'Riverside'
  When empl_bus_unit = 'SDCMP' OR empl_bus_unit = 'SDMED' then 'San Diego'
  When empl_bus_unit = 'SCCMP' then 'Santa Cruz'
  When empl_bus_unit = 'SBCMP' then 'Santa Barbara'
  When empl_bus_unit = 'IRCMP' OR empl_bus_unit = 'IRMED' then 'Irvine'
  When empl_bus_unit = 'MECMP' then 'Merced'
  When empl_bus_unit = 'UCANR' then 'Agriculture & Natural Resources'
  When empl_bus_unit = 'ASLA1' then 'ASUCLA'
  When empl_bus_unit = 'UCOP1' then 'Office of the President & SWP'
  When (location_2 = '2' and sau_code = '4') THEN 'Agriculture & Natural Resources'
  When (location_2 = '2' and location_1 <> '25' and sau_code <> '4') THEN 'Office of the
President & SWP'
  Else calculated location_1_Name
END as Location_full,
```

/*Flags AAU campuses*/

```
Case
  When calculated Location_full in ('Berkeley','Davis','Irvine','Los Angeles','ASUCLA','San
Diego','Santa Barbara','Santa Cruz') then 'AAU'
  Else 'Non-AAU'
End as AAU_Campus_Flag,
```

/*General Campus/UC Health split, using loc 3, CTO, org titles, and home department code to correct for campus miscategorizations*/

```

CASE
    WHEN SUBSTRN(empl_bus_unit,3,3) = 'MED' THEN 'UC Health'
    WHEN (empl_bus_unit = 'UCOP1' AND TRIM(Home_Department_Code) = '820600')
THEN 'UC Health'
    WHEN (empl_bus_unit = 'SDCMP' AND SUBSTR(Home_Department_Code,1,3)='003')
THEN 'UC Health'
    WHEN (empl_bus_unit = 'SDCMP' AND SUBSTR(Home_Department_Code,1,3)='002')
THEN 'UC Health'
    WHEN (empl_bus_unit = 'SDCMP' AND SUBSTR(Home_Department_Code,1,4)='0003')
THEN 'UC Health'
    WHEN (empl_bus_unit = 'BKCMP' AND TRIM(Home_Department_Code) in
('BOOPT','BPOPC','BQRES','CKGEN','CQADM')) THEN 'UC Health'
    WHEN (empl_bus_unit = 'RVCMP' AND
        TRIM(Home_Department_Code) in
('D01059','D02000','D02001','D02002','D02003','D02004','D02005','D02007','D02010','D02011','D02012',
'D02013','D02014','D02015','D02016','D02017','D02018','D02019','D02020')) THEN 'UC Health'
    When LOCATION_3 = '2' or class_ttl_outl_code_appt = '446' THEN 'UC Health'

```

/*Fixes for Irvine, Riverside, Los Angeles, and San Diego*/

```

    When LOCATION_3 = '1' AND (
        (LOCATION_1 = '09' AND TRIM(ORG_1_CODE) in
('99030','9MEDC','92000','99701')) OR
        (LOCATION_1 = '05' AND TRIM(ORG_1_CODE) = '5ORG40') OR
        (LOCATION_1 = '04' AND TRIM(ORG_1_CODE) in
('44000','42200','43200')) OR
        (LOCATION_1 = '06' AND TRIM(ORG_1_CODE) in ('6000003','6
3','6000005','6 5','60003','60008','6000008','60005')) OR
        (LOCATION_1 = '06' AND SUBSTR(Home_Department_Code,1,3)='003')
    OR
        (LOCATION_1 = '06' AND
SUBSTR(Home_Department_Code,1,4)='0003')) THEN 'UC Health'
    When (calculated Location_full = 'Office of the President & SWP' AND
TRIM(ORG_2_CODE) in ('48610','48620')) THEN 'UC Health'
    When (empl_bus_unit = 'UCOP1' AND TRIM(ORG_2_CODE) in ('48610','48620')) THEN
'UC Health'
    Else 'General Campus'
END as Service_focus,

```

/*Med Center Breakout by function*/

```

Case
    When function_code = '42' and calculated Service_focus = 'UC Health' Then 'Med Center'
    Else 'Non-Med Center'
End as MedCntr_breakout_Func42,

```

/*Creates DOS flag for only Base FTE Codes*/

```
Case
    When dos_code_cps in ('AW','AV','AX','AM','HR','HD','HY','NG') Then 'Base'
    Else 'Non-Base'
End as DOS_BaseFTE,
```

/*Creates DOS flag for only Regular FTE Codes*/

```
Case
    When dos_code_cps in ('AW','AV','AX','AM','HR','HD','HY','RT','NG') Then 'Regular'
    Else 'Non-Regular'
End as DOS_RegularFTE,
```

/*Creates DOS flag for only Base Earnings Codes*/

```
Case
    When dos_code_cps in ('AW','AV','AX','AM','HR','HD') Then 'Base'
    Else 'Non-Base'
End as DOS_BaseEarnings,
```

/*Creates FTE for only base pay codes*/

```
Case
    When calculated DOS_BaseFTE = 'Non-Base' Then 0
    Else calculated FTE_All
End as FTE_Base format = n.3,
```

/*Creates FTE for only regular pay codes*/

```
Case
    When dos_code_cps not = 'Non-Regular' Then 0
    Else calculated FTE_All
End as FTE_Regular format = n.3,
```

/*This statement flags if the title codes we choose as primary are the same as the primary title code in CPS*/

```
case
    When title_code <> title_code_pri_appt THEN 'Non-primary CPS'
    Else 'Primary CPS'
End as Primary_Title_CPS_flag,
```

/*fills in blanks for appt_type_code using appt_type_code_pri and creates new field appt_type_use*/

```
Case
    When appt_type_code = '' THEN appt_type_code_pri
    Else appt_type_code
End as Appt_type_use,
```

/* sorts appt_type_code in career/non-career and creates new field*/

```
Case
    When personnel_program = 'A' then 'Academic'
```

```
When calculated appt_type_use in ('2','7') THEN 'Career Staff'  
Else 'Non-career'  
End as Appt_career,
```

```
/*Personnel Program Academic and Non-Academic Grouping*/
```

```
case
```

```
When personnel_program = 'A' Then 'Academic'  
Else 'Non-Academic'  
End as Pers_Prgm_Academic,
```

```
/*Personnel Program Categories breaks managers out from senior professionals in MSP, breaks students  
out from PSS, and for several years some employees were miscategorized with the CTO of M05, which is  
used for those in the SMG personnel program when they should have been in the 'Managers' CTO of  
M10.*/
```

```
Case
```

```
When class_ttl_outl_code_appt in  
( '010','011','012','030','031','040','041','042','114','124','210','211','212','214','218','224','520','521','522','  
530','531','532') THEN 'Faculty - Ladder-rank and Equivalent'  
When class_ttl_outl_code_appt in ('311','317','323','335','341') THEN 'Faculty - Clinical/In-  
Residence/Adjunct'  
When class_ttl_outl_code_appt in ('221','225','357') THEN 'Faculty - Lecturers'  
When class_ttl_outl_code_appt = '446' THEN 'Medical Interns/Residents'  
When class_ttl_outl_code_appt in ('575','577') THEN 'Postdoctoral Scholars'  
When class_ttl_outl_code_appt in ('426','436','456','467','477') THEN 'Student  
Teaching/Research Assistants'  
When calculated Pers_Prgm_Academic = 'Academic' then 'Other Academic Employees'  
When calculated appt_type_use = '4' THEN 'Student Staff'  
When class_ttl_outl_code_appt = 'M10' THEN 'MSP - Managers'  
When PERS_PGM = 'MSP' AND class_ttl_outl_code_appt = 'M05' THEN 'MSP - Managers'  
When PERS_PGM = 'SMG' or Personnel_program = '3' or class_ttl_outl_code_appt = 'M05' THEN  
'Senior Management Group'  
When PERS_PGM = 'MSP' or personnel_program = '2' THEN 'MSP - Senior Professionals'  
else 'PSS - Non-Students'  
END as Pers_Prgm_CTO,
```

```
/*Groups employee CTO categories above*/
```

```
Case
```

```
when calculated Pers_prgm_CTO in ('Faculty - Ladder-rank and Equivalent','Faculty - Clinical/In-  
Residence/Adjunct','Faculty - Lecturers') then 'Faculty'  
when calculated Pers_prgm_CTO in ('MSP - Managers','Senior Management Group') then  
'Management'  
when calculated Pers_prgm_CTO in ('Student Staff','Student Teaching/Research Assistants') then  
'Student Employees'  
when calculated Pers_prgm_CTO in ('MSP - Senior Professionals','PSS - Non-Students') then  
'Non-Management Staff'  
else 'Non-Faculty Academics'  
END as Pers_Prgm_CTO_groups,
```

```
/* Creates flag for IPEDS Occupational category*/
```

```
Case
  When class_ttl_outl_code_appt in
('010','011','012','030','031','040','041','042','114','124','311','317','323','335','341','723','728','729')
THEN 'Instruction/Research/Public Service'
  When class_ttl_outl_code_appt in ('210','211','212','214','221','224','225','357') then
'Instruction'
  When class_ttl_outl_code_appt = '928' and title_code in
('1650','1675','1676','1958','1968','2460','2461','2500','2510','2520','2521') then 'Instruction'
  When class_ttl_outl_code_appt in ('541','542','543','551','557','566','575','577','581','583') then
'Research'
  When class_ttl_outl_code_appt in ('520','521','522','523','524','530','531','532','533','534') then
'Astronomers/Agronomists'
  When class_ttl_outl_code_appt in ('426','436','446','456','467') then 'Graduate Assistants'
  When class_ttl_outl_code_appt in ('621','623','627') then 'Librarians'
  When class_ttl_outl_code_appt in ('825','828') then 'Public Service'
  When class_ttl_outl_code_appt = '928' and title_code in ('2650','2651') then 'Public Service'
  When class_ttl_outl_code_appt in ('S21','S24','S26','S27','S31','S34','S44','S46','S56','S61','S64')
then 'Management'
  /*S56 Acad PRG MGT OFCR 3 moved into F20 so no longer part of Management*/
  When calculated Pers_Prgm_CTO = 'Senior Management Group' then 'Management'
  When class_ttl_outl_code_appt = '927' and title_code in ('3650','3651','3652') then
'Management'
  When class_ttl_outl_code_appt = '928' and title_code in
('0800','0801','0802','0803','0806','0810','0811','0812','0880','1044','1045','1055','1057','1059','3340','38
02','3803','3804','3999') then 'Management'
  else 'Exclude'
  END as IPEDS_Occ_Cat_Flag,
```

```
/* Creates flag for faculty CTOs according to the Academic Personnel Manual (APM)*/
```

```
Case
  When class_ttl_outl_code_appt in
('010','011','012','030','031','040','041','042','114','124','210','211','212','214','218','221','224','225','311','
317','323','335','341','357') THEN 'Faculty (excl. Astro/Agro)'
  When class_ttl_outl_code_appt in ('520','521','522','523','524','530','531','532','533','534') then
'Agronomist/Astronomer'
  else 'Exclude'
  END as Faculty_APM_Flag,
```

```
/* Flags Faculty as Tenure, Tenure-Track, SOE, PSOE or NonTenure */
```

```
Case
  When calculated Faculty_APM_Flag <> 'Exclude' Then
  Case
    When class_ttl_outl_code_appt in ('010','030','040','520','530') then 'Tenured'
    When class_ttl_outl_code_appt in ('011','031','041','214','521','524','531','534')
then 'Tenure-track'
```

```
When class_ttl_outl_code_appt in ('114','124') then 'Tenure-Track Acting'  
When class_ttl_outl_code_appt = '210' then 'SOE'  
When class_ttl_outl_code_appt in ('211','221','224') then 'PSOE'  
Else 'Non-tenure track'  
End  
Else 'Non-Faculty'  
End as Tenure_Flag,
```

/*Academic Senate Flag*/

```
Case  
When calculated Pers_Prgm_Academic = 'Academic' and class_ttl_outl_code_appt in  
( '010','011','012','114','210','212','211','311','317') THEN 'Senate'  
When calculated Pers_Prgm_Academic = 'Academic' THEN 'Non-Senate'  
Else 'NA'  
END as Senate_Flag,
```

/*Flags Excluded Groups (Emeriti, Supp Pay, etc.)*/

```
Case  
When class_ttl_outl_code_appt in ('016','216','316','346','999') Then 'Exclude'  
Else 'Include'  
End as HC_Include_Flag,
```

/*Flag for Provosts, Chancellors, Deans, etc.*/

```
Case  
When TITLE_CODE = '000030' THEN 'Chancellor'  
When class_ttl_outl_code_appt = 'S27' THEN 'Provost'  
When class_ttl_outl_code_appt = 'S21' THEN 'Dean'  
Else 'None'  
END as Campus_Leaders,
```

/*Appointment Pay Rate calculation based on the nature of the rate of pay for the appointment. */

```
Case  
When appt_rate_code = 'H' Then (appt_pay_rate*2088)  
When appt_rate_code = 'M' Then (appt_pay_rate *12)  
Else appt_pay_rate  
End as Annual_Appt_Pay_Rate format = n.2,
```

/*Fund Categories*/

```
Case  
When TRIM(fund_group_code) in ('401','402','40411') THEN 'General Funds'  
When TRIM(fund_group_code) in  
( '40311','40312','403141','403142','403143','403144','403145','403146','403147','403148','403149','403  
15','403151','403152','403153','4032') THEN 'Student Tuition & Fees'  
When FUND = '69085' THEN 'Systemwide Assessment'  
ELSE 'Non-Core Funds'
```

END as Fund_Categories,

/*Fund Core vs NonCore*/

Case

When calculated Fund_Categories = 'Non-Core Funds' or calculated Fund_Categories =
'Systemwide Assessment' then 'Non-Core Funds'
ELSE 'Core Funds'
END as Fund_Core,

/*Detailed Fund Categories for AAUDE survey*/

Case

When TRIM(fund_group_code) in ('401','402') THEN 'General Funds'
When TRIM(fund_group_code) in ('4111','4112') THEN 'Reserves'
When TRIM(fund_group_code) in
('40311','40312','40313','403141','403142','403143','403144','403145','403146','403147','403148','403149',
'40315','403151','403152','403153','403161','403162','403163','403164','40319','4032','4034') THEN
'Student Tuition & Fees'
When TRIM(fund_group_code) in ('40411','40412') THEN 'State Appropriations'
When TRIM(fund_group_code) in ('40421','40422') THEN 'State Govt Contracts & Grants'
When TRIM(fund_group_code) in ('40521','40522') THEN 'Local Govt Contracts & Grants'
When TRIM(fund_group_code) in
('4061','40611','40621','40623','40622','40631','40634','40632','40633','41021','41025') THEN 'Federal
Govt Contracts & Grants'
/*When TRIM(fund_group_code) = '41029' and calculated Fund_Categories <> 'Systemwide
Assessment' THEN 'Federal Govt Contracts & Grants' // Removed from April 2020 onwards*/
When TRIM(fund_group_code) in
('4071','4073','40721','40722','40723','4081','4082','301','302','303','304') THEN 'Endowment Funds'
When TRIM(fund_group_code) in ('4083','40841','40842','40843') THEN 'Private Contracts &
Grants'
When TRIM(fund_group_code) in ('40911','40912','40913','40914','40919','4092','4093') THEN
'Sales & Service'
ELSE 'Other Operating Funds'
END as Fund_Categories_Details,

/*Ethnic Origin Groups based on CPS data dictionary and utilizing IPEDS flags and codes (updated on
2/5/2019)*/

Case

when IPEDS_hispanic_flag = 'Y' THEN 'Hispanic'
when CATS(IPEDS_ethnic_origin_1_code, IPEDS_ethnic_origin_2_code,
IPEDS_ethnic_origin_3_code, IPEDS_ethnic_origin_4_code, IPEDS_ethnic_origin_5_code) in ('AA', 'AAA',
'AAAA', 'AAAAA') THEN 'Black'
when CATS(IPEDS_ethnic_origin_1_code, IPEDS_ethnic_origin_2_code,
IPEDS_ethnic_origin_3_code, IPEDS_ethnic_origin_4_code, IPEDS_ethnic_origin_5_code) in ('CC', 'CCC',
'CCCC', 'CCCCC') THEN 'American Indian'

```

        when CATS(IPEDS_ethnic_origin_1_code, IPEDS_ethnic_origin_2_code,
IPEDS_ethnic_origin_3_code, IPEDS_ethnic_origin_4_code, IPEDS_ethnic_origin_5_code) in ('ZZ', 'ZZZ',
'ZZZZ', 'ZZZZZ') THEN 'Native Hawaiian'
        when CATS(IPEDS_ethnic_origin_1_code, IPEDS_ethnic_origin_2_code,
IPEDS_ethnic_origin_3_code, IPEDS_ethnic_origin_4_code, IPEDS_ethnic_origin_5_code) in ('XX', 'XXX',
'XXXX', 'XXXXX') THEN 'Asian'
        when CATS(IPEDS_ethnic_origin_1_code, IPEDS_ethnic_origin_2_code,
IPEDS_ethnic_origin_3_code, IPEDS_ethnic_origin_4_code, IPEDS_ethnic_origin_5_code) in ('FF', 'FFF',
'FFFF', 'FFFFF') THEN 'White'
        when LENGTHN(CATS(IPEDS_ethnic_origin_1_code, IPEDS_ethnic_origin_2_code,
IPEDS_ethnic_origin_3_code, IPEDS_ethnic_origin_4_code, IPEDS_ethnic_origin_5_code)) > 1 THEN
'Two or More Races'
        when IPEDS_ethnic_origin_1_code = 'A' OR IPEDS_ethnic_origin_2_code = 'A' OR
IPEDS_ethnic_origin_3_code = 'A' OR IPEDS_ethnic_origin_4_code = 'A' OR IPEDS_ethnic_origin_5_code
= 'A' THEN 'Black'
        when IPEDS_ethnic_origin_1_code = 'C' OR IPEDS_ethnic_origin_2_code = 'C' OR
IPEDS_ethnic_origin_3_code = 'C' OR IPEDS_ethnic_origin_4_code = 'C' OR IPEDS_ethnic_origin_5_code
= 'C' THEN 'American Indian'
        when IPEDS_ethnic_origin_1_code = 'Z' OR IPEDS_ethnic_origin_2_code = 'Z' OR
IPEDS_ethnic_origin_3_code = 'Z' OR IPEDS_ethnic_origin_4_code = 'Z' OR IPEDS_ethnic_origin_5_code
= 'Z' THEN 'Native Hawaiian'
        when IPEDS_ethnic_origin_1_code = 'X' OR IPEDS_ethnic_origin_2_code = 'X' OR
IPEDS_ethnic_origin_3_code = 'X' OR IPEDS_ethnic_origin_4_code = 'X' OR IPEDS_ethnic_origin_5_code
= 'X' THEN 'Asian'
        when IPEDS_ethnic_origin_1_code = 'F' OR IPEDS_ethnic_origin_2_code = 'F' OR
IPEDS_ethnic_origin_3_code = 'F' OR IPEDS_ethnic_origin_4_code = 'F' OR IPEDS_ethnic_origin_5_code
= 'F' THEN 'White'
        when ethnic_origin_code in ('10','11','12','17') THEN 'Hispanic'
        when ethnic_origin_code in ('02','18') THEN 'Black'
        when ethnic_origin_code in ('01','19') THEN 'American Indian'
        when ethnic_origin_code in ('16','21') THEN 'Native Hawaiian'
        when ethnic_origin_code in ('03','04','05','06','07','08','09','20','23','24') THEN 'Asian'
        when ethnic_origin_code in ('13','14','22','25','26','27') THEN 'White'
        when ethnic_origin_code = '28' THEN 'Two or More Races'
        ELSE 'Unknown'
    END as Ethnic_Origin_Groups,

```

/* Defines URG (Under-represented groups) among ethnic origin groups*/

Case

```

        When calculated Ethnic_Origin_Groups in ('Black','Hispanic','American Indian','Native Hawaiian')
then 'URG'
        else 'Non-URG'
    END as URG_flag,

```

/* Turns Sex Code into gender*/

case sex_code

```

        when 'M' then 'Male'

```

```
when 'F' then 'Female'  
else 'Unknown'  
END as Gender,
```

/ Domestic vs. International using citizenship*/*

```
CASE Citizenship_Status_Code  
  WHEN 'C' THEN 'Domestic'  
  ELSE 'International'  
  END as Domestic_International,
```

*/*IPEDS resident vs. NonResident*/*

```
CASE  
  WHEN Citizenship_Status_Code = 'C' OR Visa_type in ('PR','RF','TP') THEN 'Resident'  
  ELSE 'Non-resident'  
  END as IPEDS_Residency,
```

*/*Representation flag - recoded in September 2020*/*

```
CASE  
  WHEN SUBSTR(empl_unit_code,1,1) = 'A' THEN 'Non-represented'  
  WHEN (payroll_title_unit_rep_code = 'RACOV' AND empl_unit_code IN ('FX','')) THEN  
  'Represented'  
  WHEN empl_unit_code IN ('99','87','?','FX','')) THEN 'Non-represented'  
  WHEN empl_unit_code IN ('M2','M3','M4','M6','M9','MO','BX','RA') THEN 'Represented'  
  WHEN SUBSTRN(payroll_title_unit_rep_code,LENGTH(payroll_title_unit_rep_code)-2,3) = 'UNC'  
  THEN 'Non-represented'  
  ELSE 'Represented'  
  END as Representation_flag,
```

*/*Ranks rows according to the CTO code for later use in identifying the primary appointment for the unduplicated headcount*/*

```
Case  
  When calculated Earnings_Monthly > 0 then  
  Case  
    When pers_pgm = 'SMG' then 1  
    /*Ladder Faculty, Lecturers SOE, Astonomers and Agronomists*/  
    When class_ttl_outl_code_appt = '010' then 2  
    When class_ttl_outl_code_appt = '011' then 3  
    When class_ttl_outl_code_appt = '012' then 4  
    When class_ttl_outl_code_appt = '030' then 5  
    When class_ttl_outl_code_appt = '031' then 6  
    When class_ttl_outl_code_appt = '040' then 7  
    When class_ttl_outl_code_appt = '041' then 8  
    When class_ttl_outl_code_appt = '042' then 9  
    When class_ttl_outl_code_appt = '114' then 10
```

When class_ttl_outl_code_appt = '124' then 11
When class_ttl_outl_code_appt = '210' then 12
When class_ttl_outl_code_appt = '211' then 13
When class_ttl_outl_code_appt = '212' then 14
When class_ttl_outl_code_appt = '214' then 15
When class_ttl_outl_code_appt = '218' then 16
When class_ttl_outl_code_appt = '224' then 17
When class_ttl_outl_code_appt = '520' then 18
When class_ttl_outl_code_appt = '521' then 19
When class_ttl_outl_code_appt = '522' then 20
When class_ttl_outl_code_appt = '530' then 21
When class_ttl_outl_code_appt = '531' then 22
When class_ttl_outl_code_appt = '532' then 23
/*Student Assistants*/
When class_ttl_outl_code_appt = '426' then 24
When class_ttl_outl_code_appt = '436' then 25
When class_ttl_outl_code_appt = '456' then 26
When class_ttl_outl_code_appt = '467' then 27
When class_ttl_outl_code_appt = '477' then 28
/*Post-Docs*/
When class_ttl_outl_code_appt = '575' then 29
When class_ttl_outl_code_appt = '577' then 30
/*Medical Interns/Residents*/
When class_ttl_outl_code_appt = '446' then 31
/*Clinical/In-residence/Adjunct Faculty*/
When class_ttl_outl_code_appt = '311' then 32
When class_ttl_outl_code_appt = '317' then 33
When class_ttl_outl_code_appt = '323' then 34
When class_ttl_outl_code_appt = '335' then 35
When class_ttl_outl_code_appt = '341' then 36
/*Lecturers*/
When class_ttl_outl_code_appt = '221' then 37
When class_ttl_outl_code_appt = '225' then 38
When class_ttl_outl_code_appt = '357' then 39
/*Other Academics (first deans, provosts, directors)*/
When class_ttl_outl_code_appt = 'S21' then 40
When class_ttl_outl_code_appt = 'S24' then 41
When class_ttl_outl_code_appt = 'S26' then 42
When class_ttl_outl_code_appt = 'S27' then 43
When class_ttl_outl_code_appt = 'S31' then 44
When class_ttl_outl_code_appt = 'S34' then 45
When class_ttl_outl_code_appt = 'S44' then 46
When class_ttl_outl_code_appt = 'S46' then 47
When class_ttl_outl_code_appt = 'S56' then 48
When class_ttl_outl_code_appt = 'S61' then 49
When class_ttl_outl_code_appt = 'S64' then 50
/*Other Academics (then all others except UNEX)*/

```
When class_ttl_outl_code_appt = '523' then 51
When class_ttl_outl_code_appt = '524' then 52
When class_ttl_outl_code_appt = '533' then 53
When class_ttl_outl_code_appt = '534' then 54
When class_ttl_outl_code_appt = '541' then 55
When class_ttl_outl_code_appt = '542' then 56
When class_ttl_outl_code_appt = '543' then 57
When class_ttl_outl_code_appt = '551' then 58
When class_ttl_outl_code_appt = '557' then 59
When class_ttl_outl_code_appt = '566' then 60
When class_ttl_outl_code_appt = '577' then 61
When class_ttl_outl_code_appt = '581' then 62
When class_ttl_outl_code_appt = '583' then 63
When class_ttl_outl_code_appt = '621' then 64
When class_ttl_outl_code_appt = '623' then 65
When class_ttl_outl_code_appt = '627' then 66
When class_ttl_outl_code_appt = '723' then 67
When class_ttl_outl_code_appt = '727' then 68
When class_ttl_outl_code_appt = '728' then 69
When class_ttl_outl_code_appt = '729' then 70
When class_ttl_outl_code_appt = '927' then 71
When class_ttl_outl_code_appt = '928' then 72
/*Non-Academic Staff*/
When class_ttl_outl_code_appt1 in ('A','B','C','D','E','F','G','H','I','J','M','Z') then 73
/*UNEX*/
When class_ttl_outl_code_appt = '824' then 74
When class_ttl_outl_code_appt = '825' then 75
When class_ttl_outl_code_appt = '827' then 76
When class_ttl_outl_code_appt = '828' then 77
Else 78
End
Else 1000
End as CTO_Ranking,
```

monotonic () as record_id

/*Source table name*/

from PERS.PER_SNAP_ALL

/* List months to gather data for as in 'OCT####' or 'APR####'*/

where eff_date = "OCT&yr" or eff_date = "APR&yr"

group by

eff_date,
academic_rank_code,

appt_pay_rate,
appt_rate_code,
location_1,
location_2,
location_3,
empl_bus_unit,
loc_indicator,
loc_ind_description,
employment_status_code,
employee_number,
empl_emplid,
unique_id,
unique_id_effdate,
pers_pgm,
personnel_program,
Function_code,
function_name,
fund_group_code,
fund,
class_ttl_outl_code_appt,
class_ttl_outl_name_appt,
class_ttl_outl_code_appt1,
org_1_code,
org_1_Title,
org_2_code,
Org_2_Title,
org_3_code,
org_3_Title,
ethnic_origin_code,
IPEDS_hispanic_flag,
IPEDS_ethnic_origin_1_code,
IPEDS_ethnic_origin_1_name,
IPEDS_ethnic_origin_2_code,
IPEDS_ethnic_origin_3_code,
IPEDS_ethnic_origin_4_code,
IPEDS_ethnic_origin_5_code,
Citizenship_Status_Code,
visa_type,
country_of_origin,
sex_code,
age,
payroll_title_unit_rep_code,
empl_unit_code,
paid_over_code,
paygroup,
appt_basis_code,
academic_appt_basis_code,

```
appt_type_code,  
appt_type_code_pri,  
dos_code_cps,  
dos_desc_cps,  
dos_code_pps,  
title_code,  
title_name,  
title_code_pri_appt,  
primary_job_ind,  
Home_Department_Name,  
Home_Department_Code,  
unique_home_dept,  
UAS_Discipline_Code,  
UAS_Discipline_Name,  
SAU_code,  
standard_occup_class_code,  
date_of_most_recent_hire,  
retirement_system_code,  
years_of_service,  
APPT_DEPT_CD,  
APPT_DEPT_NAME;
```

*/*Creates summary FTE and Earnings fields for each individual in each time period*/*

```
create table Snapshot_SummaryFields_&yr as  
select  
  *,  
  sum(Earnings_Monthly) as Earnings_Total,  
  sum(FTE_Base) as FTE_Base_Total  
from Snapshot_Raw_&yr  
group by unique_id_effdate;
```

```
drop table Snapshot_Raw_&yr;
```

/ This next set of tables filters the above table by Positive earnings, CTO_Ranking, FTE, Earnings to identify the primary job. It then chooses the lowest Fund, Org 3, and Function for remaining duplicate records.*/*

*/*Filters table for only those records with positive earnings.*/*

```
create table Positive_earnings_&yr as  
select  
  *  
from Snapshot_SummaryFields_&yr  
where Earnings_Total >= 0.01;
```

*/*Chooses the records equal to the minimum CTO_Ranking by unique_id_effdate.*/*

```
create table CTO_Min_&yr as
select
    *,
    min(case when CTO_Ranking < 1000 and HC_Include_Flag = 'Include' then CTO_Ranking end) as
    Min_CTO
from Positive_earnings_&yr
group by unique_id_effdate
having Min_CTO = CTO_Ranking;
```

```
drop table Positive_earnings_&yr;
```

*/*Chooses from the CTO_Min table the records that equal the Max FTE by unique_id_effdate.*/*

```
create table FTE_Max_&yr as
select
    *,
    max(FTE_Base) as Max_FTE /*Changed to FTE Base vs. FTE All in prior versions*/
from CTO_Min_&yr
group by unique_id_effdate
having Max_FTE = FTE_Base;
```

```
drop table CTO_Min_&yr;
```

*/*Chooses from the FTE_Max table the records that equal the Max Earnings by unique_id_effdate*/*

```
create table Earnings_Max_&yr as
select
    *,
    max(Earnings_Monthly) as Max_Earnings
from FTE_Max_&yr
group by unique_id_effdate
having Max_Earnings = Earnings_Monthly;
```

```
drop table FTE_Max_&yr;
```

*/*Chooses from the Earnings_Max table the records with the lowest fund number by unique_id_effdate*/*

```
create table Fund_Min_&yr as
select
    *,
    min(fund) as Min_Fund
from Earnings_Max_&yr
group by unique_id_effdate
having Min_Fund = Fund;
```

```
drop table Earnings_Max_&yr;
```

```
/*Chooses from the Fund_Min table the records with the lowest org 3 code by unique_id_effdate*/
```

```
create table Org3_Min_&yr as  
select  
    *,  
    min(org_3_code) as Min_Org3  
from Fund_Min_&yr  
group by unique_id_effdate  
having Min_Org3 = org_3_code;
```

```
drop table Fund_Min_&yr;
```

```
/*Chooses from the Org3_Min table the records with the lowest function code by unique_id_effdate*/
```

```
create table Func_Min_&yr as  
select  
    *,  
    min(function_code) as Min_Func  
from Org3_Min_&yr  
group by unique_id_effdate  
having Min_Func = function_code;
```

```
drop table Org3_Min_&yr;
```

```
/*Creates a primary job flag and choose the lowest value random record_id for any remaining duplicate Unique_id_effdate (< 50 records per period)*/
```

```
create table Primary_record_&yr as  
select  
    *,  
    1 as Headcount_primary  
from Func_Min_&yr  
group by unique_id_effdate  
having min(record_id) = record_id;
```

```
drop table Func_Min_&yr;
```

```
/* Combines Snapshot_SummaryFields table with Primary_record table*/
```

```
create table Snapshot_HC_&yr as  
select  
    A.*,  
    B.Headcount_primary  
from Snapshot_SummaryFields_&yr A
```

```
left join Primary_record_&yr B on A.record_id = B.record_id and A.unique_id_effdate = B.unique_id_effdate;
```

```
drop table Snapshot_SummaryFields_&yr;  
drop table Primary_record_&yr;
```

```
/*Creates library that includes UAS discipline mapping in SAS data format*/
```

```
libname UASMap 'Q:\Human Resources\Crosswalks\UAS Mapping';
```

```
/*Maps home department to UAS discipline to fill in missing discipline values*/
```

```
create table Snapshot_Final_&yr as  
select
```

```
    A.*,  
    B.UAS_Discipline_Code_alt format = BEST12.,  
    B.UAS_Discipline_Name_alt,
```

```
Case
```

```
    When UAS_Discipline_Code_num is Null then UAS_Discipline_Code_alt  
    Else UAS_Discipline_Code_num  
    End as UAS_Discipline_Code_Combined,
```

```
Case
```

```
    WHEN UAS_Discipline_Name = '' THEN UAS_Discipline_Name_alt  
    ELSE UAS_Discipline_Name  
    END as UAS_Discipline_Name_Combined
```

```
from Snapshot_HC_&yr A
```

```
left join UASMap.Home_Department_UAS_Map B on A.Unique_Home_Dept = B.Unique_Home_Dept_Code;
```

```
drop table Snapshot_HC_&yr;
```

```
quit;
```

```
/*ends the do loop*/
```

```
%end;
```

```
%mend YearCycle;
```

```
/*Executes the macro*/
```

```
%YearCycle;
```

```
/*Combines all the individual year tables into one table and drops duplicative or unneeded fields*/
```

```
data Snapshot_allyears (drop = UAS_discipline_code_num UAS_Discipline_Code_Alt  
UAS_discipline_Name UAS_Discipline_Name_alt paid_over_code paid_over_num appt_basis_code  
appt_basis_num sex_code);;
```

```
set Snapshot_Final_;
```

```
run;
```

```
quit;
```

```
/*Deletes individual year files; Saves file to new library for consumption*/
```

```
proc datasets library=work memtype=data nolist;
```

```
delete Snapshot_Final_;
```

```
copy in = work out = <new_directory>;
```

```
select Snapshot_allyears;
```

```
run;
```

```
quit;
```