

Survival Analysis Assignment

1. Download [STAN_NEW](#). Consider the code below:

```
proc phreg data=c.stan;
model surv1*dead(0)=plant tms age / ties=efron rl=pl;
if wait>=surv1 or wait=. then do;
    plant=0; tms=0; age=0;
end;
else do;
    plant=1; tms=m3; age=agetrans;
end;
run;
```

Rewrite the code above using the counting process format in order to obtain the same output below:

Analysis of Maximum Likelihood Estimates						95% Hazard Ratio		
Parameter	DF	Estimate	Standard Error	Chi-Square	Pr > ChiSq	Hazard Ratio	Profile Confidence Limits	Likelihood
plant	1	-2.71236	1.15296	5.5343	0.0186	0.066	0.006	0.556
tms	1	0.20578	0.37289	0.3046	0.5810	1.228	0.563	2.471
age	1	0.05630	0.02247	6.2789	0.0122	1.058	1.015	1.108

Attach your code, output and log.

2. Download [FIRSTCOCAINE](#). Read the slides for the description of the data and the variables. Build an extended Cox model to examine the association between time-varying previous marijuana use (call this variable USED MJ) and cocaine initiation, controlling for time-varying previous use of other drugs (call this variable USED OD) and BIRTHYR (not time-varying). Here, a person is not considered to have previously used marijuana until 1 year after the age at which the person first used marijuana. Similarly, a person is not considered to have previously used other drugs until 1 year after the age at which the person first used other drugs. The model will include time-varying previous marijuana use, time-varying previous use of other drugs, and birth year, all as linear terms. Use counting process format initially, and then use the programming statements method. Attach your code, output and log.