```sas
********************************************************;
*Programmed By: Thomas Grover                         ;
*Programmed To: Filter and Clean Alumni Data for Targeted Outreach ;
********************************************************;


***********************************************************************;
*Section One: Setting up our Workplace and Importing Necessary Data Files ;
***********************************************************************;


LIBNAME Alumni '/home/u63735775/AlumniData';
FILENAME Reffile '/home/u63735775/AlumniData/AlumniData.xlsx';

*NOTE: Commented out because import only necessary once;
/* PROC IMPORT DATAFILE = Reffile */
/*          DBMS = XLSX */
/*          OUT = Alumni.FullDataset; */
/*          GETNAMES = Yes; */
/* RUN; */


PROC SORT DATA = Alumni.FullDataset(KEEP = BusnOrganization)
          OUT = Alumni.CompanyList
          NODUPKEY;
     BY BusnOrganization;
RUN;

*NOTE: Needed contents to come up with cleaning plan;
/* PROC CONTENTS DATA = Alumni.FullDataset */
/*          VARNUM; */
/* RUN; */


*****************************************************;
*Section Two: Data Cleaning and Deriving New Variables  ;
*****************************************************;
DATA Alumni.ByIndustry;
     ATTRIB Badge               LABEL = "Badge #"
            FullName            LABEL = "Full Name"

            Deceased            LABEL = "Deceased (Y/N)"
            Status              LABEL = "Fraternity Status"
            Retired             LABEL = "Retirement Status"
            InitiationDate      LABEL = "Date of Initiation"
                                FORMAT = MMDDYY10.

            BusnOrganization    LABEL = "Company"
            Position            LABEL = "Job Title"
            Industry            LENGTH = $50.

            Phone               LABEL = "Phone #"
            Email               LABEL = "Email Adress"
            BusnInfoUpdateDate  LABEL = "Date of Last Update"

            HomeState           LABEL = "Home State"
            HomeCity            LABEL = "Home City"
            BusnState           LABEL = "Business State"
            BusnCity            LABEL = "Business City";

     SET Alumni.FullDataset(RENAME = ("BusnInfo-DateLastChanged"n = BusnInfoUpdateDate
                                      "Full Name"n = FullName)
                            KEEP =  Badge "Full Name"n Deceased Status HomeCity HomeState HomePhone HomeCell HomeEmail Retired
                                    BusnOrganization Position "BusnInfo-DateLastChanged"n BusnCity BusnState BusnPhone BusnCell
                                    BusnEmail InitCere
                            WHERE = (Deceased = "No" AND
                                      BusnOrganization NE "" AND
                                      BusnOrganization NE "<None Specified>" AND
                                          (HomePhone NE "" OR
                                           HomeCell NE "" OR
                                           BusnPhone NE "" OR
                                           BusnCell NE "" OR
                                           HomeEmail NE "" OR
                                           BusnEmail NE "")));

     InitiationDate = MDY(1,1,1900) + INPUT(InitCere, best12.) - 2;
     Phone = coalescec(BusnCell, BusnPhone, HomeCell, HomePhone);
     Email = coalescec(BusnEmail, HomeEmail);
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   IF INDEX(UPCASE(BusnOrganization), "BANK") GE 1 THEN Industry = "Finance/Banking";
     ELSE IF INDEX(UPCASE(BusnOrganization), "FINANC") GE 1 THEN Industry = "Finance/Banking";
       ELSE IF INDEX(UPCASE(BusnOrganization), "HOLDING") GE 1 THEN Industry = "Finance/Banking";
         ELSE IF INDEX(UPCASE(BusnOrganization), "TRUST") GE 1 THEN Industry = "Finance/Banking";
           ELSE IF INDEX(UPCASE(BusnOrganization), "INVEST") GE 1 THEN Industry = "Finance/Banking";
             ELSE IF INDEX(UPCASE(BusnOrganization), "CAPITAL") GE 1 THEN Industry = "Finance/Banking";
               ELSE IF INDEX(UPCASE(BusnOrganization), "WELLS FARGO") GE 1 THEN Industry = "Finance/Banking";
                 ELSE IF INDEX(UPCASE(BusnOrganization), "CAPITALONE") GE 1 THEN Industry = "Finance/Banking";
                   ELSE IF INDEX(UPCASE(Position), "ACCOUNT MAN") GE 1 THEN Industry = "Finance/Banking";
                     ELSE IF INDEX(UPCASE(Position), "BANK") GE 1 THEN Industry = "Finance/Banking";
                       ELSE IF INDEX(UPCASE(Position), "FINANC") GE 1 THEN Industry = "Finance/Banking";

     ELSE IF INDEX(UPCASE(BusnOrganization), "CONSULT") GE 1 THEN Industry = "Consulting";
       ELSE IF INDEX(UPCASE(Position), "CONSULT") GE 1 THEN Industry = "Consulting";
         ELSE IF INDEX(UPCASE(Position), "CNSLT") GE 1 THEN Industry = "Consulting";

     ELSE IF INDEX(UPCASE(BusnOrganization), "UNIV") GE 1 THEN Industry = "College/University Employee";
       ELSE IF INDEX(UPCASE(BusnOrganization), "NCSU") GE 1 THEN Industry = "College/University Employee";
         ELSE IF INDEX(UPCASE(BusnOrganization), "NC STATE") GE 1 THEN Industry = "College/University Employee";
           ELSE IF INDEX(UPCASE(BusnOrganization), "NORTH CAROLINA STATE") GE 1 THEN Industry = "College/Univers
             ELSE IF INDEX(UPCASE(BusnOrganization), "MIT") GE 1 THEN Industry = "College/University Emplo
               ELSE IF INDEX(UPCASE(BusnOrganization), "GEORGIA ") GE 1 THEN Industry = "College/Univers
                 ELSE IF INDEX(UPCASE(Position), "MBA") GE 1 THEN Industry = "College/University Emplo
                   ELSE IF INDEX(UPCASE(Position), "TEACHER") GE 1 THEN Industry = "College/Universi
                     ELSE IF INDEX(UPCASE(Position), "PROFESSOR") GE 1 THEN Industry = "College/Un
                       ELSE IF INDEX(UPCASE(Position), "PROF. O") GE 1 THEN Industry = "College/

     ELSE IF INDEX(UPCASE(BusnOrganization), "SOFTWARE") GE 1 THEN Industry = "Tech";
       ELSE IF INDEX(UPCASE(BusnOrganization), "ACCENTURE") GE 1 THEN Industry = "Tech";
         ELSE IF INDEX(UPCASE(BusnOrganization), "TECH") GE 1 THEN Industry = "Tech";
           ELSE IF INDEX(UPCASE(BusnOrganization), "IBM") GE 1 THEN Industry = "Tech";
             ELSE IF INDEX(UPCASE(BusnOrganization), "I B M") GE 1 THEN Industry = "Tech";

     ELSE IF INDEX(UPCASE(BusnOrganization), "ENGINEER") GE 1 THEN Industry = "Engineering";
       ELSE IF INDEX(UPCASE(BusnOrganization), "ENGR") GE 1 THEN Industry = "Engineering";
         ELSE IF INDEX(UPCASE(Position), "ENGR") GE 1 THEN Industry = "Engineering";
           ELSE IF INDEX(UPCASE(Position), "ENGINEER") GE 1 THEN Industry = "Engineering";
             ELSE IF INDEX(UPCASE(BusnOrganization), "ENGRG") GE 1 THEN Industry = "Engineering";


     ELSE IF INDEX(UPCASE(BusnOrganization), "LAW") GE 1 THEN Industry = "Law";
       ELSE IF INDEX(UPCASE(Position), "ATTORNEY") GE 1 THEN Industry = "Law";

     ELSE IF INDEX(UPCASE(BusnOrganization), "MEDICAL") GE 1 THEN Industry = "Medical";
       ELSE IF INDEX(UPCASE(BusnOrganization), "HEALTH") GE 1 THEN Industry = "Medical";
         ELSE IF INDEX(UPCASE(BusnOrganization), "DENTISTRY") GE 1 THEN Industry = "Medical";
           ELSE IF INDEX(UPCASE(BusnOrganization), "CARDIOLOGY") GE 1 THEN Industry = "Medical";
             ELSE IF INDEX(UPCASE(Position), "VET") GE 1 THEN Industry = "Medical";
               ELSE IF INDEX(UPCASE(Position), "MEDIC") GE 1 THEN Industry = "Medical";
                 ELSE IF INDEX(UPCASE(Position), "DENTIST") GE 1 THEN Industry = "Medical";
                   ELSE IF INDEX(UPCASE(Position), "PHYSIC") GE 1 THEN Industry = "Medical";
                     ELSE IF INDEX(UPCASE(Position), "RADIOL") GE 1 THEN Industry = "Medical";
                       ELSE IF INDEX(UPCASE(Position), "OPTO") GE 1 THEN Industry = "Medical";
                         ELSE IF INDEX(UPCASE(Position), "DVM") GE 1 THEN Industry = "Medical";
                           ELSE IF INDEX(UPCASE(Position), "DPM") GE 1 THEN Industry = "Medical";

     ELSE IF INDEX(UPCASE(BusnOrganization), "GOLF") GE 1 THEN Industry = "Golf/Country Clubs";
       ELSE IF INDEX(UPCASE(BusnOrganization), "COUNTRY CLUB") GE 1 THEN Industry = "Golf/Country Clubs";

     ELSE IF INDEX(UPCASE(BusnOrganization), "REAL ESTATE") GE 1 THEN Industry = "Real Estate/Construction";
       ELSE IF INDEX(UPCASE(BusnOrganization), "PROPERTIES") GE 1 THEN Industry = "Real Estate/Construction";
         ELSE IF INDEX(UPCASE(BusnOrganization), "DEVELOPMENT") GE 1 THEN Industry = "Real Estate/Construction";
           ELSE IF INDEX(UPCASE(BusnOrganization), "CONSTRUCTION") GE 1 THEN Industry = "Real Estate/Construction";
             ELSE IF INDEX(UPCASE(BusnOrganization), "BUILDERS") GE 1 THEN Industry = "Real Estate/Construction";
               ELSE IF INDEX(UPCASE(BusnOrganization), "REALTY") GE 1 THEN Industry = "Real Estate/Construction"
                 ELSE IF INDEX(UPCASE(Position), "REAL ESTATE") GE 1 THEN Industry = "Real Estate/Construction
                   ELSE IF INDEX(UPCASE(Position), "REALTOR") GE 1 THEN Industry = "Real Estate/Construction

     ELSE IF INDEX(UPCASE(BusnOrganization), "ENERGY") GE 1 THEN Industry = "Energy/Utilities";
       ELSE IF INDEX(UPCASE(BusnOrganization), "POWER") GE 1 THEN Industry = "Energy/Utilities";
         ELSE IF INDEX(UPCASE(BusnOrganization), "OIL") GE 1 THEN Industry = "Energy/Utilities";
           ELSE IF INDEX(UPCASE(BusnOrganization), "ELECTRIC") GE 1 THEN Industry = "Energy/Utilities";
             ELSE IF INDEX(UPCASE(BusnOrganization), "WESTINGHOUSE") GE 1 THEN Industry = "Energy/Utilities";

     ELSE IF INDEX(UPCASE(BusnOrganization), "NAVY") GE 1 THEN Industry = "Military/Government Job";
       ELSE IF INDEX(UPCASE(BusnOrganization), "AIR FORCE") GE 1 THEN Industry = "Military/Government Job";
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              ELSE IF INDEX(UPCASE(BusnOrganization), "ARMY") GE 1 THEN Industry = "Military/Government Job";
                ELSE IF INDEX(UPCASE(BusnOrganization), "MARINE") GE 1 THEN Industry = "Military/Government Job";
                  ELSE IF INDEX(UPCASE(BusnOrganization), "USMC") GE 1 THEN Industry = "Military/Government Job";
                    ELSE IF INDEX(UPCASE(BusnOrganization), "U.S.A.F") GE 1 THEN Industry = "Military/Government Job"
                      ELSE IF INDEX(UPCASE(BusnOrganization), "U. S. ") GE 1 THEN Industry = "Military/Government Jo
                        ELSE IF INDEX(UPCASE(BusnOrganization), "US GOV") GE 1 THEN Industry = "Military/Governme
                          ELSE IF INDEX(UPCASE(BusnOrganization), "US SECURITY") GE 1 THEN Industry = "Military,
                            ELSE IF INDEX(UPCASE(BusnOrganization), "US FISH") GE 1 THEN Industry = "Military,
                              ELSE IF INDEX(UPCASE(BusnOrganization), "STATE DOT") GE 1 THEN Industry = "Mi
                                ELSE IF INDEX(UPCASE(BusnOrganization), "OCEAN RSCH") GE 1 THEN Industry :
                                  ELSE IF INDEX(UPCASE(BusnOrganization), "NASA") GE 1 THEN Industry =

        ELSE IF INDEX(UPCASE(BusnOrganization), "TEXTILES") GE 1 THEN Industry = "Textiles/Agriculture";
          ELSE IF INDEX(UPCASE(BusnOrganization), "FARMS") GE 1 THEN Industry = "Textiles/Agriculture";
            ELSE IF INDEX(UPCASE(BusnOrganization), "TABACCO") GE 1 THEN Industry = "Textiles/Agriculture";
              ELSE IF INDEX(UPCASE(BusnOrganization), "TOBACCO") GE 1 THEN Industry = "Textiles/Agriculture";
                ELSE IF INDEX(UPCASE(Position), "CATTLE") GE 1 THEN Industry = "Textiles/Agriculture";
                  ELSE IF INDEX(UPCASE(Position), "FARMER") GE 1 THEN Industry = "Textiles/Agriculture";
                    ELSE IF INDEX(UPCASE(Position), "TEXTILES") GE 1 THEN Industry = "Textiles/Agriculture";

        ELSE IF INDEX(UPCASE(BusnOrganization), "DEFENSE") GE 1 THEN Industry = "Defense";
        ELSE IF INDEX(UPCASE(BusnOrganization), "ARCHITECT") GE 1 THEN Industry = "Architecture";

        ELSE IF INDEX(UPCASE(BusnOrganization), "INSURANCE") GE 1 THEN Industry = "Insurance";
          ELSE IF INDEX(UPCASE(Position), "GENERAL AGENT") GE 1 THEN Industry = "Insurance";

        ELSE IF INDEX(UPCASE(BusnOrganization), "SALES") GE 1 THEN Industry = "Sales";
          ELSE IF INDEX(UPCASE(Position), "SALES") GE 1 THEN Industry = "Sales";

        ELSE IF INDEX(UPCASE(Position), "VICE") GE 1 THEN Industry = "Management/Miscellaneous";

        ELSE IF INDEX(UPCASE(Position), "PRES") GE 1 THEN Industry = "Entreprenuership/Business Owner";
          ELSE IF INDEX(UPCASE(Position), "CEO") GE 1 THEN Industry = "Entreprenuership/Business Owner";
            ELSE IF INDEX(UPCASE(Position), "CHIEF EX") GE 1 THEN Industry = "Entreprenuership/Business Owner";
              ELSE IF INDEX(UPCASE(Position), "OWNER") GE 1 THEN Industry = "Entreprenuership/Business Owner";

        ELSE Industry = "Management/Miscellaneous";

    DROP InitCere Deceased HomePhone HomeCell BusnPhone BusnCell HomeEmail BusnEmail;

RUN;


********************************************************;
*Section Three: Using Proc Report to Generate Results   ;
********************************************************;
PROC SORT DATA = Alumni.ByIndustry
          OUT = Alumni.SortedIndustry;
    BY Industry BusnOrganization Position;
RUN;

PROC REPORT DATA = Alumni.SortedIndustry
            NOWD
            STYLE(HEADER) = {BACKGROUNDCOLOR = #EBBE00 COLOR=Black FONTWEIGHT=Bold}
            STYLE(REPORT) = {FONTFAMILY = VERDANA}
            STYLE(COLUMN) = {BACKGROUNDCOLOR = #111111 COLOR = White BORDERWIDTH = 1.5pt
                             BORDERCOLOR = White FONTFAMILY = Verdana};;
    BY Industry;
    COLUMNS Badge FullName Industry BusnOrganization Position Phone Email;

    DEFINE Industry /        DISPLAY ORDER = FREQ
                             STYLE(COLUMN) = {FONTWEIGHT = Bold
                                              TEXTDECORATION = UnderLine
                                              COLOR = #EBBE00};

    DEFINE BusnOrganization / DISPLAY ORDER = FREQ
                             STYLE(COLUMN) = {BACKGROUNDCOLOR = #111111
                                              COLOR = White
                                              BORDERWIDTH = 1.5pt
                                              BORDERCOLOR = White};

    DEFINE Badge /           DISPLAY ORDER = INTERNAL;
    DEFINE FullName /        DISPLAY ORDER = DATA;
    DEFINE Position /        DISPLAY ORDER = DATA;
    DEFINE Phone /           DISPLAY ORDER = DATA;
```