```sas
/* Problem Statement 3 SAS Code */
Libname PJ '/folders/myfolders/SAS Project';


FILENAME REFFILE '/folders/myfolders/SAS Project/Crash.xlsx';

PROC IMPORT DATAFILE=REFFILE
    DBMS=xlsx
    OUT=PJ.Crash;
    GETNAMES=YES;
RUN;

FILENAME REFFILE1 '/folders/myfolders/SAS Project/Direction.xlsx';

PROC IMPORT DATAFILE=REFFILE1
    DBMS=xlsx
    OUT=PJ.Direction;
    GETNAMES=YES;
RUN;

data PJ.crash; set pj.crash;

Drop crash_time;

run;

/*sort two dataset by collision_id */
proc sort data=PJ.crash;
    by collision_id;
run;
proc sort data=PJ.direction;
    by collision_id;
run;


/* Merge dataset by collision_id */
data PJ.crashmerge;
 merge PJ.crash PJ.direction;
 by collision_id;
run;

/*Turn direction into numeric values */
proc format;
    invalue direction
        "East" = 0
        "Northeast" = 1
        "North" = 2
        "Northwest" = 3
        "West" = 4
        "Southwest" = 5
        "South" = 6
        "Southeast" = 7
        "Unknown" = 8;

```

```
54 run;
55
56 data PJ.crashmerge; set PJ.crashmerge;
57
58 Direction = input(travel_direction, direction.);
59 Drop zip_code location;
60 run;
61
62 data PJ.crashmerge;
63 run;
64
65
66
67 Proc corr data=PJ.crashmerge;
68 run;
69
70
71 /* Remove missing values */
72 data PJ.crashmerge;
73 set PJ.crashmerge;
74 if compress(cats(of _all_),'')='' then delete;
75 run;
76
77
78 Libname PJ '/folders/myfolders/Project';
79
80 FILENAME REFFILE '/folders/myfolders/Project/Crashmerge2.csv';
81
82 PROC IMPORT DATAFILE=REFFILE
83     DBMS=csv
84     OUT=PJ.Crashmerge2;
85     GETNAMES=YES;
86 RUN;
87
88 data PJ.crashmerge2; set pj.crashmerge2;
89 drop var1;
90 run;
91
92 Proc corr data=PJ.crashmerge2;
93 run;
94
95
96
97 proc reg data=pj.crashmerge2;
98
99 model crash_time_1 = direction longitude latitude;
100 run;
101
102
103
```