```sas
1  data Diabetes.analysis;
2      input ID    Gender  age wt  occupation  diab_occ     type    preg_occ     sudden_wt_loss  stress  exe_hunger  urinary_
3      run;
4  proc print data=diabetes.analysis;
5  run;
6
7  data Diabetes.graph;
8  set Diabetes.analysis(keep=age diab_occ gender);
9  std_age=age-diab_occ;
10 run;
11 proc print data=Diabetes.graph;
12 run;
13
14 data diabetes.all;
15 merge Diabetes.analysis Diabetes.graph;
16 run;
17 proc print data=diabetes.all;
18 run;
19
20
21 PROC UNIVARIATE DATA = Diabetes.graph;
22 HISTOGRAM std_age / NORMAL CFILL = bgr;
23 INSET N = 'Standard Age of Diabetes';
24 qqplot;
25 ppplot;
26 RUN;
27
28 data Diabetes.gender;
29 set Diabetes.graph(keep=gender std_age);
30 run;
31 proc print data=Diabetes.gender;
32 run;
33
34 data Diabetes.M Diabetes.F;
35 set Diabetes.gender;
36     if gender='1' then output Diabetes.M;
37     else if gender='0' then output Diabetes.F;
38     run;
39 proc print data=Diabetes.M;
40 run;
41 proc print data=Diabetes.F;
42 run;
43
44
45 PROC UNIVARIATE DATA = Diabetes.M;
46 HISTOGRAM std_age / NORMAL CFILL = bgr;
47 title 'Standard Age of Diabetes for Male';
48 INSET N = 'Count of Male';
49 RUN;
50
51 PROC UNIVARIATE DATA = Diabetes.F;
52 HISTOGRAM std_age / NORMAL CFILL = bgr;
53 INSET N = 'Count of Female';
54 title 'Standard Age of Diabetes for Female';
55 RUN;
56
57 proc sgplot data=diabetes.all;
58   where gender in (0, 1);       /* restrict to two groups */
59   histogram std_age / group=gender transparency=0.5;      /* SAS 9.4m2 */
60   density std_age / type=kernel group=gender; /* overlay density estimates */
61 run;
62
63 data Diabetes.genetic;
64 set Diabetes.all(keep=gender occupation genetic_inh  std_age);
65 run;
66 proc print data=Diabetes.genetic;
67 run;
68
69 *i.data of genetic inh ii.data of males having  gen inh/stress    .data of females having  gen inh/stress;
70 data diabetes.genetic1;
71 set Diabetes.genetic;
72     if genetic_inh='1' then output diabetes.genetic1;
73 proc print data=diabetes.genetic1;
74 run;
75
76 PROC UNIVARIATE DATA = Diabetes.genetic1;
```

```sas
78  HISTOGRAM std_age / NORMAL CFILL = bgr;
79  INSET N = 'Count of Genetic Inheritance';
80  title 'Standard Age of patients having Genetic Inheritance';
81  RUN;
82
83
84  data Diabetes.geneticM Diabetes.geneticF;
85  set Diabetes.genetic1;
86      if gender='1' then output Diabetes.geneticM;
87      if gender='0' then output Diabetes.geneticF;
88      run;
89  proc print data=Diabetes.geneticM;
90  run;
91  proc print data=Diabetes.geneticF;
92  run;
93
94  proc sgplot data=diabetes.genetic1;
95    where gender in (0, 1);        /* restrict to two groups */
96    histogram std_age / group=gender transparency=0.5;        /* SAS 9.4m2 */
97    density std_age / type=kernel group=gender; /* overlay density estimates */
98  run;
99
100 PROC UNIVARIATE DATA = Diabetes.geneticm;
101 HISTOGRAM std_age / NORMAL CFILL = bgr;
102 INSET N = 'Count of male having genetic inheritance';
103 title 'Standard Age of male having genetic inheritance';
104 RUN;
105
106 PROC UNIVARIATE DATA = Diabetes.geneticf;
107 HISTOGRAM std_age / NORMAL CFILL = bgr;
108 INSET N = 'Count of female having genetic inheritance';
109 title 'Standard Age of female having genetic inheritance';
110 RUN;
111
112
113 *i.data of nongenetic inh ii.data of males having no gen inh/stress   .data of females having no gen inh/stress;
114 data diabetes.stress;
115 set Diabetes.genetic;
116     if genetic_inh='0' then output diabetes.stress;
117     run;
118 proc print data=diabetes.stress;
119 run;
120
121 PROC UNIVARIATE DATA = Diabetes.stress;
122 HISTOGRAM std_age / NORMAL CFILL = bgr;
123 INSET N = 'Count of patients having Diabetes due to Stress';
124 title  'Standard Age of patients having Diabetes due to Stress';
125 RUN;
126
127 data Diabetes.stressM Diabetes.stressF;
128 set Diabetes.stress;
129     if gender='1' then output Diabetes.stressM;
130     if gender='0' then output Diabetes.stressF;
131     run;
132 proc print data=Diabetes.stressM;
133 run;
134 proc print data=Diabetes.stressF;
135 run;
136
137 PROC UNIVARIATE DATA = Diabetes.stressm;
138 HISTOGRAM std_age / NORMAL CFILL = bgr;
139 INSET N = 'Count of male having Diabetes due to Stress';
140 title  'Standard Age of male having Diabetes due to Stress';
141 RUN;
142
143 PROC UNIVARIATE DATA = Diabetes.stressf;
144 HISTOGRAM std_age / NORMAL CFILL = bgr;
145 INSET N = 'Count of female having Diabetes due to Stress';
146 title  'Standard Age of female having Diabetes due to Stress';
147 RUN;
148
149 proc sgplot data=diabetes.stress;
150   where gender in (0, 1);        /* restrict to two groups */
151   histogram std_age / group=gender transparency=0.5;        /* SAS 9.4m2 */
152   density std_age / type=kernel group=gender; /* overlay density estimates */
153 run;
154
155 *deleted blanks in Hba1c1;
```

```sas
156  data diabetes.compare;
157  set diabetes.all;
158  if hba1c_1='' then delete;
159  run;
160  proc print data=diabetes.compare;
161  run;
162
163
164  data diabetes.compare1;
165  set Diabetes.compare;
166      if current_hba1c <= hba1c_1 then tag='m';
167      if current_hba1c > hba1c_1 then tag='nm';
168      run;
169  proc print data=diabetes.compare1;
170  run;
171
172
173  proc freq data=diabetes.compare1;
174      table tag / nopercent nocum;
175  run;
176
177  data diabetes.relation1;
178  set diabetes.analysis(drop=ID   Gender   age wt   occupation   diab_occ    preg_occ    sudden_wt_loss  stress  exe_hunger
179  run;
180  proc print data=diabetes.relation1;
181  run;
182
183
184
185  data Diabetes.relation;
186  set Diabetes.analysis(keep= gender www_0 current_hba1c www_1 hba1c_1 );
187  run;
188  proc print data=Diabetes.relation;
189  run;
190
191
192
193  PROC sgscatter DATA = diabetes.relation;
194  PLOT current_HBA1C*www_0   hba1c_1*www_1 ;
195  RUN;
196
197  data Diabetes.type;
198  set Diabetes.all(keep= type gender genetic_inh stress std_age );
199  run;
200  proc print data=Diabetes.type;
201  run;
202
203  data diabetes.type2 ;
204  set Diabetes.type;
205      if type='2' then output diabetes.type2;
206  proc print data=diabetes.type2;
207  run;
208
209  data diabetes.g_i diabetes.type2M diabetes.type2F;
210  set Diabetes.type2;
211      if genetic_inh='1' then output diabetes.g_i;
212      if gender='0' && genetic_inh='1' then output diabetes.type2F;
213      if gender='1' && genetic_inh='1' then output diabetes.type2M;
214  proc print data=diabetes.g_i;
215  run;
216  proc print data=diabetes.type2F;
217  run;
218  proc print data=diabetes.type2M;
219  run;
220
221  PROC UNIVARIATE DATA = Diabetes.g_i;
222  HISTOGRAM  / NORMAL CFILL = bgr;
223  INSET N = 'Count of Genetic Inheritance';
224  title 'Standard Age of patients having Genetic Inheritance';
225  RUN;
226
227  data diabetes.stress1 diabetes.strtype2M diabetes.strtype2F;
228  set Diabetes.type2;
229      if genetic_inh='0' then output diabetes.stress1;
230      if gender='0' && genetic_inh='0' then output diabetes.strtype2F;
231      if gender='1' && genetic_inh='0' then output diabetes.strtype2M;
232  proc print data=diabetes.stress1;
233  run;
```

```sas
234  proc print data=diabetes.strtype2F;
235  run;
236  proc print data=diabetes.strtype2M;
237  run;
238
239  PROC SUMMARY data= diabetes.analysis PRINT MEAN var STD MEDIAN KURTOSIS SKEWNESS MEDIAN Q1 Q3;
240  where type=1;
241  VAR age current_hba1c;
242  RUN;
243
244  PROC SUMMARY data= diabetes.analysis PRINT  MEAN var STD MEDIAN KURTOSIS SKEWNESS MEDIAN Q1 Q3;
245  where type=2;
246  VAR age current_hba1c;
247  RUN;
248
249
250  *data of patients having job,stress,type=2;
251
252  proc univariate data=diabetes.stress;
253    class occupation;
254    var std_age;        /* computes descriptive statisitcs */
255    histogram std_age / nrows=3 odstitle="Occupation wise Standard age of having Stress";
256    ods select histogram; /* display on the histograms */
257  run;
258
259  proc print data=diabetes.stress;
260  run;
261
262  data Diabetes.os0;
263  set Diabetes.all(keep=occupation gender type age diab_occ stress_now genetic_inh);
264  where occupation='Job' && genetic_inh=0 && type=2;
265  job_std_age=age-diab_occ;
266  run;
267  proc print data=Diabetes.os0;
268  run;
269
270
271  PROC UNIVARIATE DATA = Diabetes.os0;
272  HISTOGRAM job_std_age / NORMAL CFILL = bgr;
273  INSET N = 'Count of T2 DM patients having job and stress';
274  title 'Standard Age of patients having job and stress';
275  RUN;
276
277  *data of patients having buisness,stress,type=2;
278  data Diabetes.os1;
279  set Diabetes.all(keep=occupation gender type age diab_occ stress_now genetic_inh);
280  where occupation='Business' && genetic_inh=0 && type=2;
281  business_std_age=age-diab_occ;
282  run;
283  proc print data=Diabetes.os1;
284  run;
285
286  PROC UNIVARIATE DATA = Diabetes.os1;
287  HISTOGRAM business_std_age / NORMAL CFILL = bgr;
288  INSET N = 'Count of T2 DM patients having buisness and stress';
289  title 'Standard Age of patients having buisness and stress';
290  RUN;
291
292  *data of patients who are student,stress,type=1;
293  data Diabetes.os2;
294  set Diabetes.all(keep=occupation gender type age diab_occ stress_now genetic_inh);
295  where occupation=2 && genetic_inh=0 && type=1;
296  std_age2=age-diab_occ;
297  run;
298  proc print data=Diabetes.os2;
299  run;
300
301  PROC UNIVARIATE DATA = Diabetes.os2;
302  HISTOGRAM std_age2 / NORMAL CFILL = bgr ;
303  INSET N = 'Count of T1 DM patients who are students and having stress';
304  title 'Standard Age of patients who are students and having stress';
305  RUN;
306
307
308  *data of patients who are retired,stress,type=2;
309  data Diabetes.os3;
310  set Diabetes.all(keep=occupation gender type age diab_occ stress_now genetic_inh);
311  where occupation='Retired' && genetic_inh=0 && type=2;
```

```sas
312  Retired_std_age=age-diab_occ;
313  run;
314  proc print data=Diabetes.os3;
315  run;
316
317  PROC UNIVARIATE DATA = Diabetes.os3;
318  HISTOGRAM Retired_std_age / NORMAL CFILL = bgr;
319  INSET N = 'Count of T2 DM patients who are retired and having stress';
320  title 'Standard Age of patients who are retired and having stress';
321  RUN;
322
323
324  *data of patients who are housewives,stress,type=2;
325  data Diabetes.os4;
326  set Diabetes.all(keep=occupation gender type age diab_occ stress_now genetic_inh);
327  where occupation='Housewives' && genetic_inh=0 && type=2;
328  Housewives_std_age=age-diab_occ;
329  run;
330  proc print data=Diabetes.os4;
331  run;
332
333  PROC UNIVARIATE DATA = Diabetes.os4;
334  HISTOGRAM Housewives_std_age / NORMAL CFILL = bgr;
335  INSET N = 'Count of T2 DM patients who are housewives and having stress';
336  title 'Standard Age of patients who are housewives and having stress' ;
337  RUN;
338
339
340  *data of patients who are farmers,stress,type=2;
341  data Diabetes.os5;
342  set Diabetes.all(keep=occupation gender type age diab_occ stress_now genetic_inh);
343  where occupation='Farmers' && genetic_inh=0 && type=2;
344  Farmers_std_age=age-diab_occ;
345  run;
346  proc print data=Diabetes.os5;
347  run;
348
349
350  PROC UNIVARIATE DATA = Diabetes.os5;
351  HISTOGRAM Farmers_std_age / NORMAL CFILL = bgr;
352  INSET N = 'Count of T2 DM patients who are farmers and having stress';
353  title 'Standard Age of patients who are farmers and having stress';
354  RUN;
355
356
357  proc aceclus data=diabetes.analysis out=diabetes.analysis1 p=.05 noprint;
358  var total_comp current_hba1c;
359  run;
360
361
362  data Diabetes.comp;
363      input ID    Gender   age wt   occupation   diab_occ    type     preg_occ     sudden_wt_loss  stress  exe_hunger  urinary_
364      run;
365  proc print data=diabetes.comp;
366  run;
367
368  data diabetes.comp;
369  if gender==0 then gender='Female' output diabetes.comp;
370  proc print data=diabetes.comp;
371  run;
372
373  ods graphics on / width=10 in height=6 in;
374  proc sgplot data=diabetes.comp;
375   scatter x=total_comp y=current_hba1c/ group=gender;
376  run;
377
378  proc sgplot data=diabetes.comp;
379   scatter x=total_comp y=comp_count/ group=gender   ;
380  run;
381
382  data Diabetes.med;
383      input ID    Gender   age wt   occupation   diab_occ    type     preg_occ     sudden_wt_loss  stress  exe_hunger  urinary_
384      run;
385  proc print data=diabetes.med;
386  run;
387
388  PROC TTEST DATA = diabetes.med;
389  PAIRED med_count0 *med_count1 current_hba1c*hba1c_1;
```

```
390  run;
391
392
393  proc summary data=diabetes.all;
394   var std_age current_hba1c wt;
395   output out=diabetes.summary;
396  run;
397  proc print data=diabetes.summary;
398  run;
399
400
401  proc capability data=diabetes.analysis;
402  qqplot age comp_count;
403  run;
404
405  proc sgplot data=diabetes.analysis;
406   scatter x=age y=current_hba1c/ group=gender  ;
```