Assignment 1

Problem 1:

a) Read AAUP data

SAS Code:

```
DATA ACADEME;
INFILE 'C:\Users\mummidra\Dropbox\UC\FirstSem\Stat_Computing\Assignment_1\AAUP_data.txt'
LRECL=32767 delimiter=',';
length FICE $4;
length College_Name $40;
INPUT FICE College_Name$ State_code$ Type$ Avg_Sal_Full_Prof Avg_Sal_Assoc_Prof
Avg_Sal_Assistant_Prof Avg_Sal_All_Ranks Avg_Comp_Full_Prof Avg_Comp_Assoc_Prof
Avg_Comp_Assis_Prof Avg_Comp_All_Ranks No_Full_Prof No_Assoc_Prof No_Assis_Professors
No_Instructors No_Faculty_All_Ranks;
RUN;
PROC PRINT DATA=ACADEME;
RUN;
```

SAS Output:

The SAS System

Obs	FICE	College_Name	State_code	Type	Avg_Sal_Full_Prof	Avg_Sal_Assoc_Prof	Avg_Sal_Assistant_Prof	Avg_Sal_All_Ranks	Avg_Comp_Full_Prof	Avg_Comp_Assoc_Prof	Avg_Comp_Assis_Prof	Avg_Comp_All_Ranks	No_Full_Prof	No_As
1	1061	Alaska Pacific University	AK	IIB	454	382	362	382	567	485	471	487	6	
2	1063	Univ.Alaska-Fairbanks	AK	I	686	560	432	508	914	753	572	677	74	
3	1065	Univ.Alaska-Southeast	AK	IIA	533	494	329	415	716	663	442	559	9	
4	1146	Univ.Alaska-Anchorage	AK	IIA	612	507	414	498	825	681	557	670	115	
5	1002	Alabama Agri.&Mech. Univ.	AL	IIA	442	369	310	350	530	444	376	423	59	
6	1004	University of Montevallo	AL	IIA	441	385	310	388	542	473	383	477	57	
7	1008	Athens State College	AL	IIB	466	394	351	396	558	476	427	478	20	
8	1009	Auburn University-Main	AL	I	580	437	374	455	692	527	451	546	366	
9	1012	Birmingham Southern College	AL	IIB	498	379	322	401	655	501	404	523	34	
10	1016	Univ. of North Alabama	AL	IIB	506	412	359	411	607	508	445	503	67	
11	1019	Huntingdon College	AL	IIB	339	303	287	301	421	371	347	366	8	
12	1020	Jacksonville State Univ.	AL	IIA	461	389	338	386	585	496	436	493	106	
13	1024	Livingston University	AL	IIB	360	304	258	300	433	369	313	363	27	

b) **Creating dataset with all average salaries and average compensations.**

SAS Code:

```
DATA ALLAVERAGES;
SET ACADEME;
DROP College_Name Type No_Full_Prof No_Assoc_Prof No_Assis_Professors No_Instructors
No_Faculty_All_Ranks;
RUN;
PROC PRINT DATA=ALLAVERAGES;
RUN;
```

SAS Output:

The SAS System

Obs	FICE	State_code	Avg_Sal_Full_Prof	Avg_Sal_Assoc_Prof	Avg_Sal_Assistant_Prof	Avg_Sal_All_Ranks	Avg_Comp_Full_Prof	Avg_Comp_Assoc_Prof	Avg_Comp_Assis_Prof	Avg_Comp_All_Ranks
1	1061	AK	454	382	362	382	567	485	471	487
2	1063	AK	686	560	432	508	914	753	572	677
3	1065	AK	533	494	329	415	716	663	442	559
4	1146	AK	612	507	414	498	825	681	557	670
5	1002	AL	442	369	310	350	530	444	376	423
6	1004	AL	441	385	310	388	542	473	383	477
7	1008	AL	466	394	351	396	558	476	427	478
8	1009	AL	580	437	374	455	692	527	451	546
9	1012	AL	498	379	322	401	655	501	404	523
10	1016	AL	506	412	359	411	607	508	445	503
11	1019	AL	339	303	287	301	421	371	347	366
12	1020	AL	461	389	338	386	585	496	436	493
13	1024	AL	360	304	258	300	433	369	313	363

c) **create two subsets whose colleges are from AK or AL separately**

SAS Code:

```
DATA ALDDATASET;
SET ALLAVERAGES;
IF State_code='AL';
RUN;
DATA AKDDATASET;
SET ALLAVERAGES;
IF State_code='AK';
RUN;
PROC PRINT DATA=ALDDATASET;
PROC PRINT DATA=AKDDATASET;
RUN;
```

SAS Output:

The SAS System

Obs	FICE	State_code	Avg_Sal_Full_Prof	Avg_Sal_Assoc_Prof	Avg_Sal_Assistant_Prof	Avg_Sal_All_Ranks	Avg_Comp_Full_Prof	Avg_Comp_Assoc_Prof	Avg_Comp_Assis_Prof	Avg_Comp_All_Ranks
1	1002	AL	442	369	310	350	530	444	376	423
2	1004	AL	441	385	310	388	542	473	383	477
3	1008	AL	466	394	351	396	558	476	427	478
4	1009	AL	580	437	374	455	692	527	451	546
5	1012	AL	498	379	322	401	655	501	404	523
6	1016	AL	506	412	359	411	607	508	445	503
7	1019	AL	339	303	287	301	421	371	347	366
8	1020	AL	461	389	338	386	585	496	436	493
9	1024	AL	360	304	258	300	433	369	313	363

The SAS System

Obs	FICE	State_code	Avg_Sal_Full_Prof	Avg_Sal_Assoc_Prof	Avg_Sal_Assistant_Prof	Avg_Sal_All_Ranks	Avg_Comp_Full_Prof	Avg_Comp_Assoc_Prof	Avg_Comp_Assis_Prof	Avg_Comp_All_Ranks
1	1061	AK	454	382	362	382	567	485	471	487
2	1063	AK	686	560	432	508	914	753	572	677
3	1065	AK	533	494	329	415	716	663	442	559
4	1146	AK	612	507	414	498	825	681	557	670

d) total income dataset

SAS Code:

```
DATA ALTOTALDATASET;
SET ALDDATASET;

TOT_Sal_Full_Prof=Avg_Sal_Full_Prof+Avg_Comp_Full_Prof;
TOT_Sal_Assoc_Prof=Avg_Sal_Assoc_Prof+Avg_Comp_Assoc_Prof;
TOT_Sal_Assis_Prof=Avg_Sal_Assistant_Prof+Avg_Comp_Assis_Prof;
TOT_Sal_All_Ranks=Avg_Sal_All_Ranks+Avg_Comp_All_Ranks;

DROP Avg_Sal_Full_Prof Avg_Sal_Assoc_Prof Avg_Sal_Assistant_Prof Avg_Sal_All_Ranks
Avg_Comp_Full_Prof Avg_Comp_Assoc_Prof Avg_Comp_Assis_Prof Avg_Comp_All_Ranks;
RUN;
DATA AKTOTALDATASET;
SET AKDDATASET;
TOT_Sal_Full_Prof=Avg_Sal_Full_Prof+Avg_Comp_Full_Prof;
TOT_Sal_Assoc_Prof=Avg_Sal_Assoc_Prof+Avg_Comp_Assoc_Prof;
TOT_Sal_Assis_Prof=Avg_Sal_Assistant_Prof+Avg_Comp_Assis_Prof;
TOT_Sal_All_Ranks=Avg_Sal_All_Ranks+Avg_Comp_All_Ranks;

DROP Avg_Sal_Full_Prof Avg_Sal_Assoc_Prof Avg_Sal_Assistant_Prof Avg_Sal_All_Ranks
Avg_Comp_Full_Prof Avg_Comp_Assoc_Prof Avg_Comp_Assis_Prof Avg_Comp_All_Ranks;
RUN;

PROC PRINT DATA=ALTOTALDATASET;
PROC PRINT DATA=AKTOTALDATASET;
RUN;
```

The SAS System

Obs	FICE	State_code	TOT_Sal_Full_Prof	TOT_Sal_Assoc_Prof	TOT_Sal_Assis_Prof	TOT_Sal_All_Ranks
1	1002	AL	972	813	686	773
2	1004	AL	983	858	693	865
3	1008	AL	1024	870	778	874
4	1009	AL	1272	964	825	1001
5	1012	AL	1153	880	726	924
6	1016	AL	1113	920	804	914
7	1019	AL	760	674	634	667
8	1020	AL	1046	885	774	879
9	1024	AL	793	673	571	663

The SAS System

Obs	FICE	State_code	TOT_Sal_Full_Prof	TOT_Sal_Assoc_Prof	TOT_Sal_Assis_Prof	TOT_Sal_All_Ranks
1	1061	AK	1021	867	833	869
2	1063	AK	1600	1313	1004	1185
3	1065	AK	1249	1157	771	974
4	1146	AK	1437	1188	971	1168

Problem 2:

1.Code after correction:

SAS Code:

```
DATA SCORE_LIST;
INPUT SCHOOL$ MATH_BEFORE MATH_AFTER@@;
 MATH_IMPROVE= MATH_AFTER- MATH_BEFORE;
CARDS;
UC 80 81 UC 80 80 UC 90 87 OSU 70 80
 OSU 78 80
;
 RUN;
DATA LIST_NEW;
 KEEP SCHOOL MATH_IMPROVE;
RUN;
 PROC SORT DATA=LIST_NEW OUT=LIST2;
BY MATH_IMPROVE ;
DATA LIST2;
 SET LIST2;
IF MATH_IMPROVE>0 THEN GOOD=’YES’;
 ELSE GOOD=’NO’;
RUN;
PROC PRINT DATA=LIST2;
RUN;
```

2 Running corrected code in SAS

SAS Code:

```
DATA SCORE_LIST;
 INPUT SCHOOL$ MATH_BEFORE MATH_AFTER@@;
MATH_IMPROVE=(MATH_AFTER-MATH_BEFORE);
CARDS;
UC 80 81 UC 80 80 UC 90 87 OSU 70 80
OSU 78 80
;
RUN;
DATA LIST1_NEW;
SET SCORE_LIST;
 KEEP SCHOOL MATH_IMPROVE;
RUN;
PROC SORT DATA=LIST1_NEW OUT=LIST2;
 BY MATH_IMPROVE;
DATA LIST2;
 SET LIST2;
 IF MATH_IMPROVE>0 THEN GOOD='YES';
ELSE GOOD='NO';
RUN;
PROC PRINT DATA=LIST2;
RUN;
```

SAS Output:

The SAS System

Obs	SCHOOL	MATH_IMPROVE	GOOD
1	UC	-3	NO
2	UC	0	NO
3	UC	1	YES
4	OSU	2	YES
5	OSU	10	YES