程序代写代做 CS编程辅导

Final Assignment



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Instructions QQ: 749389476

The BOX folder, entitled Final Assignment contains files that you will need.

Your assignment consists of performing the analysis for four different types of ANOVA models. Each model will use the SENIC data (described below) There is no Rorr PStudio files for these data as your assignment will be to reproduce (or expand) my SAS analysis using R.

Perform the analysis for the four ANOVA type models and submit your R code (or *.rmd file) with the corresponding output with discussion in either a pdf or html format. You are free to use any of the variables for your analysis (assuming they make sense in your model).

This assignment is due when we are scheduled to take the final (5:00 pm on May 8). You can submit via canvas or email me your results. If you are in doubt, just keep it simple and follow my lead when doing your analysis.

You are welcomed to use any of the resources given in this class (or any other resource that does not consume Oxygen). This is NOT a group project. You are welcome to ask me questions but if I haven't seen you in class the last 4-6 weeks, don't expect very helpful answers!

Data

SENIC Data Set

The primary objective of the Study on the Efficacy of Nosocomial Infection Control (SENIC ProJect) was to determine whether infection surveillance and control programs have reduced the rates of nosocomial

(hospital-acquired) infection in United States hospitals. This data set consists of a random sample of 113 hospitals selected from the original 328 fospitals surveyed

Each line of the data set has an identification number and provides information on 11 other variables for a single hospital. The data presented are averages for each hospital (rather than individual patient data) for the 1975-76 study perio

- Variable Desci No. 1 Identification 1 2 Length of stay 3 4 Infection risk 5 Routine culturing 6 Routine chest X-7 Number of beds
- 8 Medical school affiliation
- 9 Region
- 10 Average daily celsus at: cstutorcs **e**(
- Number of nurses
- Available facilities and services 12

```
data senic;
  input id los age infrisk caltratio xray beds affil region Project Exam Help datalines:
                       9.0
                                        2
      7.13 55.7 4.1
                                   279
                                                      52 40.0
        8.82 58.2 1.6 3.8 51.7 80 2 2 51
        8.34
              56.9 2.7
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                                                 82
                                                      54 20.0
                                                                @163.com
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       8.95
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              56.5
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                    4.5
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                              101.8
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                                                          37.1
             48.1
                                     108
21
   18 11.62 53.9 6.4
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                                                     497
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                    4.0
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                                                     436
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   27
        9.31 47.2 4.5 30.2
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                                     170
                                          2 1 124
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                                                          37.1
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                                     176
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                                                          37.1
   29 11.65
                               96.1
                                     248
                                                217
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              54.5
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                                72.6
                                     210
                                          2 2 200
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   33 11.77
              54.1 5.3 17.3
                               56.0
                                     196
                                          2 1 164
                                                     165
                                                          34.3
   34
              54.0
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                              111.7
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                                76.1
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                                                     172
   36 10.33
                                     266
                                          2 1 181
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                              104.3
                                                     149
                                                          54.3
   37
        9.97
              58.2 2.8 16.5
                                76.5
                                      90
                                          2 2
                                                 69
                                                          34.3
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                                      60
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                                87.9
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              49.1 4.6
                         7.1
   39 10.47
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                    4.1
                          5.7
                                69.1
                                     196
                                          2
                                             2
                                                168
                                                     153
                                                          54.3
43
   40
       8.16
             60.9 1.3
                         1.9
                               58.0
                                      73
                                          2 3
```



SAS Code

Define new categorical

DVA models.

```
*Create a work data set;
2 libname mydata 'your loc
  BATA SENIC; SET MYDATA.S.
  4 *defining new categorica
                                                               /* Age of patient category */;
 7 if age < 50.9 then new_age = 1;</pre>
s if 51 < age < 53.1 then new age = 53.2 cstutorcs if age > 56.1 then new age = 4;
*beds;
                                                              /* Size of hospital */;
16 if beds > 313 then size = 4;
17
                                                                 /* Number of nurses */;
18 *care;
if nurses < 66 then care care if 67 < nurses < 132 ther care i
21 if 133 < nurses < 218 then care = 3;</pre>
22 if nurses > 219 then care = 4;
24 *serve;
25 if availserv < 43.2 then served ble served by \frac{1}{49389476}
26 else serve = 2;
27 RUN;
32 ****************
34 proc sort data=senic; by region; run;
proc freq data=senic; table region; run;
36 proc means data=senic;
                            var los age infrisk cultratio xray beds
37
38
                                     census nurses availserv;
39 run;
proc means data=senic q1 median q3;
var los age infrisk cultratio xray beds
43
                                     census nurses availserv;
44 run;
```

Assignment One-Way ANOVA 程。合作写代做 CS编程辅导

```
One-Way ANOVA Models
  *******
  proc surveyselect data=s
    strata region;
10 run;
11 */;
12 proc freq data=oneway;
14
  title2 'One-Way for LOS by
proc sgplot data=oneway;
vbox los /group=region;
                        VeChat: cstutorcs
18
19 proc glm data=oneway;
20 class region;
21 model los = region;
22 means region/duncan lsd tukey;
                        Assignment Project Exam Help
23 run:
25 title2 'One-Way for Infection Risk by Region';
26 proc sgplot data=oneway;
  vbox infrisk /group=region;
                       Email: tutorcs@163.com
28
30 proc sgpanel data=oneway;
31 panelby affil;
32 vbox infrisk /group=region;
33
                          Q: 749389476
34
35
36 proc glm data=oneway;
37 class region;
38 model infrisk = region;
*means region/duncan lsd https://tutorcs.com
41
42
  run:
```

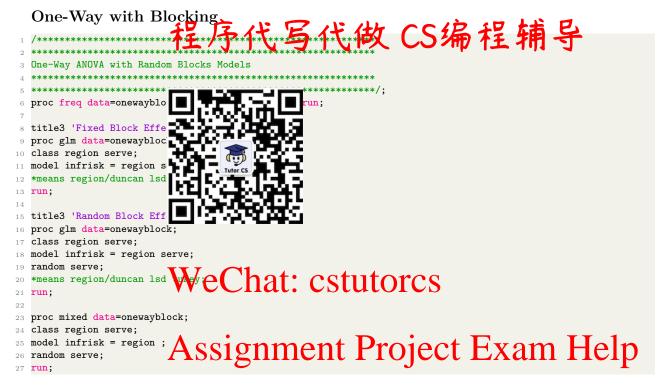
Two examples are given for considering differences by regions of the US. I used Length of Hospital Stay (los) and risk of hospital induced infection (infrisk). The models for each example are;

$$y_{ij} = \mu + \tau_i x_{ij} + \epsilon_{ij}$$

where y_{ij} is los and x_{ij} is 1 if hospital is located in region = i for the first example. y_{ij} is infection risk in example 2.

In the one way model I have used a reduced data set (oneway) for the analysis, as the entire data set would likely cause the model to be "overpowered".

- 1. State the null hypothesis for each example.
- 2. What conclusion can you reach? Remember that the hospital is the individual in this study, conclusions should be at the population level. In these examples, the statement concerns the four regions of the US for the respective response variable.
- 3. What are the findings for the multiple comparisons?



I added the variable serve to the above infection risk model. The model is: $Email_{y_{ijk}} \underbrace{tutores_{j}}_{x_{ij}} \underbrace{s_{j}}_{z_{jk}} \underbrace{t_{ijk}}_{z_{ij}} \underbrace{63.com}_{z_{ijk}}$

where y_{ijk} is infection risk and x_{ij} is 1 if the hospital is in region = i and z_{jk} is 1 for serve = j.

In the one way with blocking model I have see Qreduced data set (onewayblock) for the analysis, as the entire data set would likely carse the model to be overpowered.

- 1. Why did I add a blocking effect to the one-way model?
- 2. What did I hope th accomplish? $\frac{1}{2}$ //tutorcs.com
- 3. Did it work?
- 4. What conclusions can you reach?

Two-Way factorial ANOVA Model

```
Two-Way ANOVA Models
8 title2 'Two-Way for LOS by New_AGE and Size';
10 proc sgpanel data=senic;
11 panelby size;
vbox los /group=new_age;
13 run:
16 title3 'With Interaction term';
17 proc glm data=senic;
18 class region new_age size;
```

```
model los = new_age | size;
wheans region/duncan lsd 程序, 子代写代做 CS编程辅导

title3 'Random Size Effect';
proc glm data=senic;
class region new_age size model los = new_age | size;
wheans region/duncan lsd run;

proc mixed data=senic;
class region new_age size
model los = new_age | size;
random size;
```

The models are;

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where y_{ijk} is los and x_{ij} is 1 if hospital's patient average falls into new-age = i and z_{jk} is 1 when hospital size = j. This model is the similar to the above one-way model. Yet, in this case we are interested in the effect that both new-age and size have on the average Length of hospital stay. In which case, we add an interaction terms given by $\gamma_{ij}w_{ijk}$ where v_{ij} is old then the wage is it indicates G for rosp tack. The model becomes

$$y_{ijk} = \mu + \tau_i x_{ij} + \beta_j z_{jk} + \gamma_{ij} w_{ijk} + \epsilon_{ijk}$$

- 1. The initial analysical this model should focus on what four 10613 term is needed. Is it?
- 2. What are the consequences to the answer of this question concerning the presence or absence of this term? and describe your findings.

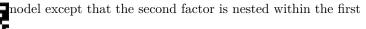
Two-Way Nested (1) 12: 749389476

```
Nested ANOVA Models
   *********
  title2 'Nested Two-Way for LOS by size within region';
10 proc sgpanel data=senic;
11 panelby size:
vbox los /group=region;
14
16 title3 'Fixed Block Effect';
17 proc glm data=senic;
18 class region size;
19 model los = region size(region)/e1 e3;
*means region/duncan lsd tukey;
21 run;
23 title3 'Random Block Effect';
24 proc glm data=senic;
25 class region size;
26 model los = region size(region);
27 random size(region);
28 test h=new_age e=size(region);
*means region/duncan lsd tukey;
```

```
31
32 proc mixed data=senic;
33 class region size;
34 model los = region;
35 random size(region);
```

程序代写代做 CS编程辅导

This model is similar to factor. The model beco



$$\tau_i x_{ij} + \beta_{j(i)} z_{j(i)k} + \epsilon_{ijk}$$

1. In this model, one the example that

t factor B without knowing factor A. Explain your answer to

2. If the nested term and address inference concerning factor A, explain.

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