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| **Name: Ayush Patel**  **Roll: A232**  **Semester: VII**  **Class: A**  **Branch: Btech IT (4th year)** |
| **Practical-4 Part A** |
| **Aim:** To create user defined formats and apply the SAS defined and user defined formats on the SAS data sets.  **a.** Write a SAS Program to performed following task   * Program to create SAS dataset Payroll with 10 observations. * EmployeeID * FirstName * LastName * Gender * Qualification * Salary * Job Title[Manager, SalesManager, Sales Rep. I, Sales Rep. II etc] * Country * Birthdate * Hire Date     b. **Write Program to apply following formats for SASHELP.stocks dataset.**  i. Dollar9.2, Dollar8. Dollar12.,Dollar5.2  ii. Comma12.2,Comma8, Comma5.2  iii.Commax12.2,Commax8.2,Commax5.2  iv.MMDDYY8.  V.MMDDYY6.  ViDDMMYY10.  VII.Daate7.  iX.Date9.  X.Monyy7.  Xi.Year4.  C. Write a Program to create user defined format for given scenario. |
| **Prerequisite:**Programming for Problem Solving |
| **Outcome:**To create dataset and performed data analysis and SAS Formats |
| Theory: |
| **Procedure:**   1. Open SAS Studio and write the SAS program |
| **Instructions:**   1. Write source code of all stored procedure 2. Copy code & paste in code section of Part B. |
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| **Part B** |
| **Code:**  data payroll;  input empid Fname $ Lname $ Gender $ salary qualification $ jobtitle $ birthdate ddmmyy8. country $ hiredate ddmmyy8.;  datalines;  1 Ayush Patel M 99099 Graduate Manager 16092000 USA 09092024  2 Dhruvil Patel M 40000 UnderGrad HR 15052000 IND 02012022  3 Dhyanesh Patel M 80000 UnderGrad SalesManager 02082000 IND 03012022  4 Ajay Dabas M 60000 Graduate SalesRep 16062000 USA 03012024  5 Pavitra Maheswari M 45000 UnderGrad SalesRep 04042000 FRA 03012023  6 Tushar Agarwaal M 95000 UnderGrad SalesManager 03041999 JPN 03102025  7 Sakura Haruno F 49500 PhD SalesRep 06011989 JPN 03012004  8 Hinata Uzumaki F 90500 PhD Manager 08051995 USA 03122021  9 Snehil Raj M 65000 UnderGrad SalesRep 09012001 FRA 03012025  10 Alankar Uniyal M 99000 Graduate SalesManager 10012002 FRA 05062026  ;  A)  proc print data=payroll;  var lname fname country jobtitle salary hiredate;  run;  proc print data=payroll;  format hiredate ddmmyy10. salary dollar9.;  var lname fname country jobtitle salary hiredate;  run;  B)  proc sort data = sashelp.stocks out=sortstock;  by descending volume;  run;  i)  proc print data = work.sortstock;  format high Dollar9.2 low Dollar8. close Dollar12. adjclose Dollar5.2;  var stock high low close volume adjclose;  run;  ii)  proc print data = work.sortstock;  format volume Comma12.2;  var stock volume;  run;  proc print data = work.sortstock;  format volume Comma8.;  var stock volume;  run;  proc print data = work.sortstock;  format volume Comma5.2;  var stock volume;  run;  iii)  proc print data = work.sortstock;  format volume Commax12.2;  var stock volume;  run;  proc print data = work.sortstock;  format volume Commax8.2;  var stock volume;  run;  proc print data = work.sortstock;  format volume Commax5.2;  var stock volume;  run;  iv)  proc print data = work.sortstock;  format date MMDDYY8.;  run;  v)  proc print data = work.sortstock;  format date MMDDYY6.;  run;  vi)  proc print data = sashelp.stocks;  format date DDMMYY10.;  run;  vii)  proc print data = sashelp.stocks;  format date date7.;  run;  viii)  proc print data = sashelp.stocks;  format date date9.;  run;  ix)  proc print data = sashelp.stocks;  format date Monyy7.;  run;  x)  proc print data = sashelp.stocks;  format date Year4.;  run;  C)  proc print data=payroll;  var empid lname fname country;  run;  proc format;  value $country  'IND' = 'India'  'FRA' = 'France'  'USA' = 'United States'  'JPN' = 'Japan';  run;  proc print data=payroll;  format country $country.;  var empid lname fname country;  run;  D)  proc format;  value category 40000 -< 70000 = 'Tier 3'  70000 -< 90000 = 'Tier 2'  90000 - 110000 = 'Tier 1';  run;  proc print data=payroll;  format salary category.;  var empid lname fname country salary;  run;  proc format;  value category LOW -< 70000 = 'Tier 3'  71000 -< 90000 = 'Tier 2'  90000 - HIGH = 'Tier 1';  run;  proc print data=payroll;  format salary category.;  var empid lname fname country salary;  run; |
| **Output:**   1. **Without Formatting**     **With Formatting**     1. **i)**       **ii)**    **iii)**    **iv)**    **v)**    **vi)**    **vii)**    **viii)**    **ix)**    **x)**     1. **Without Formatting**     **With Formatting** |
| **D)** |
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| **Observation & Learning:**  Learnt about different types of formatting methods for date, salary, etc. |
| **Conclusion:**  Successfully implemented formatting methods on user defined as well as SASHELP.STOCKS dataset. |
| **Question:**  **Q1. What is SAS Format? Explain Syntax of SAS Format.**  **Ans –**  The FORMAT statement can use standard SAS formats or user-written formats that have been previously defined in PROC FORMAT. We use a FORMAT statement in the DATA step to permanently associate a format with a variable. SAS changes the descriptor information of the SAS data set that contains the variable  Syntax:  FORMAT variable-1 <...variable-n> <format> <DEFAULT=default-format>;  FORMAT variable-1 <...variable-n> format <DEFAULT=default-format>;  FORMAT variable-1 <...variable-n> format variable-1 <...variable-n> format;  **Q2. Explain difference between SAS format and user defined formats.**  **Ans –**  SAS Format is generally used for formatting numbers like salary, date, etc. It has a pre-defined method to format variables. User Defined Formatting methods can be used to represent things like country codes for example – ‘M’ for Male, ‘F’ for Female, ‘AUS’ as Australia, etc.  **Q3. Explain different types of SAS inbuilt formats with example.**  **Ans –**  Some of the built-in SAS formats that can change the display of numeric variables:   * Comma formatting for large numbers (COMMAw.d format)   **Example**  put @10 sales comma10.2;   |  |  | | --- | --- | | **Value of sales** | **Result** | |  | ----+----1----+----2 | | 23451.23 | 23,451.23 | | 123451.234 | 123,451.23 |  * Formatting for dollar amounts (DOLLARw.d format)  Example put @3 netpay dollar10.2;   |  |  | | --- | --- | | **Value of netpay** | **Result** | |  | ----+----1----+ | | 1254.71 | $1,254.71 | |