

Read data and install packages

```
In [64]: rm(list = ls())
library(dplyr)
library(ggplot2)
setwd("C:/Users/genelin3/Desktop/Regression/Week8")
df <- read.csv("prdsal2.csv")
df <- df %>% mutate(MONTH = format(as.Date(MONTH, origin = "1960-01-01"), format = "%m"),
                      MONYR = format(as.Date(MONYR, origin = "1960-01-01")),
                      diff = abs(ACTUAL - PREDICT))
head(df)
```

COUNTRY	STATE	COUNTY	ACTUAL	PREDICT	PRODTYPE	PRODUCT	YEAR	QUARTER
U.S.A.	California		987.36	692.24	FURNITURE	SOFA	1995	1
U.S.A.	California		1782.96	568.48	FURNITURE	SOFA	1995	1
U.S.A.	California		32.64	16.32	FURNITURE	SOFA	1995	1
U.S.A.	California		1825.12	756.16	FURNITURE	SOFA	1995	2
U.S.A.	California		750.72	723.52	FURNITURE	SOFA	1995	2
U.S.A.	California		2426.24	2428.96	FURNITURE	SOFA	1995	2

Use "group_by" & "summarise" to analysis sales in different conditions

```
In [3]: country_1 <- df %>% group_by(COUNTRY) %>% summarise(sale = mean(ACTUAL)) %>% arrange(-sale)
state_1 <- df %>% group_by(STATE) %>% summarise(sale = mean(ACTUAL)) %>% arrange(-sale)
county_1 <- df %>% group_by(COUNTY) %>% summarise(sale = mean(ACTUAL)) %>% arrange(-sale); county_1 <- county_1[-1,]
prodtype_1 <- df %>% group_by(PRODTYPE) %>% summarise(sale = mean(ACTUAL)) %>% arrange(-sale)
product_1 <- df %>% group_by(PRODUCT) %>% summarise(sale = mean(ACTUAL)) %>% arrange(-sale)
year_1 <- df %>% group_by(YEAR) %>% summarise(sale = mean(ACTUAL)) %>% arrange(-sale)
quarter_1 <- df %>% group_by(QUARTER) %>% summarise(sale = mean(ACTUAL)) %>% arrange(-sale)
month_1 <- df %>% group_by(MONTH) %>% summarise(sale = mean(ACTUAL)) %>% arrange(-sale)
```

Use "group_by" & "summarise" to analysis error in different conditions

```
In [25]: country_2 <- df %>% group_by(COUNTRY) %>% summarise(error = mean(diff)) %>% arrange(error)
state_2 <- df %>% group_by(STATE) %>% summarise(error = mean(diff)) %>% arrange(error)
county_2 <- df %>% group_by(COUNTY) %>% summarise(error = mean(diff)) %>% arrange(error)
prodtype_2 <- df %>% group_by(PRODTYPE) %>% summarise(error = mean(diff)) %>% arrange(error); county_2 <- county_2[-6,]
product_2 <- df %>% group_by(PRODUCT) %>% summarise(error = mean(diff)) %>% arrange(error)
year_2 <- df %>% group_by(YEAR) %>% summarise(error = mean(diff)) %>% arrange(error)
quarter_2 <- df %>% group_by(QUARTER) %>% summarise(error = mean(diff)) %>% arrange(error)
month_2 <- df %>% group_by(MONTH) %>% summarise(error = mean(diff)) %>% arrange(error)
```

The highest of sales

```
In [51]: final <- df %>% group_by(COUNTRY, STATE, YEAR, QUARTER, MONTH, PRODUCT) %>% summarise(sale = mean(ACTUAL), error = mean(diff)) %>% arrange(~sale)
head(final)
```

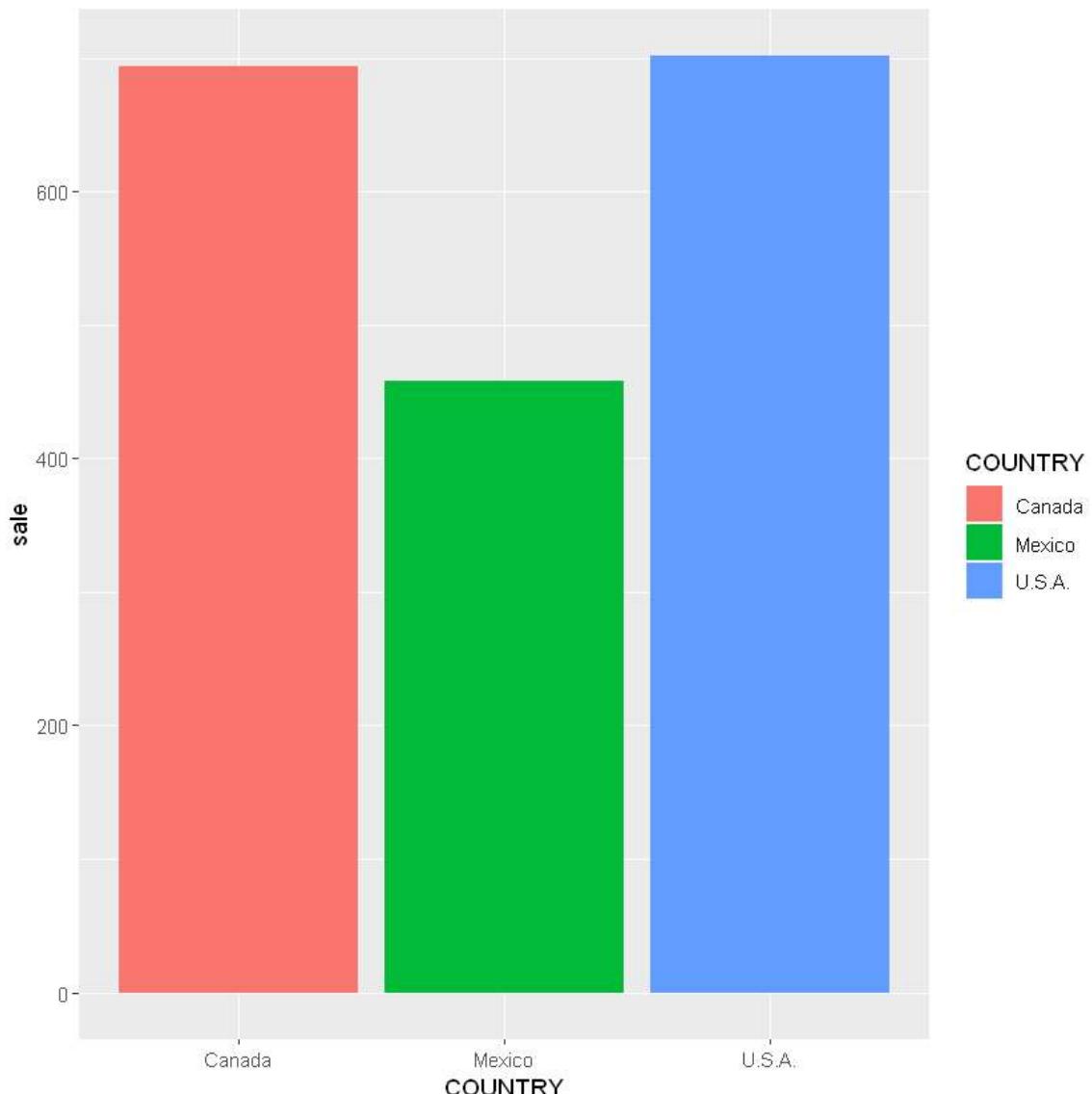
COUNTRY	STATE	YEAR	QUARTER	MONTH	PRODUCT	sale	error
U.S.A.	California	1997	2	05	DESK	2536.400	1123.133
U.S.A.	New York	1997	2	06	DESK	2521.067	1547.467
U.S.A.	New York	1998	1	03	DESK	2508.800	560.800
U.S.A.	New York	1997	4	10	BED	2489.600	1246.133
U.S.A.	Texas	1997	3	09	SOFA	2456.250	1660.750
U.S.A.	California	1998	3	08	BED	2452.533	1306.450

The lowest of error

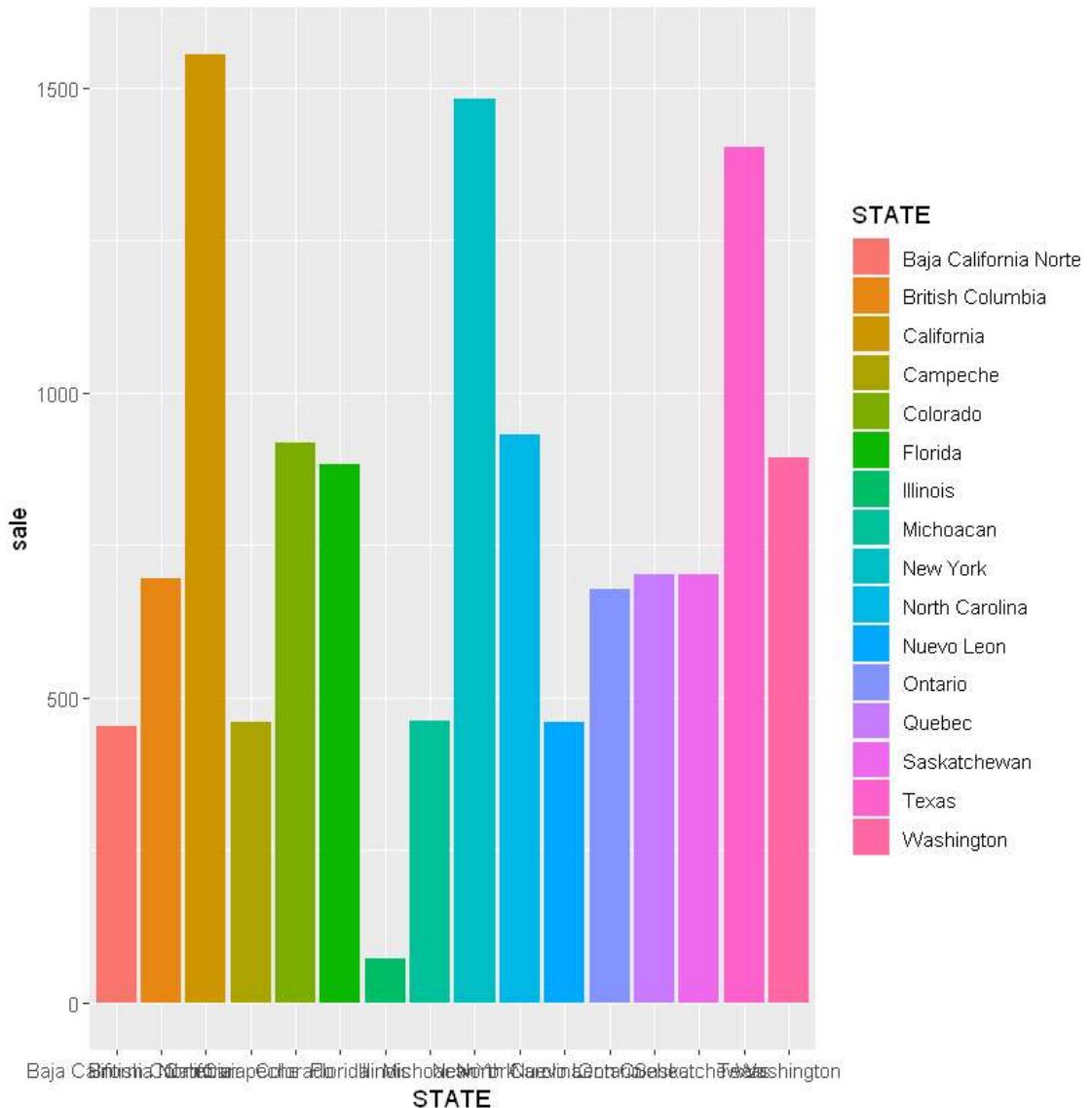
```
In [52]: head(arrange(final, error))
```

COUNTRY	STATE	YEAR	QUARTER	MONTH	PRODUCT	sale	error
U.S.A.	Illinois	1996	1	03	CHAIR	54.18872	30.84308
U.S.A.	Illinois	1995	2	05	SOFA	69.87897	31.28205
U.S.A.	Illinois	1995	3	08	CHAIR	62.80615	31.51179
U.S.A.	Illinois	1995	3	08	DESK	60.20103	32.04308
U.S.A.	Illinois	1995	1	02	CHAIR	64.35282	32.60103
U.S.A.	Illinois	1995	2	06	DESK	72.99077	32.82051

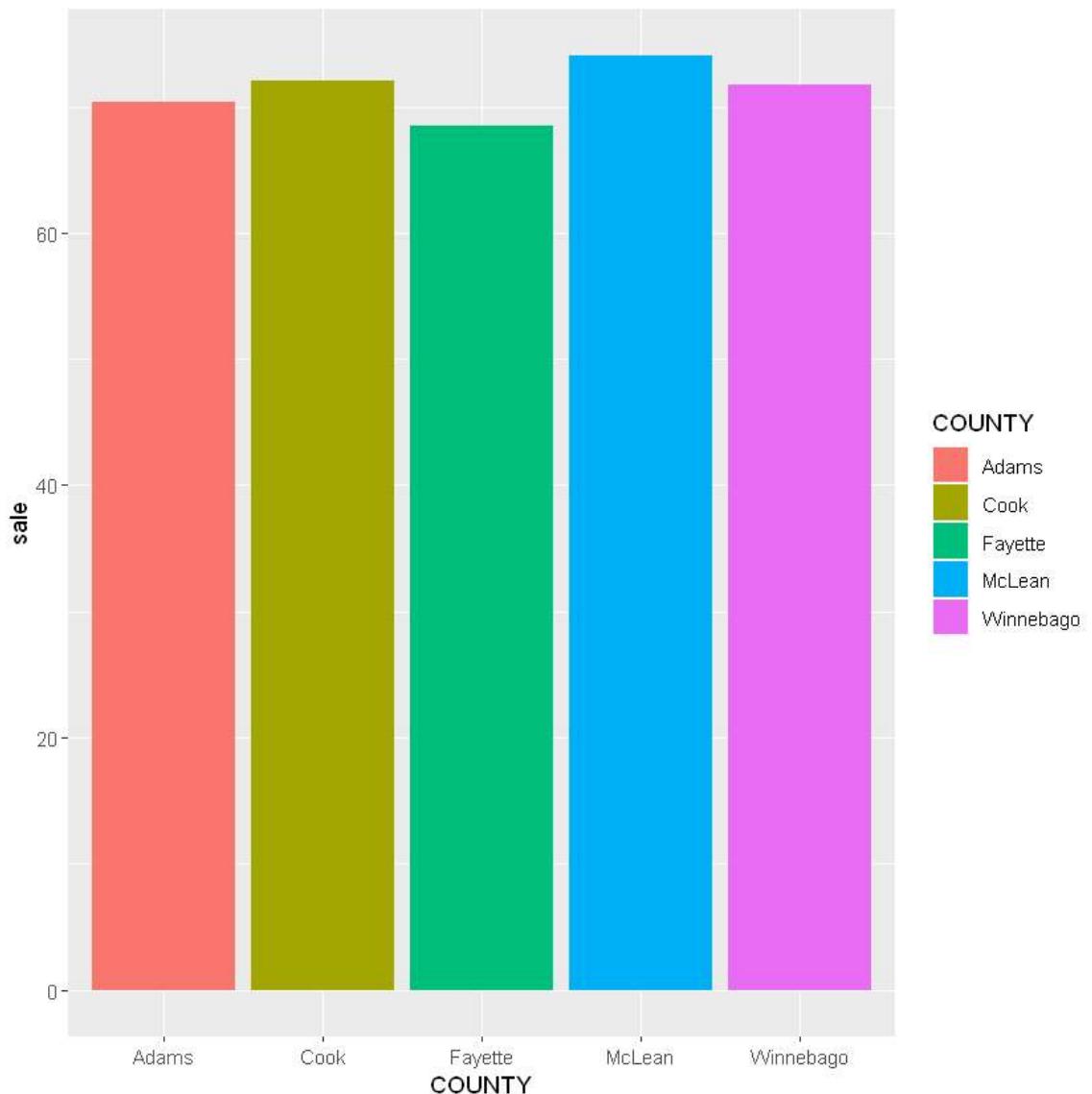
```
In [4]: p1 <- ggplot(country_1, aes(x = COUNTRY, y = sale))+geom_col(aes(fill = COUNTRY));p1
```



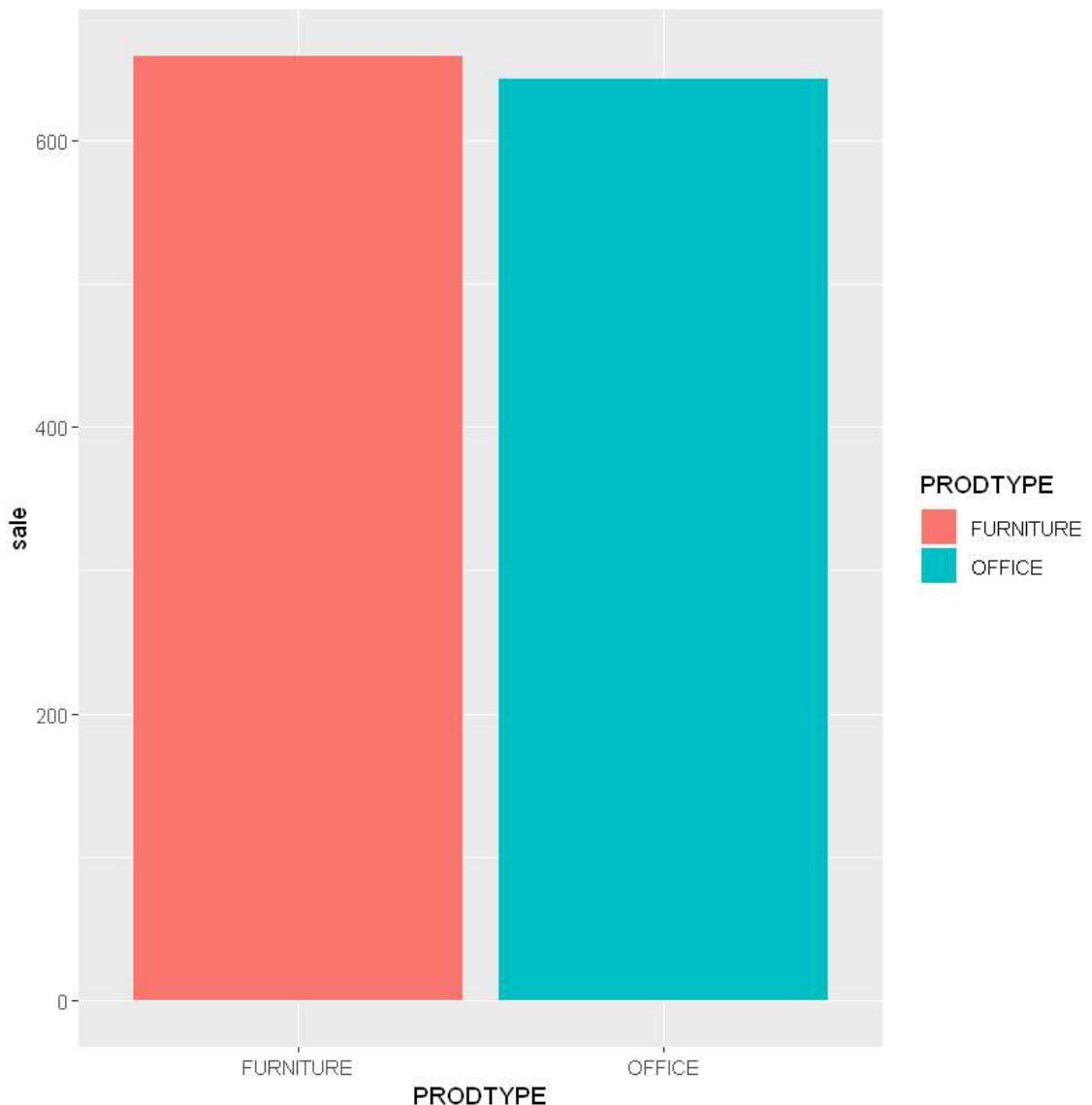
```
In [5]: p2 <- ggplot(state_1, aes(x = STATE, y = sale))+geom_col(aes(fill = STATE));p2
```



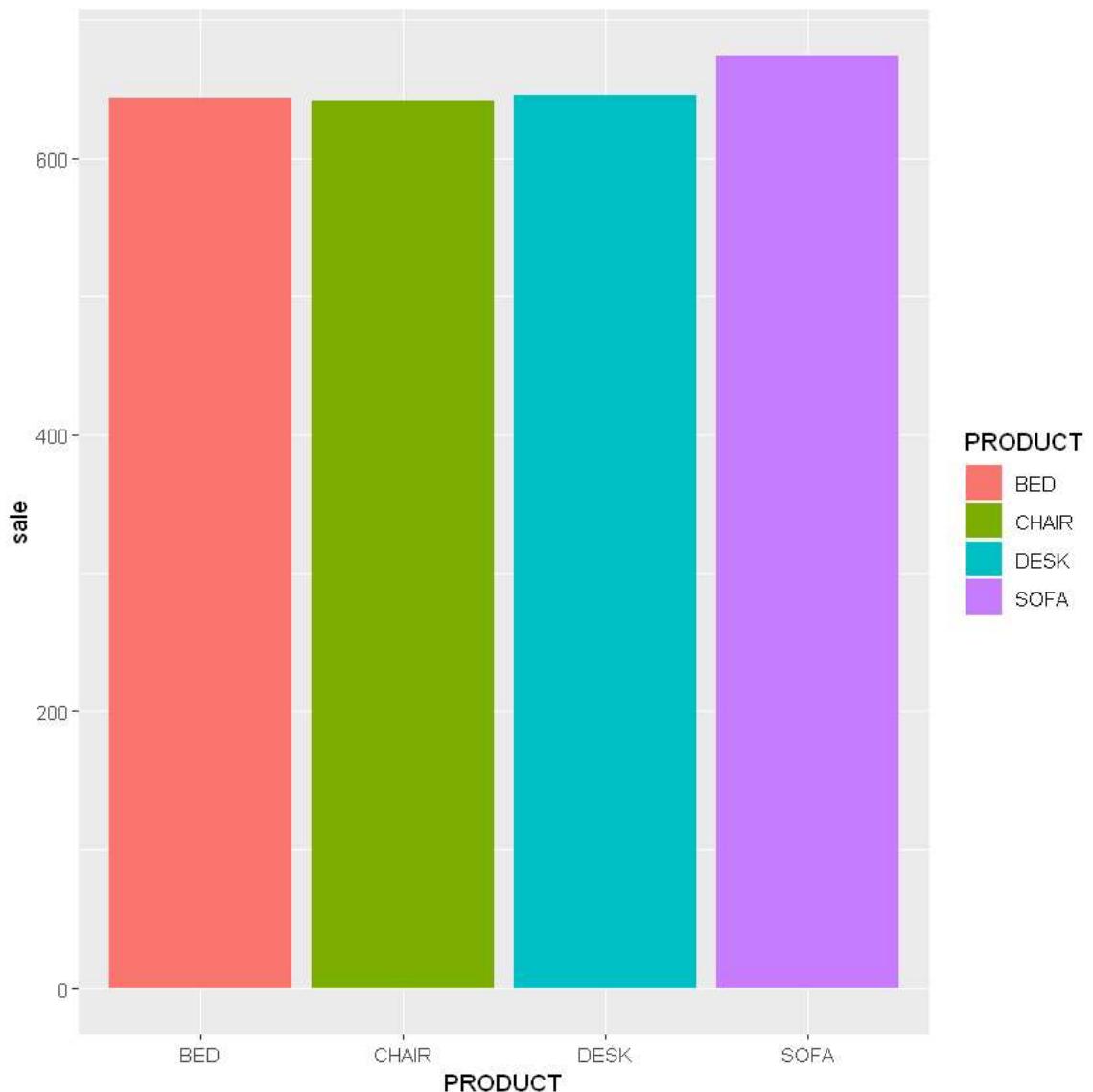
```
In [9]: p3 <- ggplot(county_1, aes(x = COUNTY, y = sale))+geom_col(aes(fill = COUNT Y));p3
```



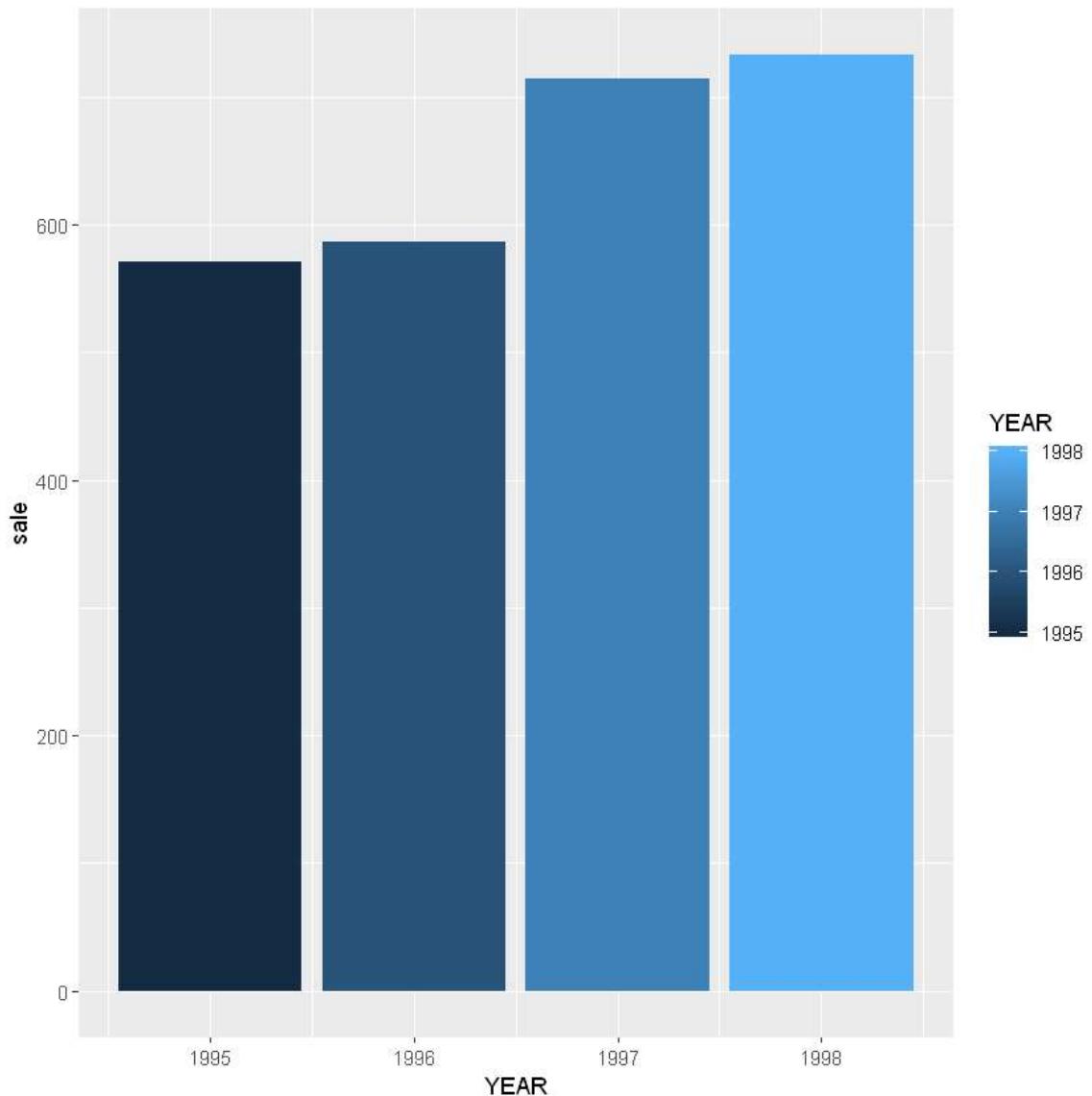
```
In [8]: p4 <- ggplot(prodtype_1, aes(x = PRODTYPE, y = sale))+geom_col(aes(fill = PRODTYPE));p4
```



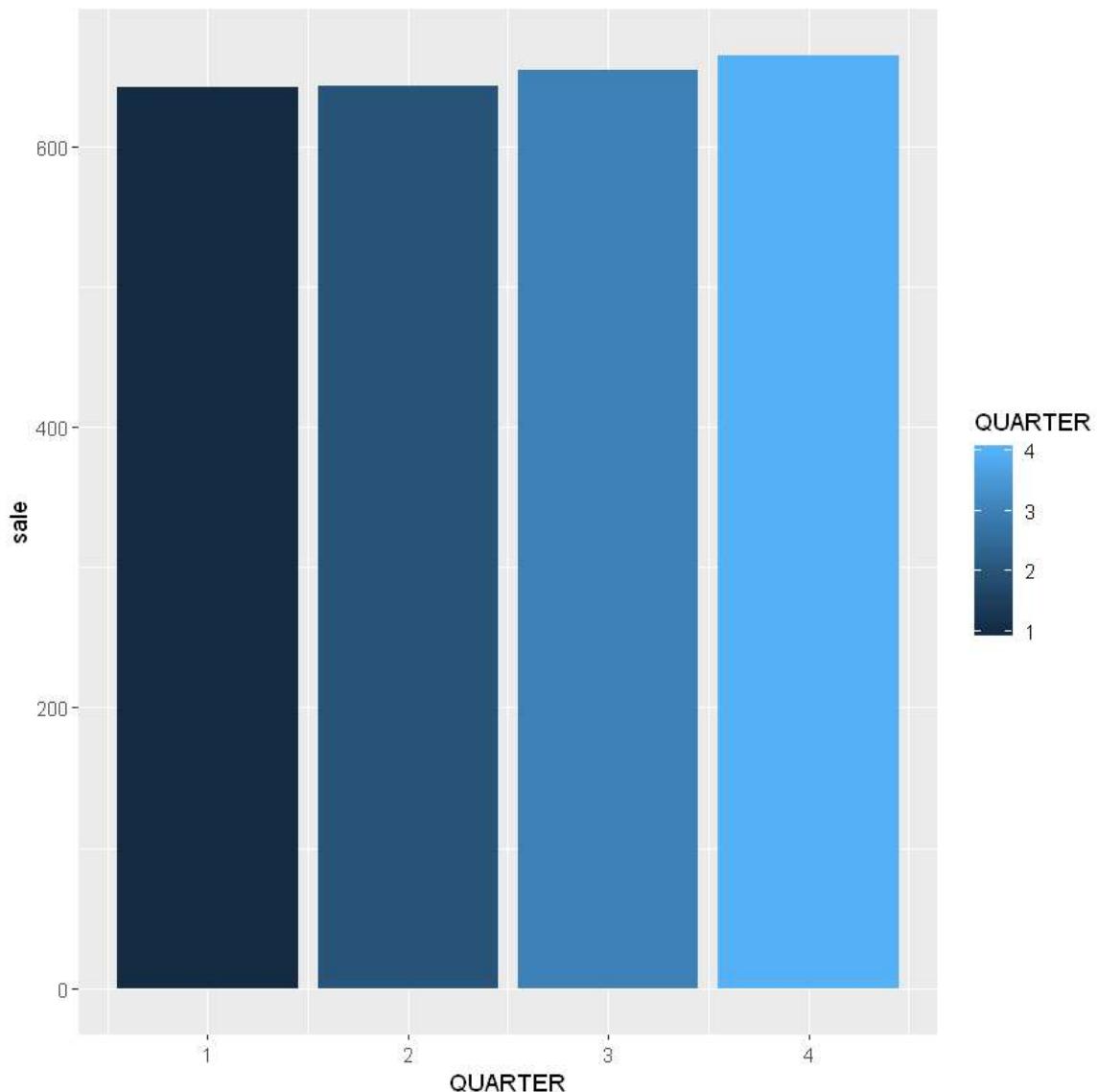
```
In [7]: p5 <- ggplot(product_1, aes(x = PRODUCT, y = sale))+geom_col(aes(fill = PRODUCT));p5
```



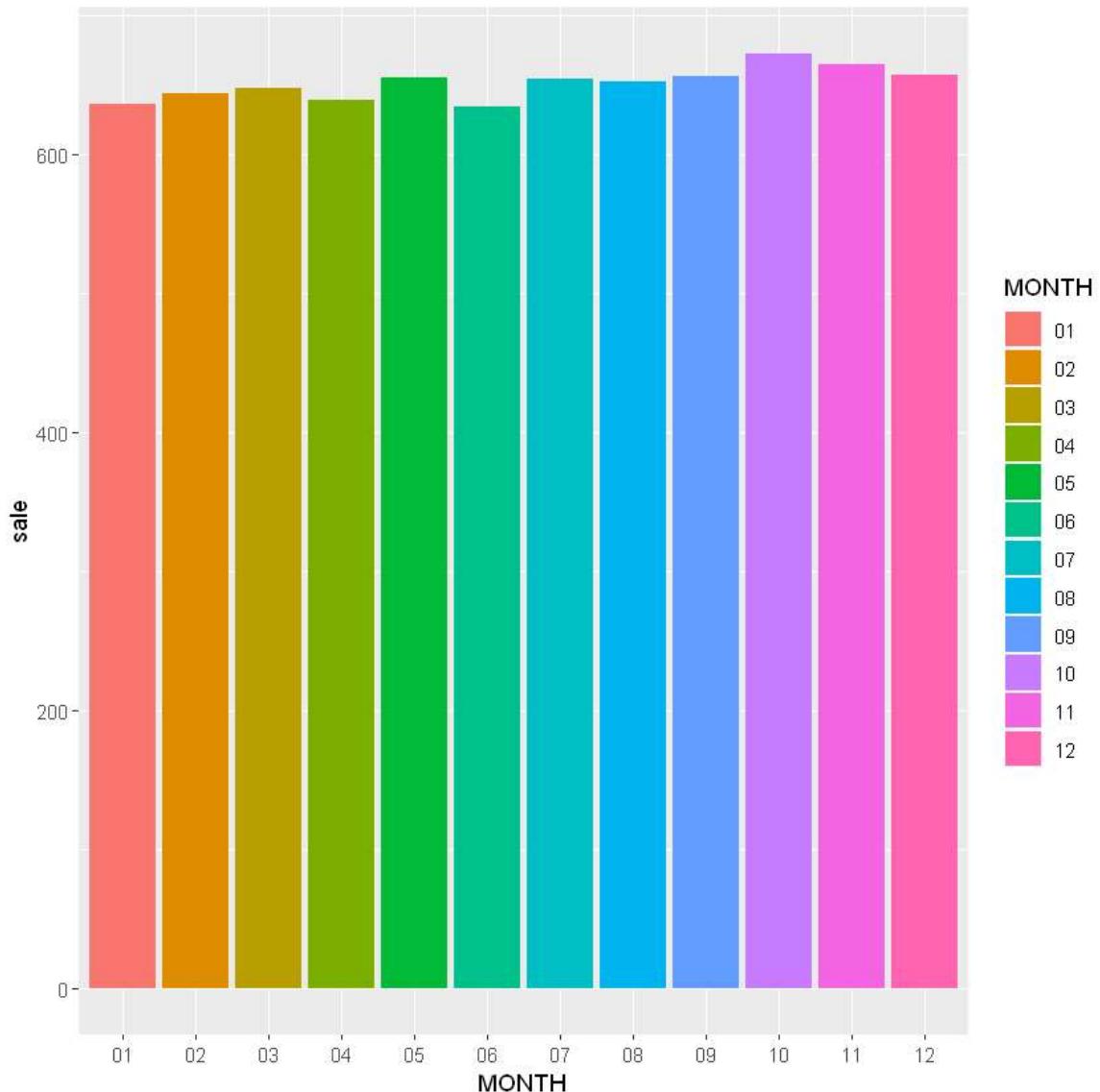
```
In [10]: p6 <- ggplot(year_1, aes(x = YEAR, y = sale))+geom_col(aes(fill = YEAR));p6
```



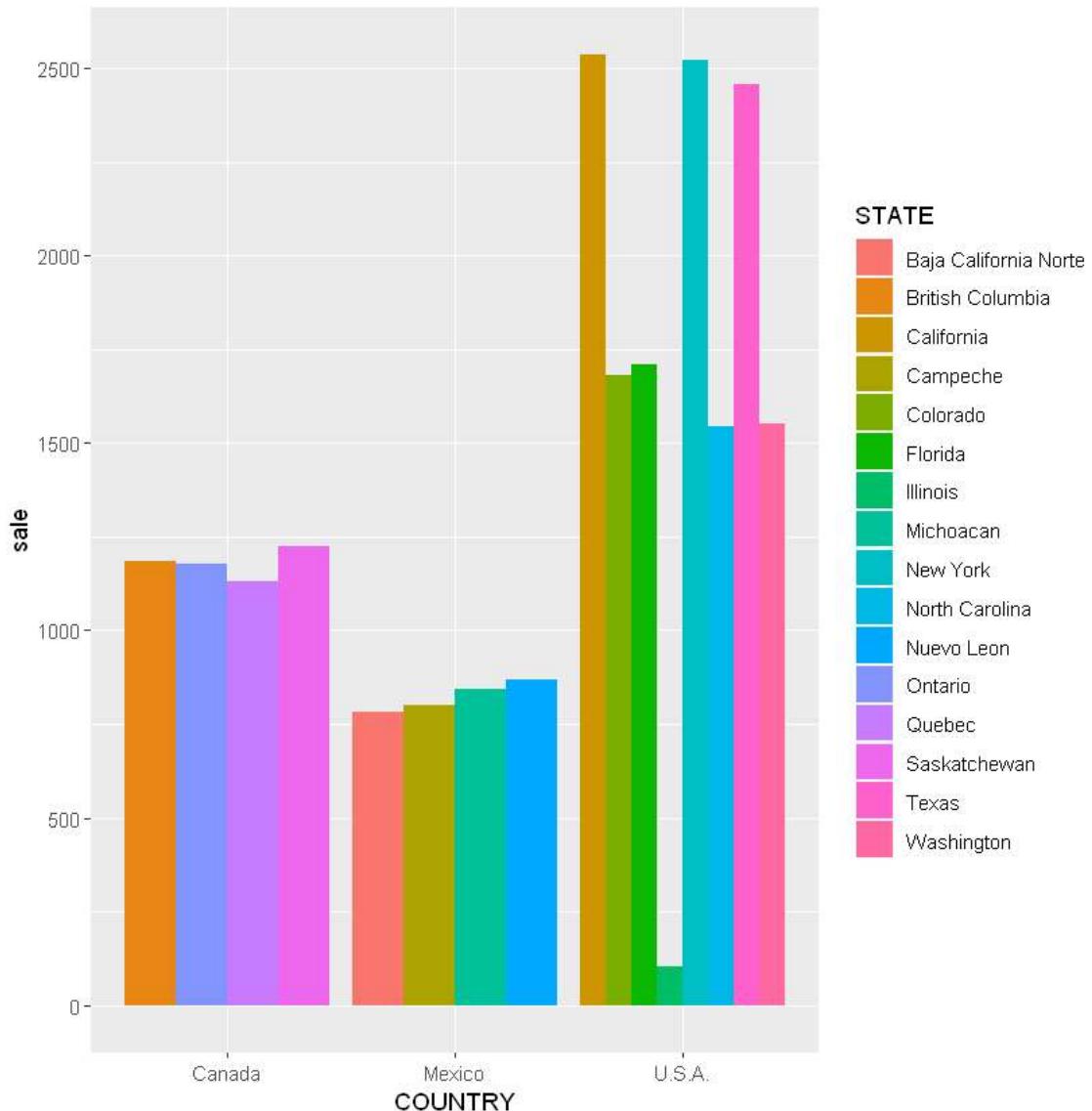
```
In [14]: p7 <- ggplot(quarter_1, aes(x = QUARTER, y = sale))+geom_col(aes(fill = QUARTER));p7
```



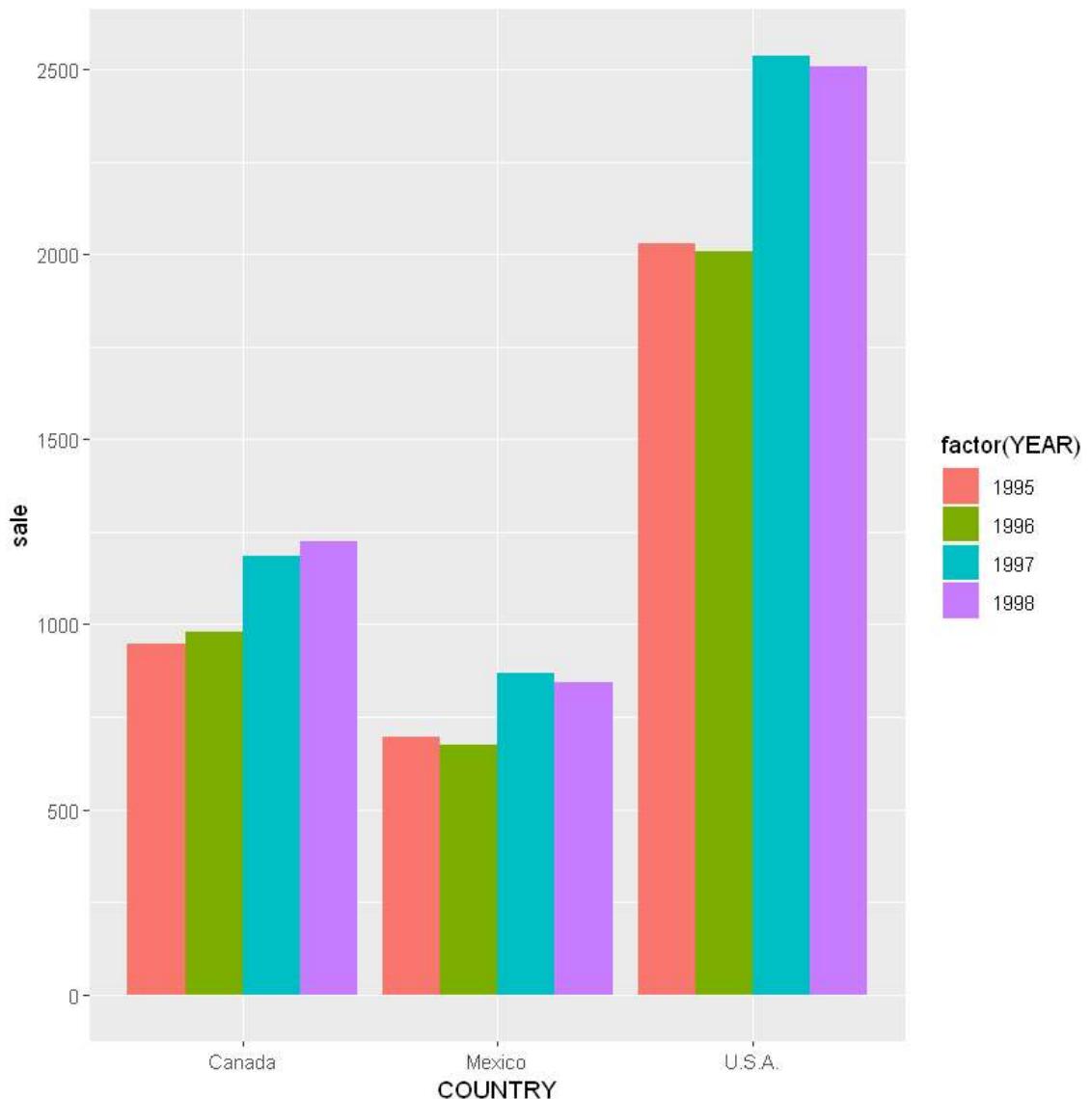
```
In [12]: p8 <- ggplot(month_1, aes(x = MONTH, y = sale))+geom_col(aes(fill = MONTH));p8
```



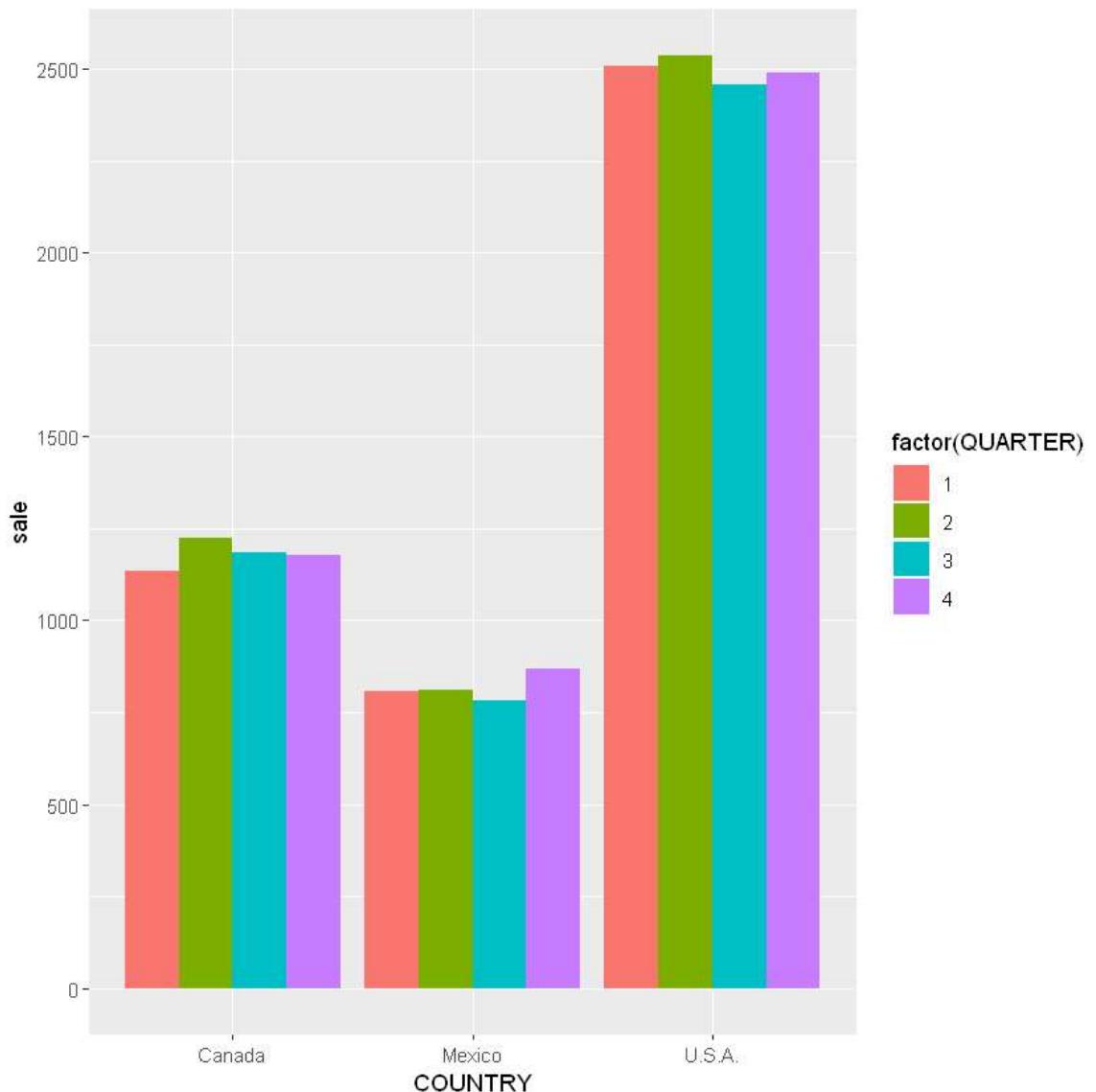
```
In [15]: p9 <- ggplot(final, aes(x = COUNTRY, y = sale))+geom_col(aes(fill = STATE),  
position = "dodge");p9
```



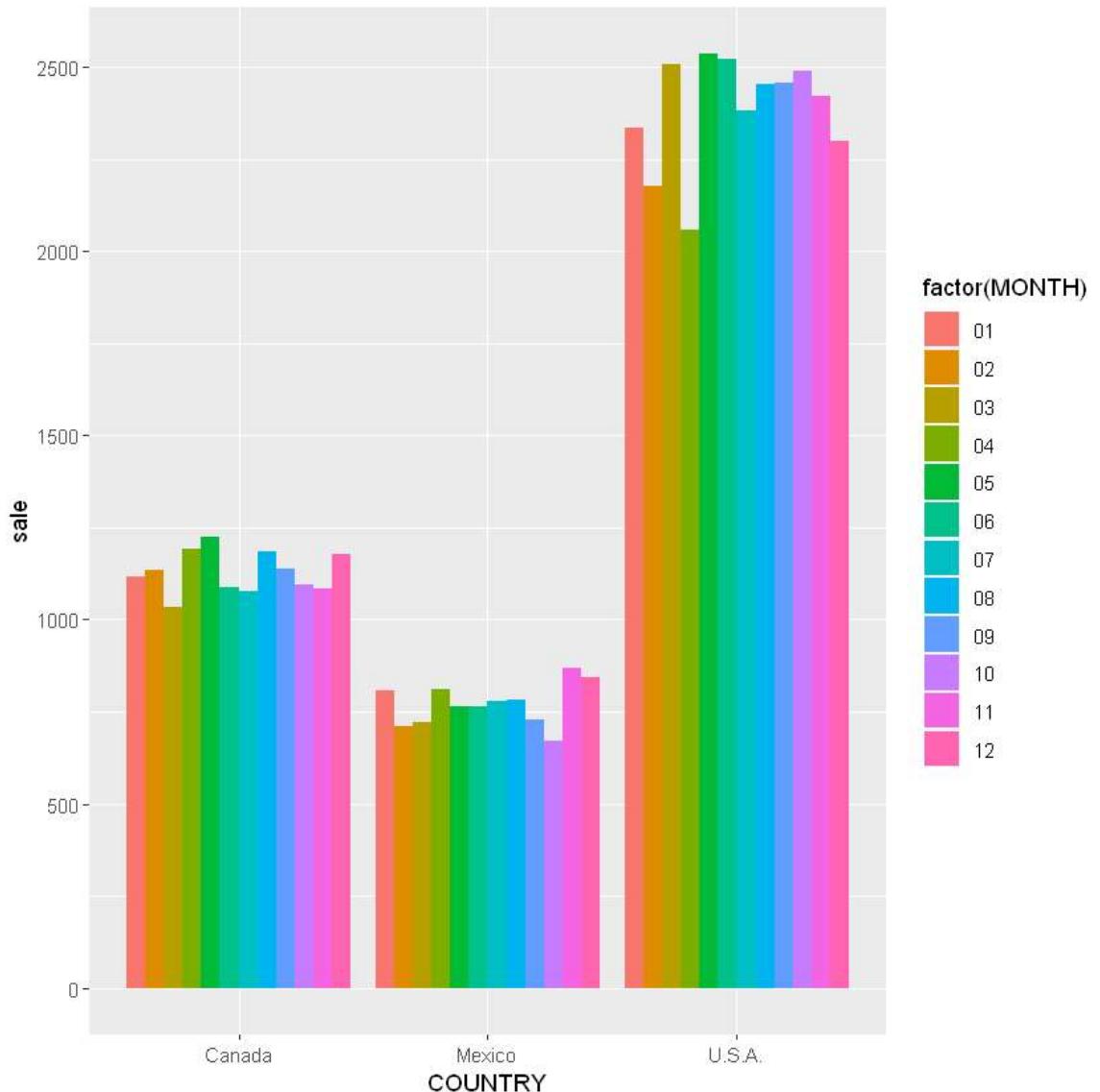
```
In [16]: p10 <- ggplot(final, aes(x = COUNTRY, y = sale))+geom_col(aes(fill = factor(YEAR)), position = "dodge");p10
```



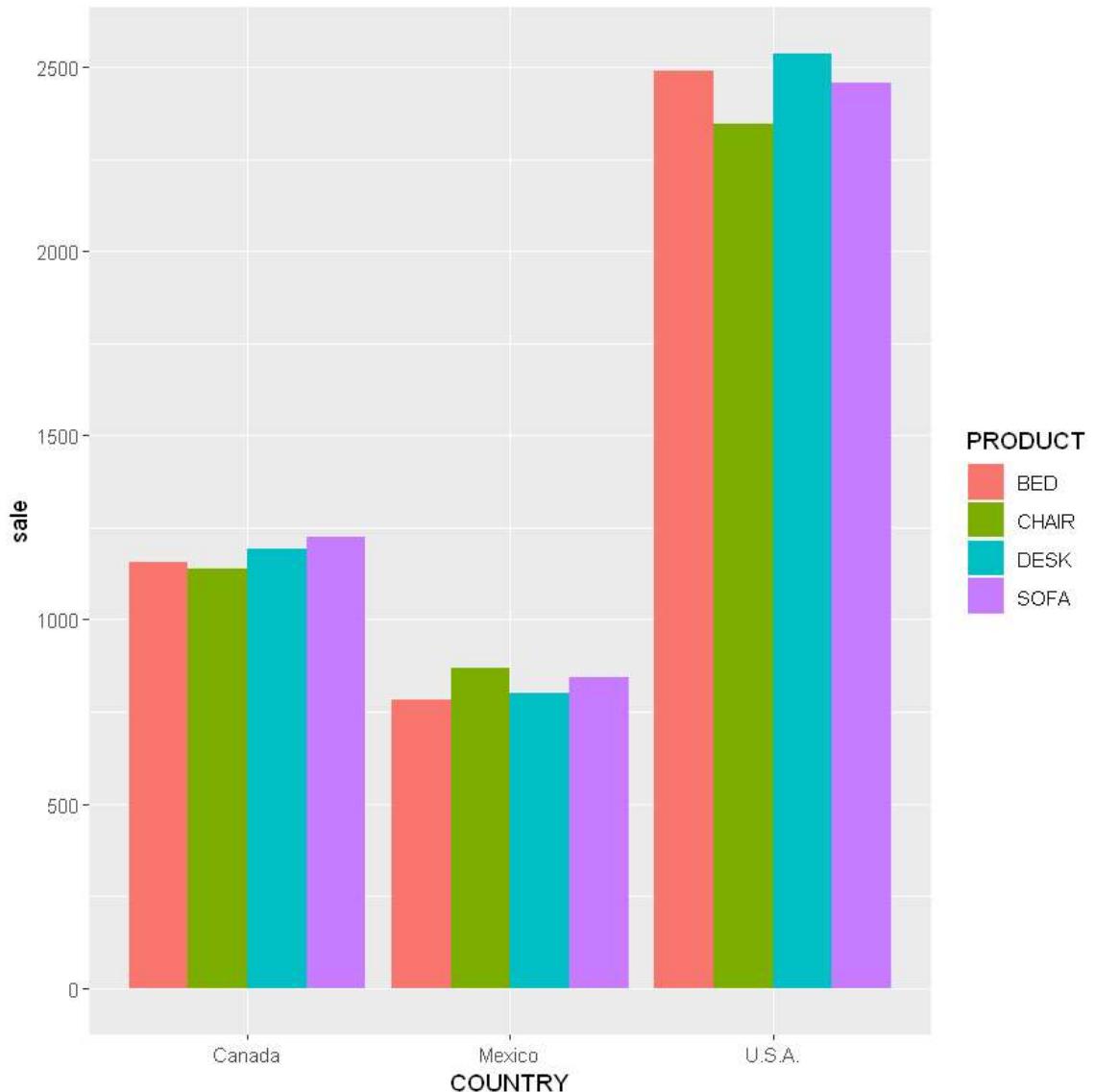
```
In [21]: p11 <- ggplot(final, aes(x = COUNTRY, y = sale))+geom_col(aes(fill = factor(QUARTER)), position = "dodge");p11
```



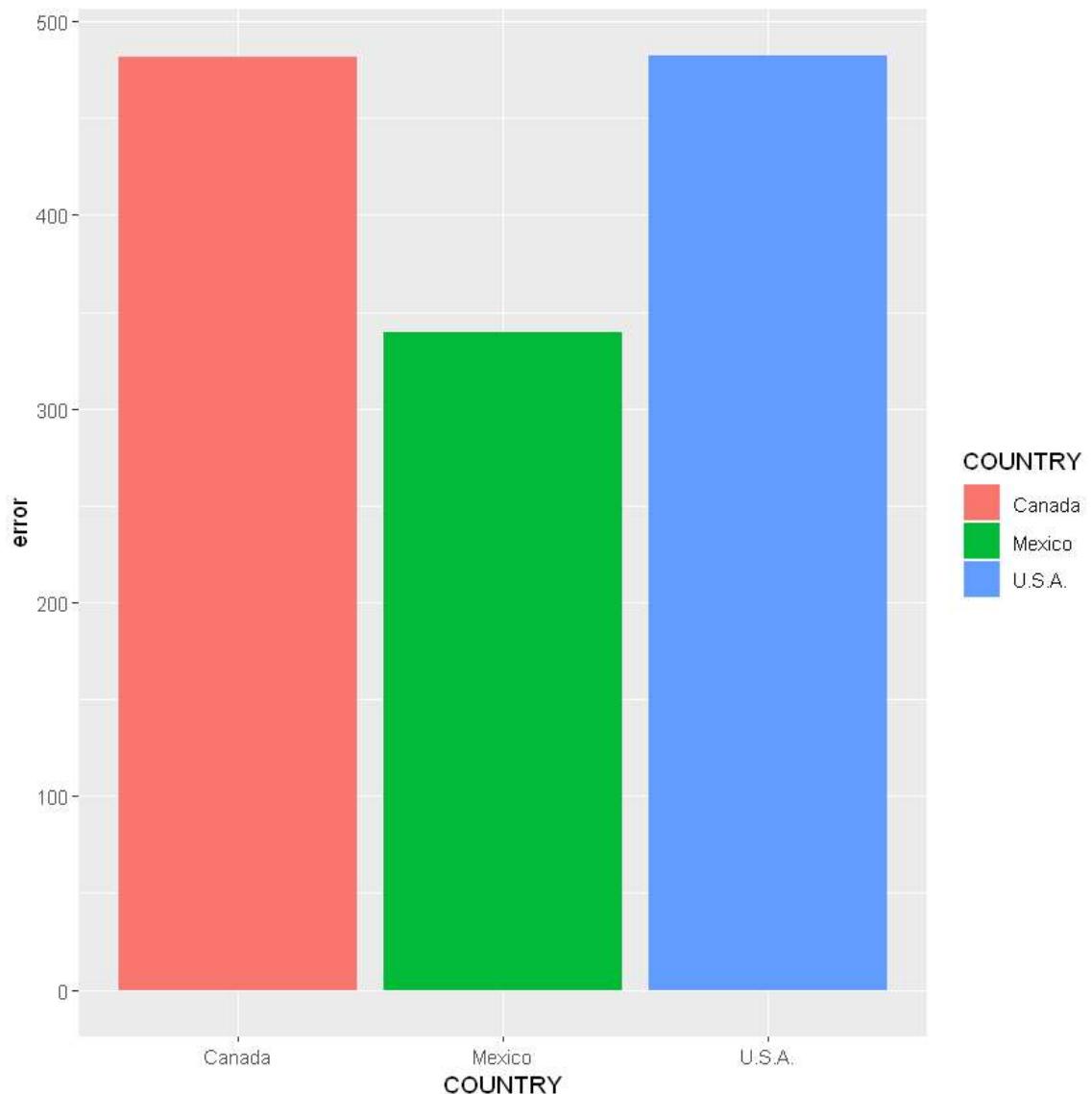
```
In [22]: p12 <- ggplot(final, aes(x = COUNTRY, y = sale))+geom_col(aes(fill = factor(MONTH)), position = "dodge");p12
```



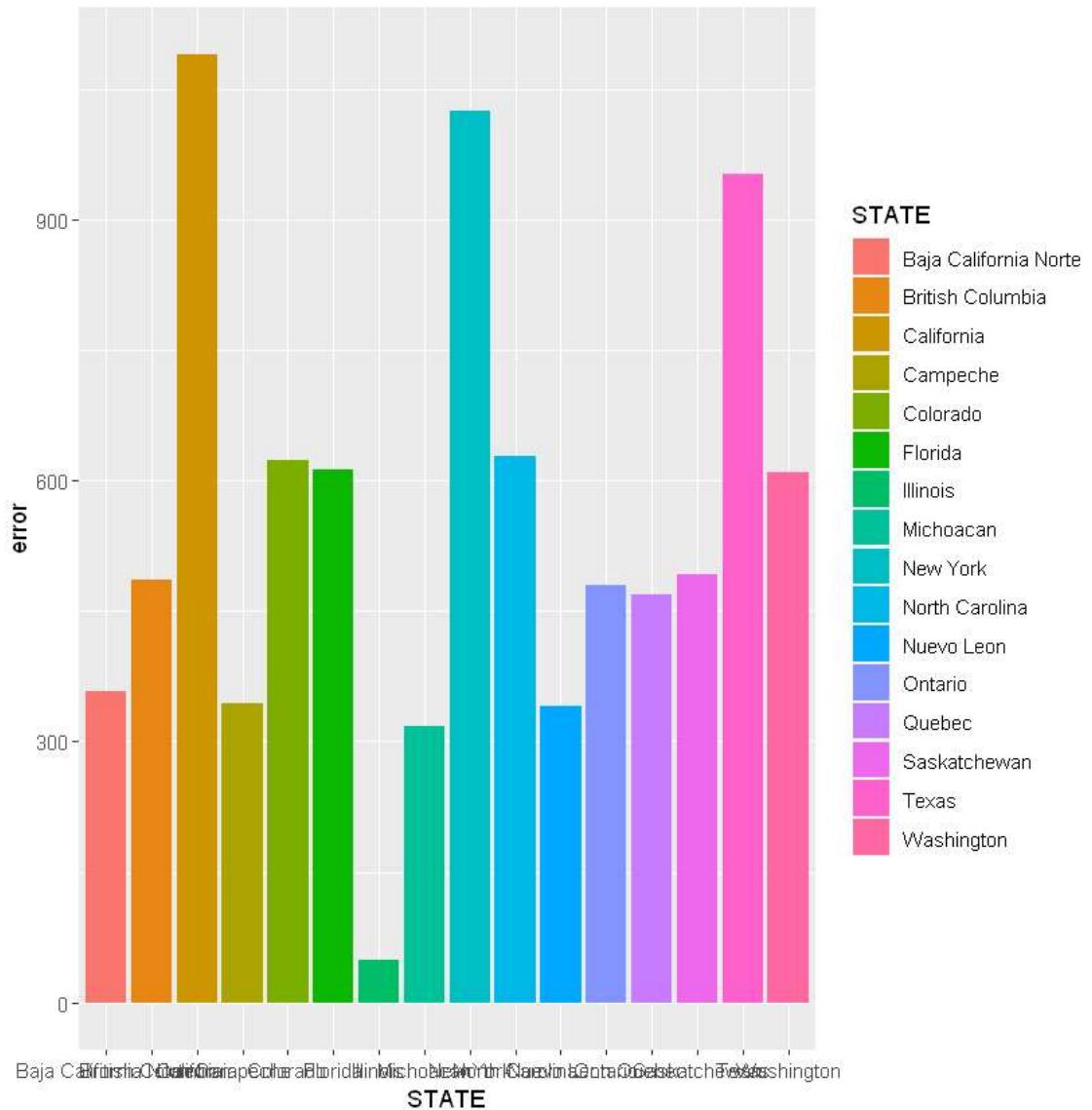
```
In [23]: p13 <- ggplot(final, aes(x = COUNTRY, y = sale))+geom_col(aes(fill = PRODUCT), position = "dodge");p13
```



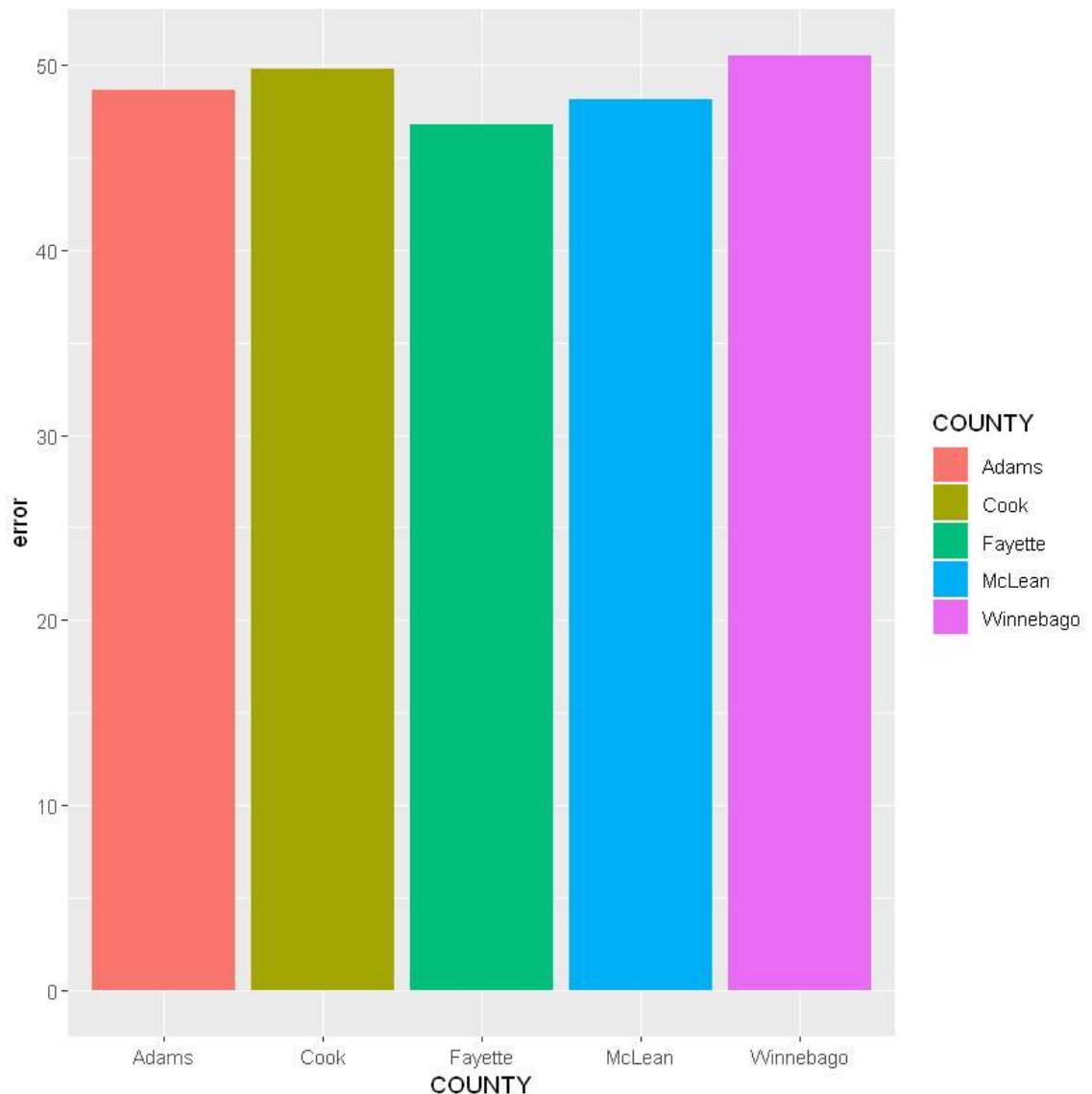
```
In [26]: q1 <- ggplot(country_2, aes(x = COUNTRY, y = error))+geom_col(aes(fill = COUNTRY));q1
```



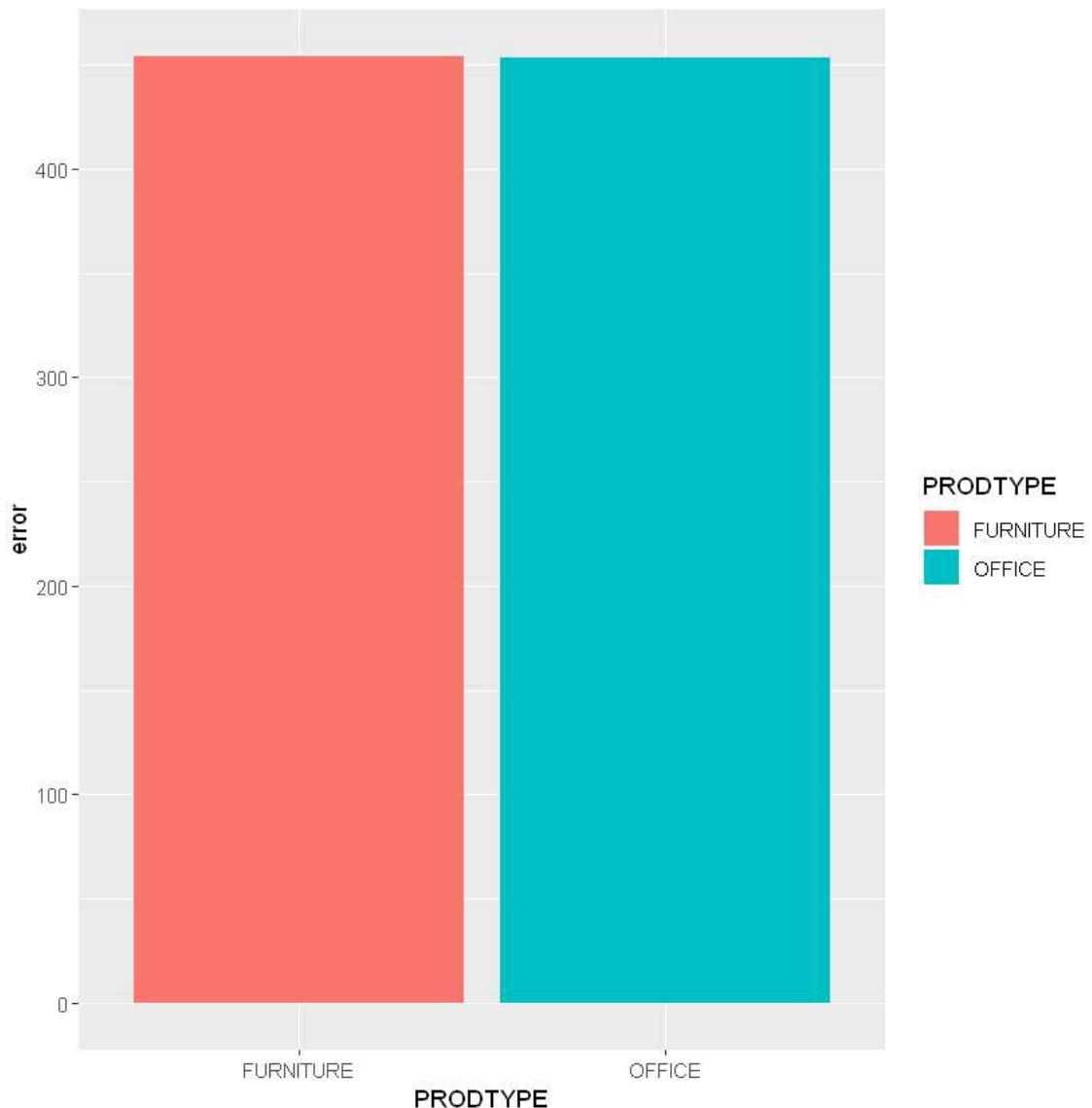
```
In [27]: q2 <- ggplot(state_2, aes(x = STATE, y = error))+geom_col(aes(fill = STATE));q2
```



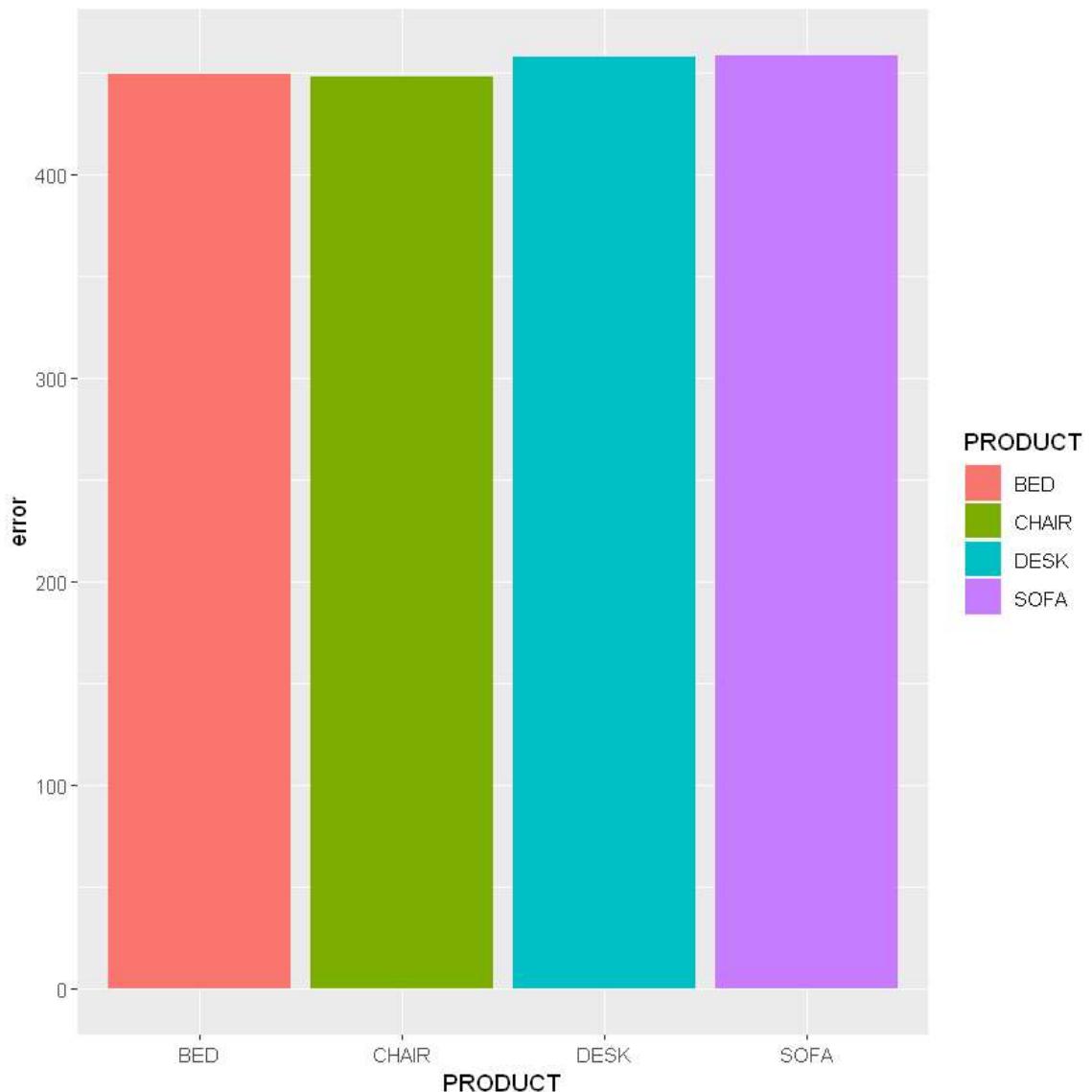
```
In [28]: q3 <- ggplot(county_2, aes(x = COUNTY, y = error))+geom_col(aes(fill = COUNTY));q3
```



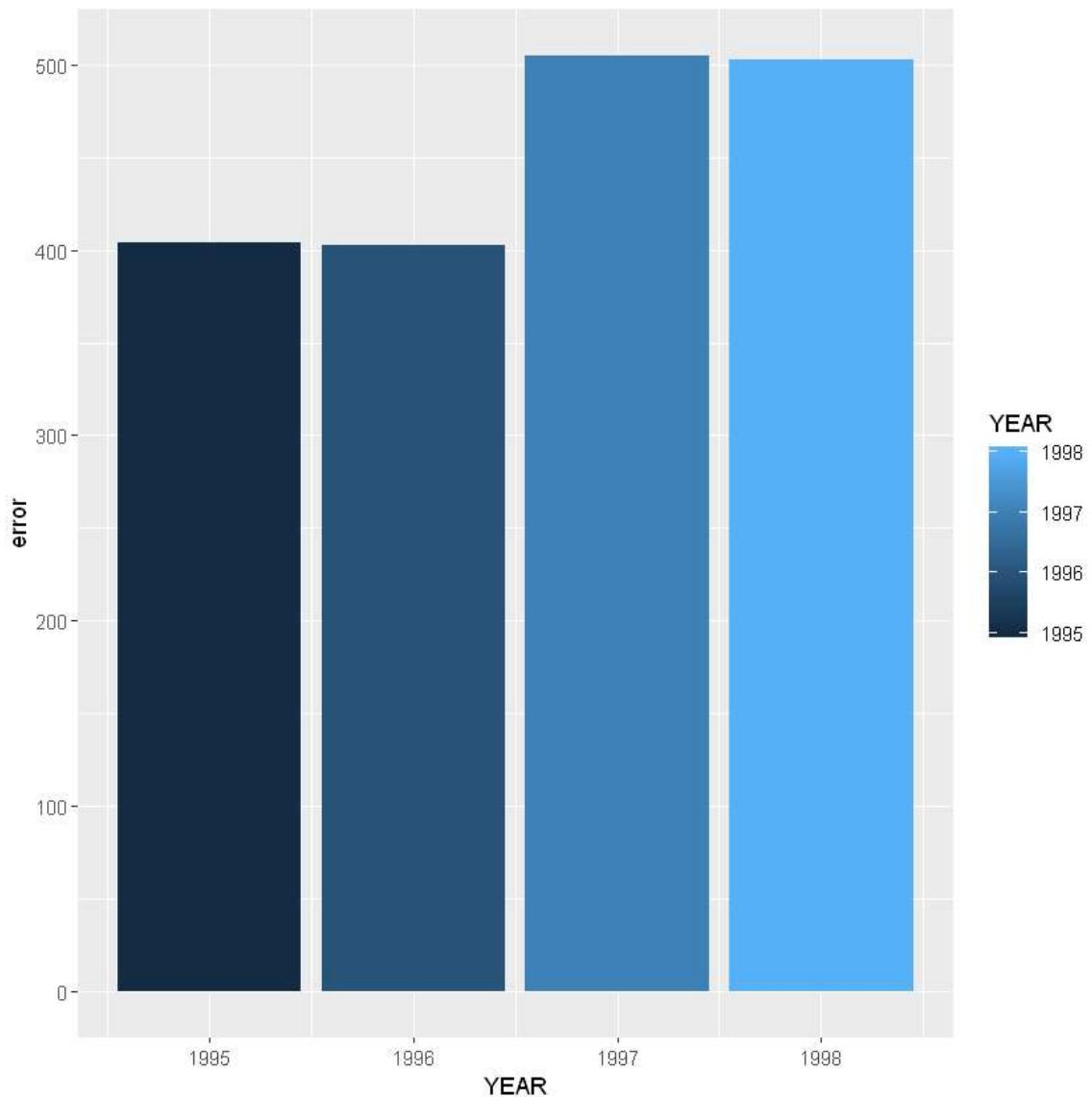
```
In [29]: q4 <- ggplot(prodtype_2, aes(x = PRODTYPE, y = error))+geom_col(aes(fill = PRODTYPE));q4
```



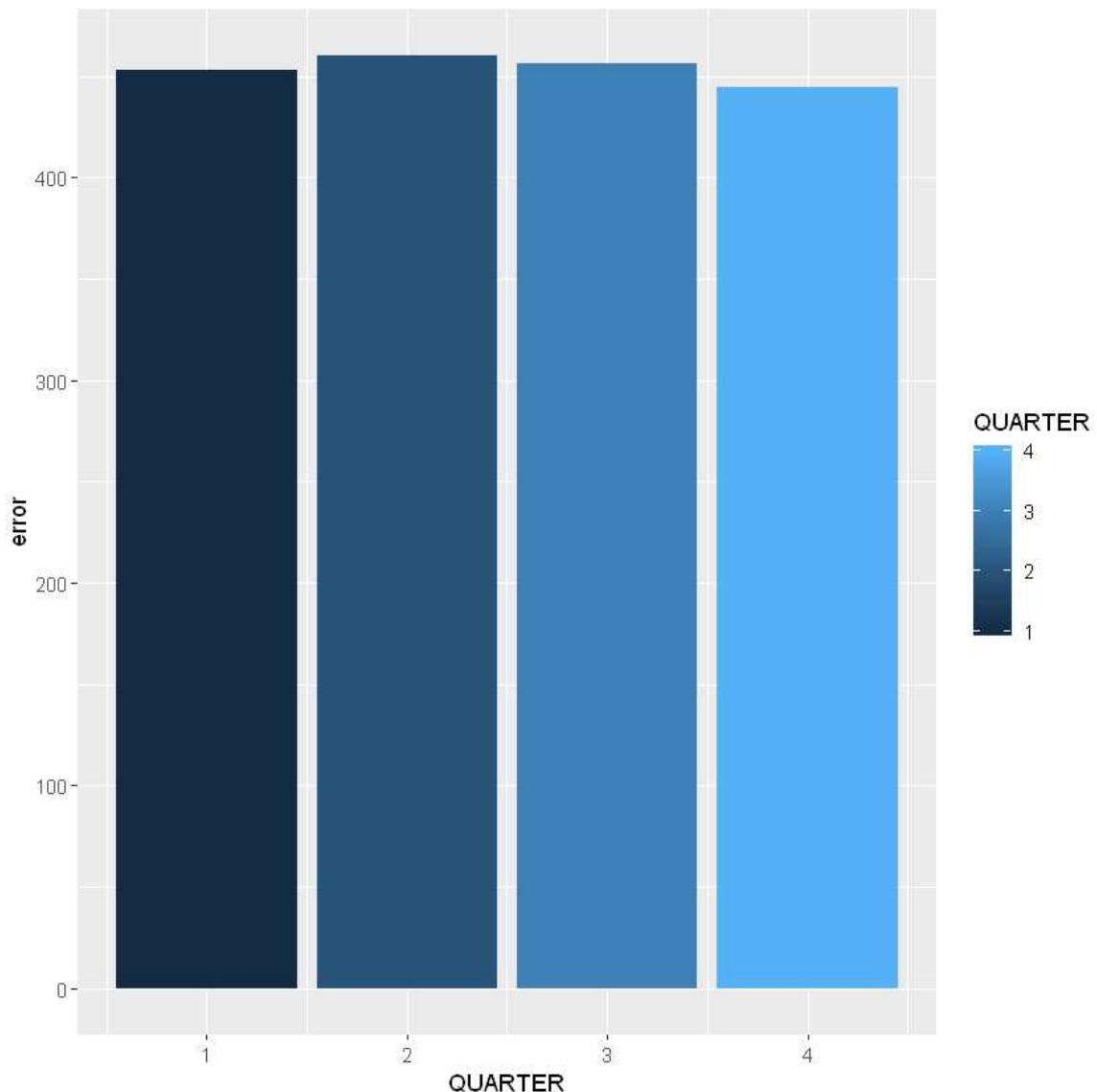
```
In [30]: q5 <- ggplot(product_2, aes(x = PRODUCT, y = error))+geom_col(aes(fill = PRODUCT));q5
```



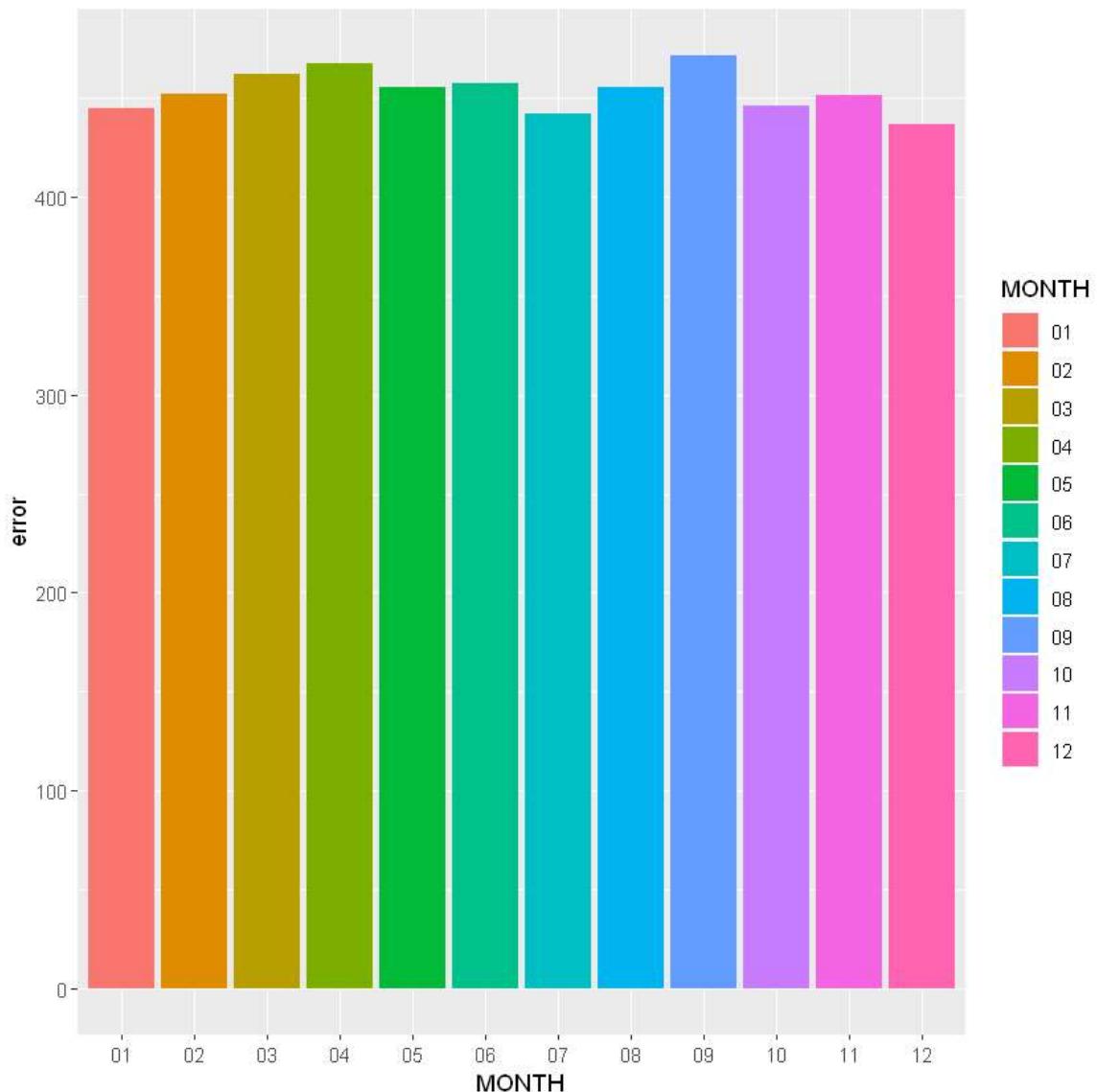
```
In [31]: q6 <- ggplot(year_2, aes(x = YEAR, y = error))+geom_col(aes(fill = YEAR));q  
6
```



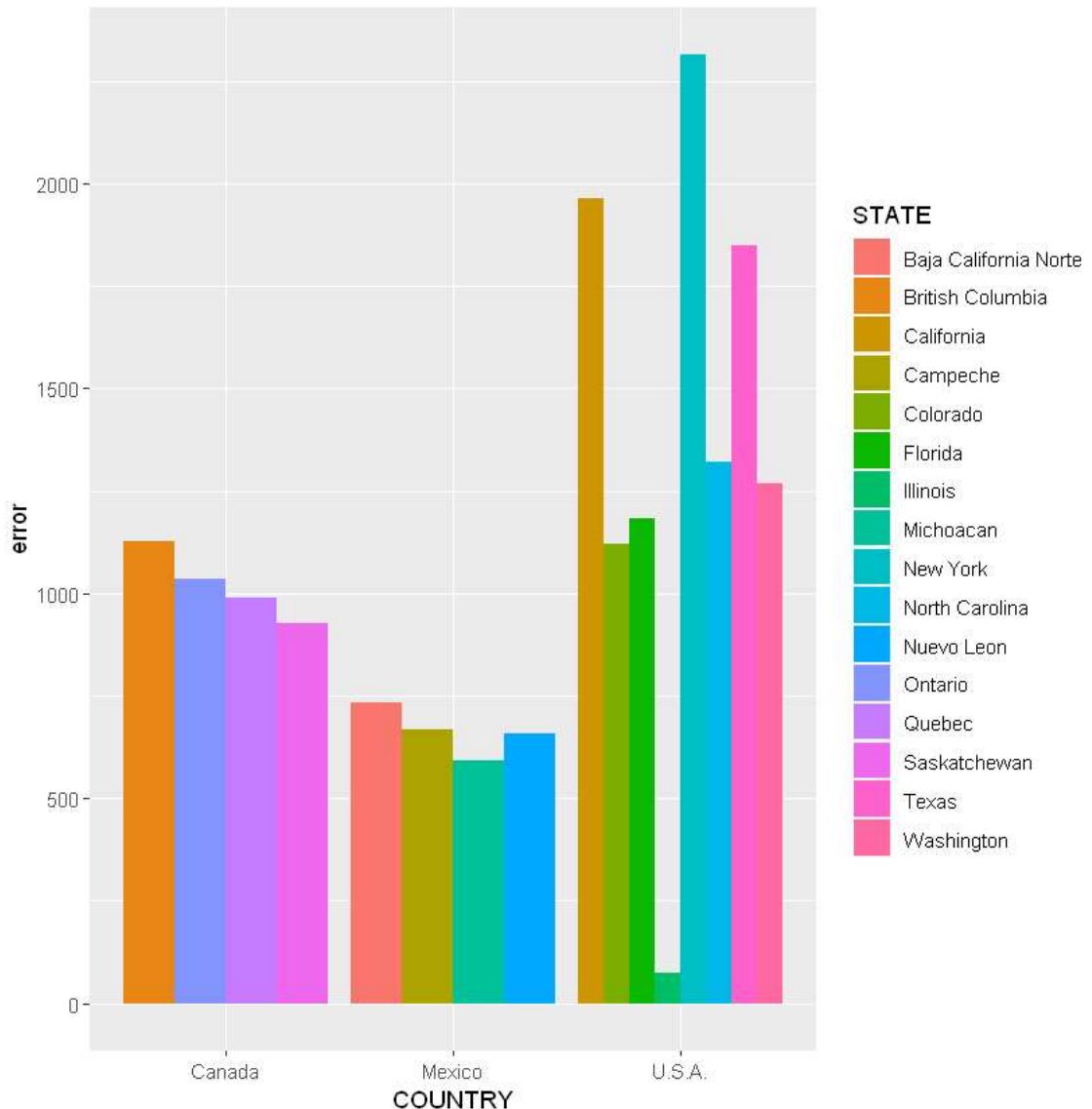
```
In [32]: q7 <- ggplot(quarter_2, aes(x = QUARTER, y = error))+geom_col(aes(fill = QUARTER));q7
```



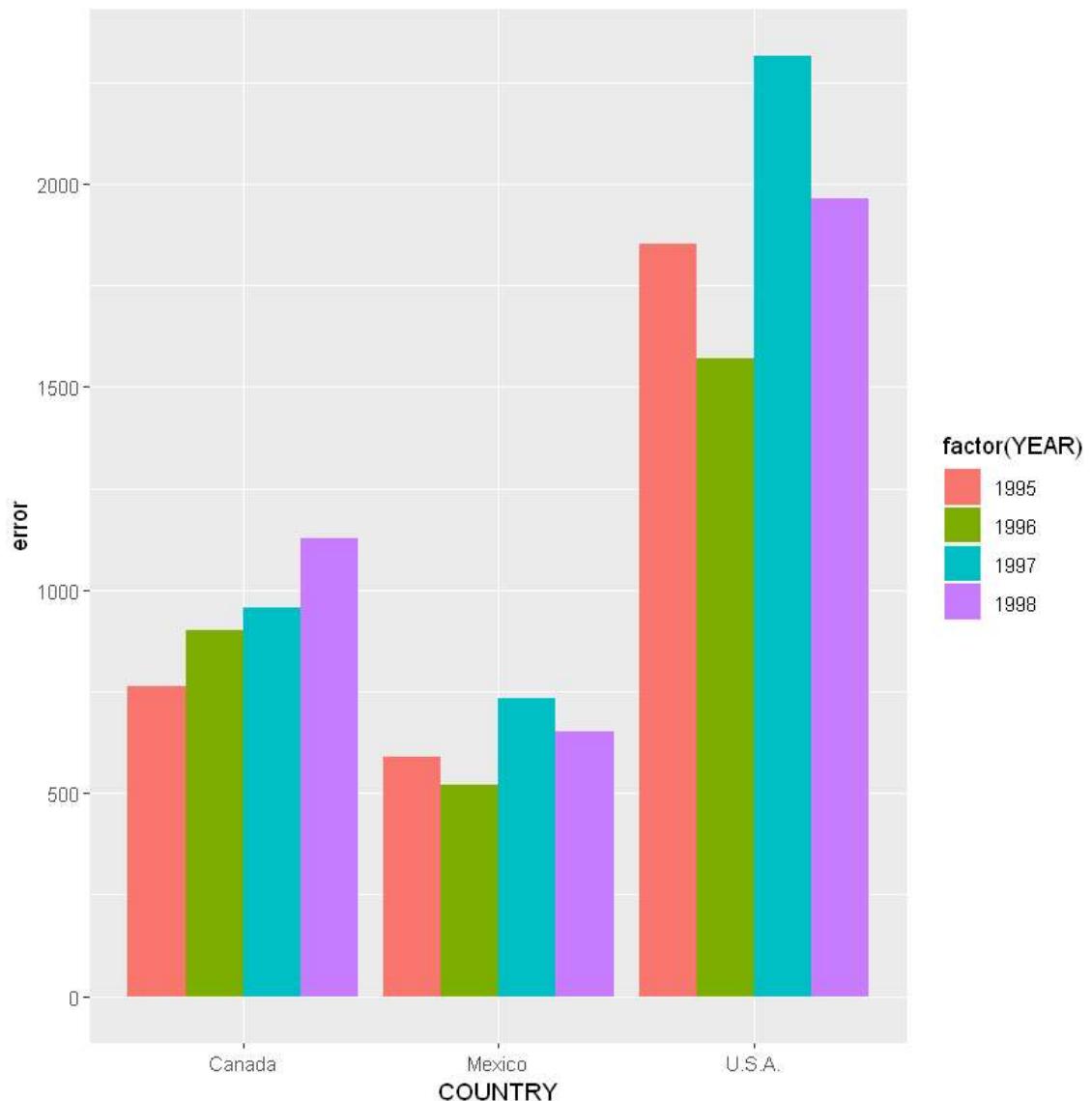
```
In [33]: q8 <- ggplot(month_2, aes(x = MONTH, y = error))+geom_col(aes(fill = MONTH));q8
```



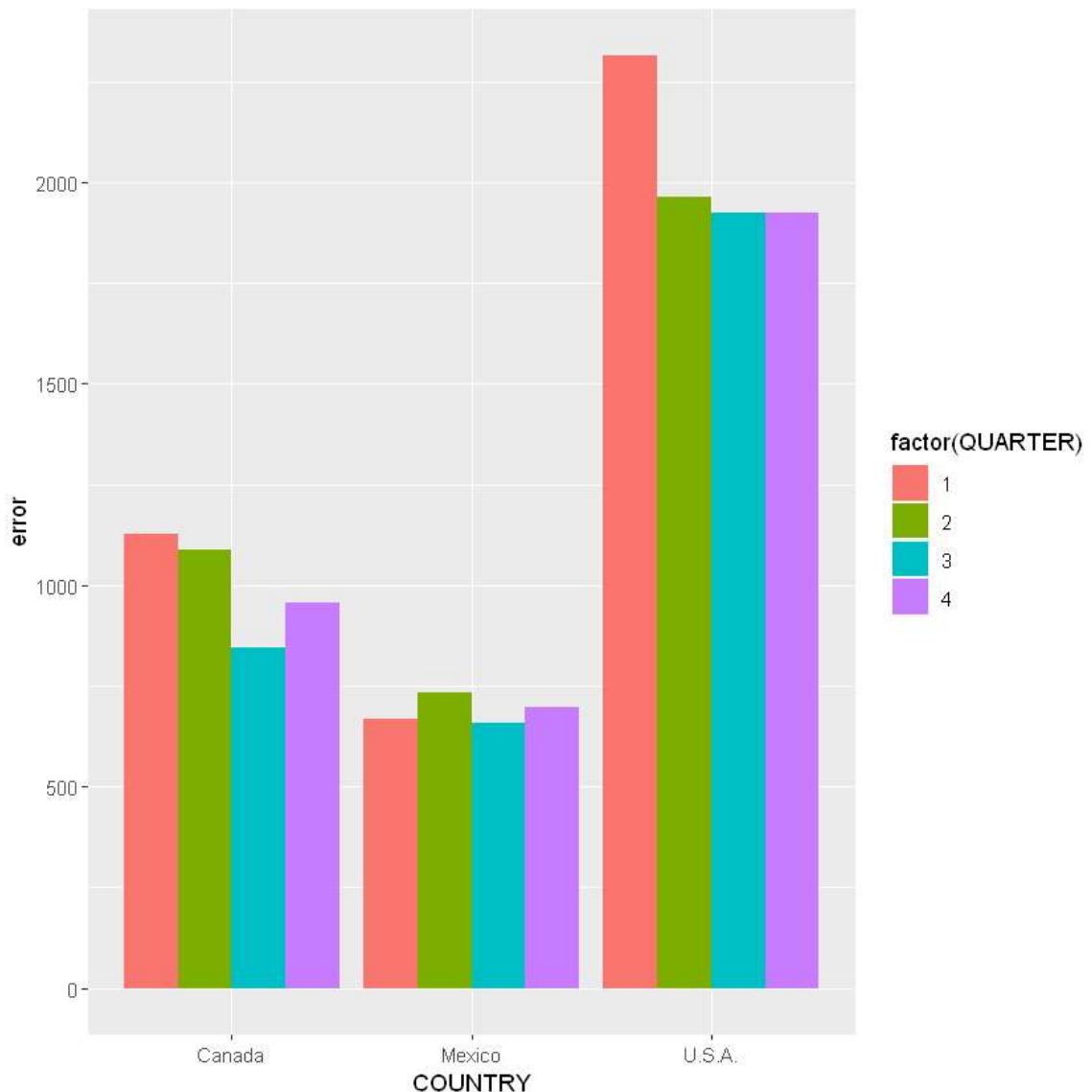
```
In [34]: q9 <- ggplot(final, aes(x = COUNTRY, y = error))+geom_col(aes(fill = STATE), position = "dodge");q9
```



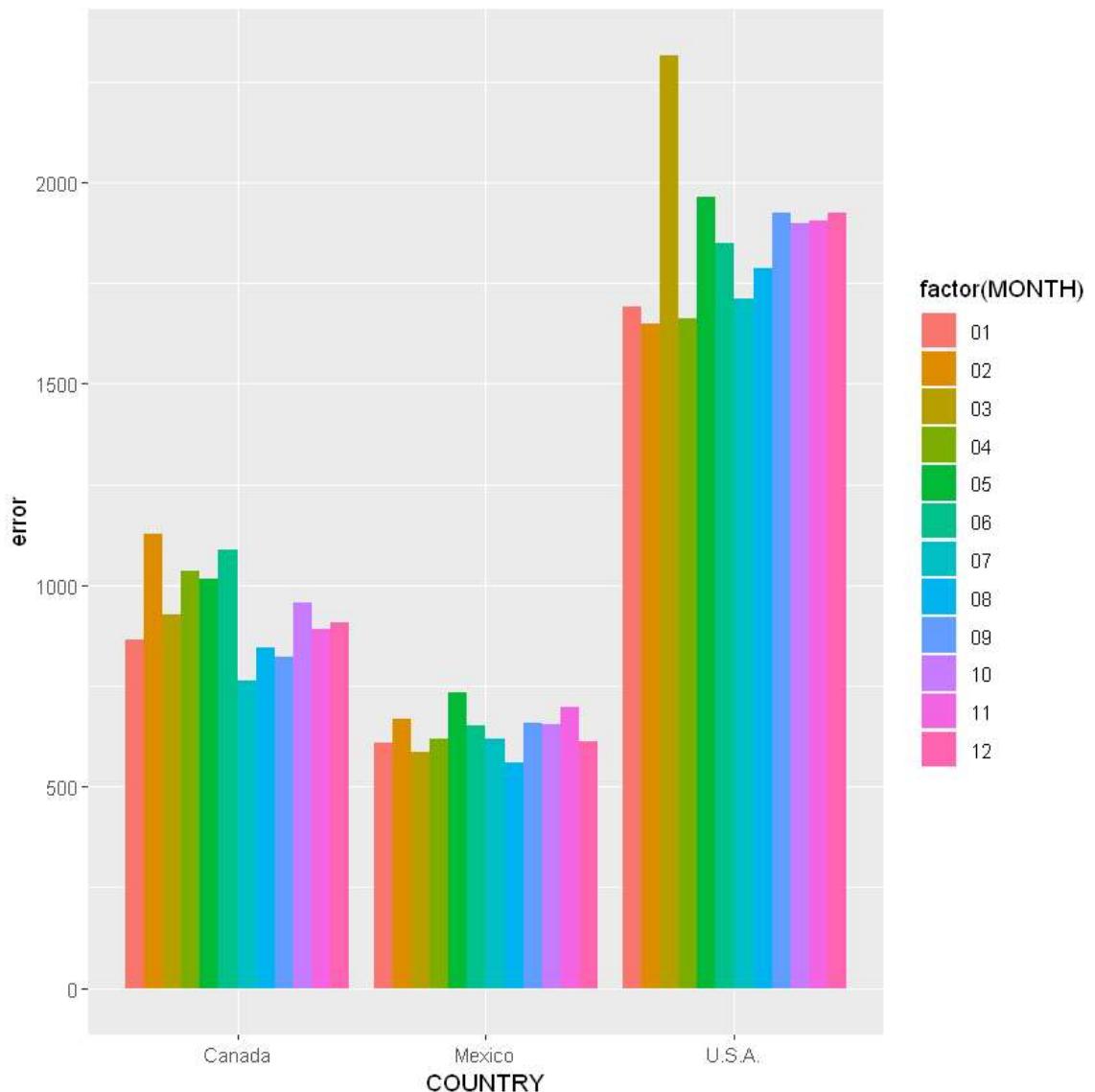
```
In [35]: q10 <- ggplot(final, aes(x = COUNTRY, y = error))+geom_col(aes(fill = factor(YEAR)), position = "dodge");q10
```



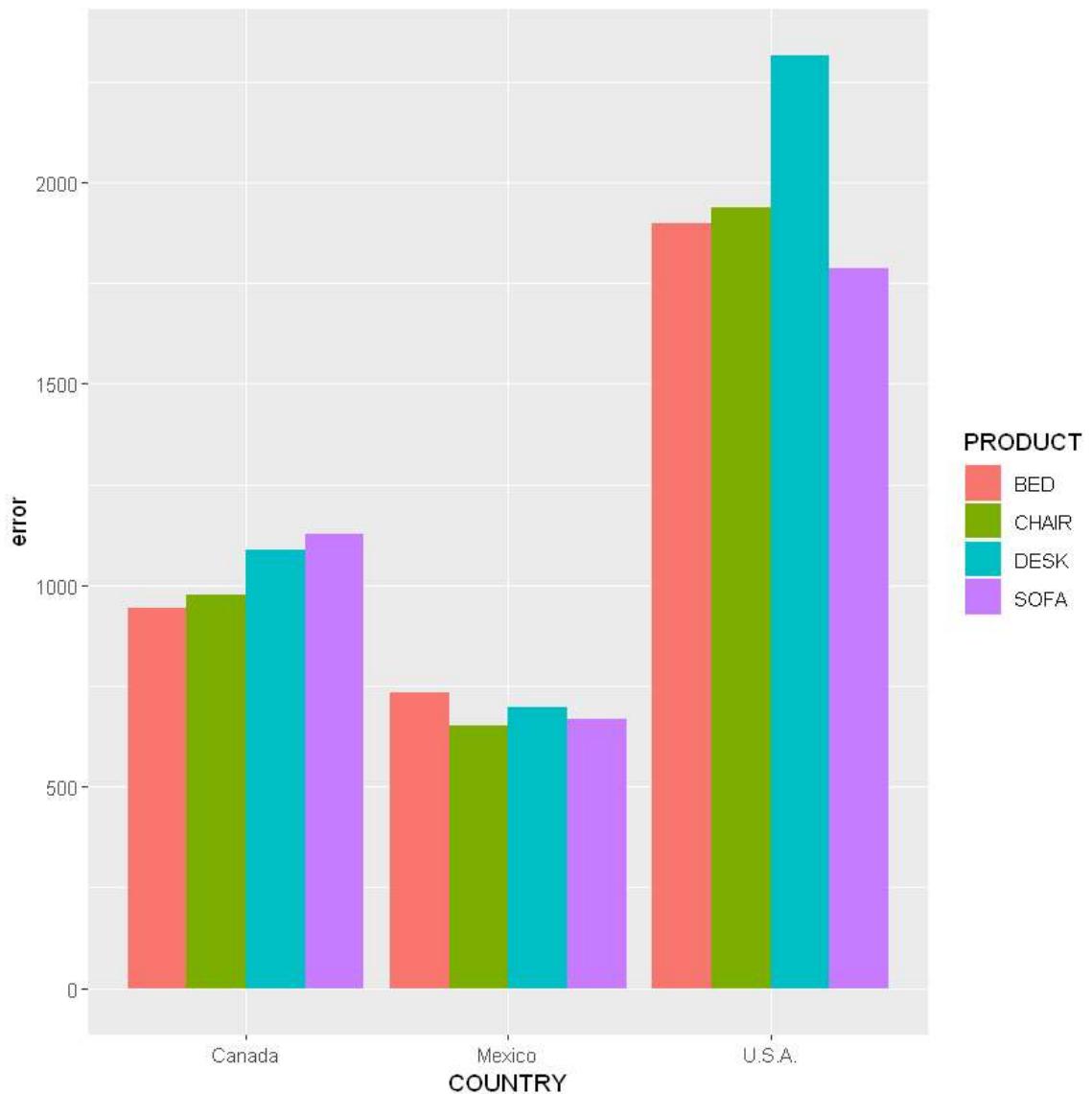
```
In [36]: q11 <- ggplot(final, aes(x = COUNTRY, y = error))+geom_col(aes(fill = factor(QUARTER)), position = "dodge");q11
```



```
In [37]: q12 <- ggplot(final, aes(x = COUNTRY, y = error))+geom_col(aes(fill = factor(MONTH)), position = "dodge");q12
```



```
In [38]: q13 <- ggplot(final, aes(x = COUNTRY, y = error))+geom_col(aes(fill = PRODUCT), position = "dodge");q13
```



Model1 : STATE + PRODUCT + MONYR

```
In [60]: reg1_1=lm(ACTUAL~factor(STATE)+factor(PRODUCT)+factor(MONYR),data=df)
summary(reg1_1)

reg1_2=lm(diff~factor(STATE)+factor(PRODUCT)+factor(MONYR),data=df)
summary(reg1_2)
```

Call:

```
lm(formula = ACTUAL ~ factor(STATE) + factor(PRODUCT) + factor(MONYR),
  data = df)
```

Residuals:

	Min	1Q	Median	3Q	Max
	-1637.04	-247.53	2.57	241.16	1863.93

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	344.240	25.706	13.392	< 2e-16 ***
factor(STATE)British Columbia	243.147	19.432	12.513	< 2e-16 ***
factor(STATE)California	1102.120	19.432	56.718	< 2e-16 ***
factor(STATE)Campeche	7.375	19.432	0.380	0.704295
factor(STATE)Colorado	465.972	19.432	23.980	< 2e-16 ***
factor(STATE)Florida	429.567	19.432	22.106	< 2e-16 ***
factor(STATE)Illinois	-380.951	15.052	-25.309	< 2e-16 ***
factor(STATE)Michoacan	8.673	19.432	0.446	0.655345
factor(STATE>New York	1028.161	19.432	52.911	< 2e-16 ***
factor(STATE)North Carolina	479.242	19.432	24.663	< 2e-16 ***
factor(STATE)Nuevo Leon	6.988	19.432	0.360	0.719155
factor(STATE)Ontario	224.822	19.432	11.570	< 2e-16 ***
factor(STATE)Quebec	248.933	19.432	12.811	< 2e-16 ***
factor(STATE)Saskatchewan	249.789	19.432	12.855	< 2e-16 ***
factor(STATE)Texas	950.810	19.432	48.931	< 2e-16 ***
factor(STATE)Washington	441.063	19.432	22.698	< 2e-16 ***
factor(PRODUCT)CHAIR	-2.581	8.690	-0.297	0.766441
factor(PRODUCT)DESK	1.407	8.690	0.162	0.871335
factor(PRODUCT)SOFA	30.197	8.690	3.475	0.000512 ***
factor(MONYR)1995-02-01	12.329	30.103	0.410	0.682145
factor(MONYR)1995-03-01	3.908	30.103	0.130	0.896716
factor(MONYR)1995-04-01	4.289	30.103	0.142	0.886710
factor(MONYR)1995-05-01	33.853	30.103	1.125	0.260794
factor(MONYR)1995-06-01	4.606	30.103	0.153	0.878389
factor(MONYR)1995-07-01	17.304	30.103	0.575	0.565420
factor(MONYR)1995-08-01	19.161	30.103	0.637	0.524444
factor(MONYR)1995-09-01	45.083	30.103	1.498	0.134249
factor(MONYR)1995-10-01	46.829	30.103	1.556	0.119816
factor(MONYR)1995-11-01	30.546	30.103	1.015	0.310258
factor(MONYR)1995-12-01	31.535	30.103	1.048	0.294854
factor(MONYR)1996-01-01	29.971	30.103	0.996	0.319449
factor(MONYR)1996-02-01	30.976	30.103	1.029	0.303496
factor(MONYR)1996-03-01	46.769	30.103	1.554	0.120291
factor(MONYR)1996-04-01	31.054	30.103	1.032	0.302283
factor(MONYR)1996-05-01	30.073	30.103	0.999	0.317806
factor(MONYR)1996-06-01	22.949	30.103	0.762	0.445858
factor(MONYR)1996-07-01	44.433	30.103	1.476	0.139957
factor(MONYR)1996-08-01	40.728	30.103	1.353	0.176093
factor(MONYR)1996-09-01	21.648	30.103	0.719	0.472066
factor(MONYR)1996-10-01	48.096	30.103	1.598	0.110129
factor(MONYR)1996-11-01	50.064	30.103	1.663	0.096315 .
factor(MONYR)1996-12-01	36.062	30.103	1.198	0.230955
factor(MONYR)1997-01-01	137.648	30.103	4.572	4.84e-06 ***
factor(MONYR)1997-02-01	153.059	30.103	5.084	3.72e-07 ***
factor(MONYR)1997-03-01	142.533	30.103	4.735	2.21e-06 ***
factor(MONYR)1997-04-01	143.009	30.103	4.751	2.04e-06 ***
factor(MONYR)1997-05-01	179.964	30.103	5.978	2.29e-09 ***
factor(MONYR)1997-06-01	143.406	30.103	4.764	1.91e-06 ***
factor(MONYR)1997-07-01	159.278	30.103	5.291	1.23e-07 ***
factor(MONYR)1997-08-01	161.600	30.103	5.368	8.03e-08 ***
factor(MONYR)1997-09-01	194.002	30.103	6.444	1.18e-10 ***

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factor(MONYR)1997-10-01	196.184	30.103	6.517	7.32e-11	***
factor(MONYR)1997-11-01	175.831	30.103	5.841	5.26e-09	***
factor(MONYR)1997-12-01	177.067	30.103	5.882	4.11e-09	***
factor(MONYR)1998-01-01	175.112	30.103	5.817	6.07e-09	***
factor(MONYR)1998-02-01	176.368	30.103	5.859	4.73e-09	***
factor(MONYR)1998-03-01	196.109	30.103	6.515	7.44e-11	***
factor(MONYR)1998-04-01	176.465	30.103	5.862	4.64e-09	***
factor(MONYR)1998-05-01	175.240	30.103	5.821	5.92e-09	***
factor(MONYR)1998-06-01	166.335	30.103	5.525	3.32e-08	***
factor(MONYR)1998-07-01	193.189	30.103	6.417	1.41e-10	***
factor(MONYR)1998-08-01	188.558	30.103	6.264	3.83e-10	***
factor(MONYR)1998-09-01	164.708	30.103	5.471	4.51e-08	***
factor(MONYR)1998-10-01	197.767	30.103	6.570	5.15e-11	***
factor(MONYR)1998-11-01	200.228	30.103	6.651	2.97e-11	***
factor(MONYR)1998-12-01	182.725	30.103	6.070	1.30e-09	***
<hr/>					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					

Residual standard error: 466.4 on 22974 degrees of freedom

Multiple R-squared: 0.4968, Adjusted R-squared: 0.4954

F-statistic: 349 on 65 and 22974 DF, p-value: < 2.2e-16

Call:

```
lm(formula = diff ~ factor(STATE) + factor(PRODUCT) + factor(MONYR),
  data = df)
```

Residuals:

	Min	1Q	Median	3Q	Max
	-1163.82	-223.72	-16.62	142.70	2198.82

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	292.5698	21.5510	13.576	< 2e-16 ***
factor(STATE)British Columbia	127.8531	16.2910	7.848	4.41e-15 ***
factor(STATE)California	732.5073	16.2910	44.964	< 2e-16 ***
factor(STATE)Campeche	-14.2969	16.2910	-0.878	0.380173
factor(STATE)Colorado	266.0922	16.2910	16.334	< 2e-16 ***
factor(STATE)Florida	255.6906	16.2910	15.695	< 2e-16 ***
factor(STATE)Illinois	-308.7279	12.6189	-24.465	< 2e-16 ***
factor(STATE)Michoacan	-39.9063	16.2910	-2.450	0.014309 *
factor(STATE>New York	667.5109	16.2910	40.974	< 2e-16 ***
factor(STATE)North Carolina	271.1500	16.2910	16.644	< 2e-16 ***
factor(STATE)Nuevo Leon	-16.9344	16.2910	-1.039	0.298586
factor(STATE)Ontario	122.6375	16.2910	7.528	5.34e-14 ***
factor(STATE)Quebec	110.9516	16.2910	6.811	9.96e-12 ***
factor(STATE)Saskatchewan	134.8047	16.2910	8.275	< 2e-16 ***
factor(STATE)Texas	595.4781	16.2910	36.553	< 2e-16 ***
factor(STATE)Washington	252.7422	16.2910	15.514	< 2e-16 ***
factor(PRODUCT)CHAIR	-1.3228	7.2856	-0.182	0.855922
factor(PRODUCT)DESK	8.6497	7.2856	1.187	0.235144
factor(PRODUCT)SOFA	9.0441	7.2856	1.241	0.214481
factor(MONYR)1995-02-01	8.5235	25.2379	0.338	0.735574
factor(MONYR)1995-03-01	2.5132	25.2379	0.100	0.920677
factor(MONYR)1995-04-01	36.1667	25.2379	1.433	0.151863
factor(MONYR)1995-05-01	4.3104	25.2379	0.171	0.864390
factor(MONYR)1995-06-01	27.9218	25.2379	1.106	0.268589
factor(MONYR)1995-07-01	4.3178	25.2379	0.171	0.864158
factor(MONYR)1995-08-01	14.0260	25.2379	0.556	0.578387
factor(MONYR)1995-09-01	36.9321	25.2379	1.463	0.143382
factor(MONYR)1995-10-01	-2.4227	25.2379	-0.096	0.923527
factor(MONYR)1995-11-01	13.0585	25.2379	0.517	0.604870
factor(MONYR)1995-12-01	-10.3936	25.2379	-0.412	0.680470
factor(MONYR)1996-01-01	5.7544	25.2379	0.228	0.819643
factor(MONYR)1996-02-01	10.0557	25.2379	0.398	0.690311
factor(MONYR)1996-03-01	33.1457	25.2379	1.313	0.189085
factor(MONYR)1996-04-01	9.8424	25.2379	0.390	0.696551
factor(MONYR)1996-05-01	20.0369	25.2379	0.794	0.427248
factor(MONYR)1996-06-01	-0.2652	25.2379	-0.011	0.991615
factor(MONYR)1996-07-01	-4.0714	25.2379	-0.161	0.871842
factor(MONYR)1996-08-01	10.2214	25.2379	0.405	0.685481
factor(MONYR)1996-09-01	16.0497	25.2379	0.636	0.524823
factor(MONYR)1996-10-01	10.2309	25.2379	0.405	0.685204
factor(MONYR)1996-11-01	3.8479	25.2379	0.152	0.878820
factor(MONYR)1996-12-01	0.9108	25.2379	0.036	0.971212
factor(MONYR)1997-01-01	98.1987	25.2379	3.891	0.000100 ***
factor(MONYR)1997-02-01	108.8530	25.2379	4.313	1.62e-05 ***
factor(MONYR)1997-03-01	101.3402	25.2379	4.015	5.95e-05 ***
factor(MONYR)1997-04-01	143.4070	25.2379	5.682	1.35e-08 ***
factor(MONYR)1997-05-01	103.5867	25.2379	4.104	4.07e-05 ***
factor(MONYR)1997-06-01	133.1009	25.2379	5.274	1.35e-07 ***
factor(MONYR)1997-07-01	103.5959	25.2379	4.105	4.06e-05 ***
factor(MONYR)1997-08-01	115.7311	25.2379	4.586	4.55e-06 ***
factor(MONYR)1997-09-01	144.3638	25.2379	5.720	1.08e-08 ***

Regression_HW6

factor(MONYR)1997-10-01	95.1703	25.2379	3.771	0.000163	***
factor(MONYR)1997-11-01	114.5218	25.2379	4.538	5.72e-06	***
factor(MONYR)1997-12-01	85.2066	25.2379	3.376	0.000736	***
factor(MONYR)1998-01-01	105.3917	25.2379	4.176	2.98e-05	***
factor(MONYR)1998-02-01	110.7683	25.2379	4.389	1.14e-05	***
factor(MONYR)1998-03-01	139.6308	25.2379	5.533	3.19e-08	***
factor(MONYR)1998-04-01	110.5017	25.2379	4.378	1.20e-05	***
factor(MONYR)1998-05-01	123.2448	25.2379	4.883	1.05e-06	***
factor(MONYR)1998-06-01	97.8671	25.2379	3.878	0.000106	***
factor(MONYR)1998-07-01	93.1094	25.2379	3.689	0.000225	***
factor(MONYR)1998-08-01	110.9754	25.2379	4.397	1.10e-05	***
factor(MONYR)1998-09-01	118.2608	25.2379	4.686	2.80e-06	***
factor(MONYR)1998-10-01	110.9872	25.2379	4.398	1.10e-05	***
factor(MONYR)1998-11-01	103.0086	25.2379	4.082	4.49e-05	***
factor(MONYR)1998-12-01	99.3372	25.2379	3.936	8.31e-05	***
<hr/>					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					

Residual standard error: 391 on 22974 degrees of freedom
 Multiple R-squared: 0.3987, Adjusted R-squared: 0.397
 F-statistic: 234.3 on 65 and 22974 DF, p-value: < 2.2e-16

Model2 : State + Month + State * Month

```
In [61]: #I1 is indicator mat for state  
I1=model.matrix(~STATE, data=df)  
I1f=data.frame(I1)  
  
#Imon is for month  
mon=as.factor(df$MONTH)  
Imon=model.matrix(~mon)  
Imonf=data.frame(Imon)  
  
reg2_1=lm(ACTUAL~I1[, -1]*Imon[, -1], data=df)  
summary(reg2_1)  
  
reg2_2=lm(diff~I1[, -1]*Imon[, -1], data=df)  
summary(reg2_2)
```

Call:

lm(formula = ACTUAL ~ I1[, -1] * Imon[, -1], data = df)

Residuals:

Min	1Q	Median	3Q	Max
-1651.79	-251.37	-3.19	228.86	2050.66

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	361.3312	47.9846	7.530
I1[, -1]STATEBritish Columbia	455.7750	67.8604	6.716
I1[, -1]STATECalifornia	1117.2544	67.8604	16.464
I1[, -1]STATECampeche	122.0625	67.8604	1.799
I1[, -1]STATEColorado	536.2313	67.8604	7.902
I1[, -1]STATEFlorida	390.6188	67.8604	5.756
I1[, -1]STATEIllinois	-292.9255	52.5645	-5.573
I1[, -1]STATEMichoacan	68.2125	67.8604	1.005
I1[, -1]STATENew York	992.8088	67.8604	14.630
I1[, -1]STATENorth Carolina	471.8250	67.8604	6.953
I1[, -1]STATENuevo Leon	110.2875	67.8604	1.625
I1[, -1]STATEOntario	308.4000	67.8604	4.545
I1[, -1]STATEQuebec	345.7875	67.8604	5.096
I1[, -1]STATESaskatchewan	378.7875	67.8604	5.582
I1[, -1]STATETexas	1119.7031	67.8604	16.500
I1[, -1]STATEWashington	545.7375	67.8604	8.042
Imon[, -1]mon02	98.8500	67.8604	1.457
Imon[, -1]mon03	69.0375	67.8604	1.017
Imon[, -1]mon04	109.6500	67.8604	1.616
Imon[, -1]mon05	79.2188	67.8604	1.167
Imon[, -1]mon06	67.2750	67.8604	0.991
Imon[, -1]mon07	119.5313	67.8604	1.761
Imon[, -1]mon08	155.1563	67.8604	2.286
Imon[, -1]mon09	93.1500	67.8604	1.373
Imon[, -1]mon10	89.6813	67.8604	1.322
Imon[, -1]mon11	95.3063	67.8604	1.404
Imon[, -1]mon12	114.7875	67.8604	1.692
I1[, -1]STATEBritish Columbia:Imon[, -1]mon02	-247.1625	95.9691	-2.575
I1[, -1]STATECalifornia:Imon[, -1]mon02	147.7987	95.9691	1.540
I1[, -1]STATECampeche:Imon[, -1]mon02	-158.2313	95.9691	-1.649
I1[, -1]STATEColorado:Imon[, -1]mon02	-24.7688	95.9691	-0.258
I1[, -1]STATEFlorida:Imon[, -1]mon02	-67.2563	95.9691	-0.701
I1[, -1]STATEIllinois:Imon[, -1]mon02	-92.7981	74.3374	-1.248
I1[, -1]STATEMichoacan:Imon[, -1]mon02	-96.5813	95.9691	-1.006
I1[, -1]STATENew York:Imon[, -1]mon02	-47.2200	95.9691	-0.492
I1[, -1]STATENorth Carolina:Imon[, -1]mon02	17.0812	95.9691	0.178
I1[, -1]STATENuevo Leon:Imon[, -1]mon02	-163.7438	95.9691	-1.706
I1[, -1]STATEOntario:Imon[, -1]mon02	-27.5438	95.9691	-0.287
I1[, -1]STATEQuebec:Imon[, -1]mon02	-130.5938	95.9691	-1.361
I1[, -1]STATESaskatchewan:Imon[, -1]mon02	-94.3875	95.9691	-0.984
I1[, -1]STATETexas:Imon[, -1]mon02	-235.2563	95.9691	-2.451
I1[, -1]STATEWashington:Imon[, -1]mon02	-235.1438	95.9691	-2.450
I1[, -1]STATEBritish Columbia:Imon[, -1]mon03	-229.8375	95.9691	-2.395
I1[, -1]STATECalifornia:Imon[, -1]mon03	15.9731	95.9691	0.166
I1[, -1]STATECampeche:Imon[, -1]mon03	-89.0813	95.9691	-0.928
I1[, -1]STATEColorado:Imon[, -1]mon03	-154.5563	95.9691	-1.610
I1[, -1]STATEFlorida:Imon[, -1]mon03	96.9937	95.9691	1.011
I1[, -1]STATEIllinois:Imon[, -1]mon03	-68.9290	74.3374	-0.927
I1[, -1]STATEMichoacan:Imon[, -1]mon03	0.5812	95.9691	0.006
I1[, -1]STATENew York:Imon[, -1]mon03	224.5125	95.9691	2.339
I1[, -1]STATENorth Carolina:Imon[, -1]mon03	29.3437	95.9691	0.306
I1[, -1]STATENuevo Leon:Imon[, -1]mon03	-87.2813	95.9691	-0.909

I1[, -1]STATEOntario:Imon[, -1]mon03	-16.3313	95.9691	-0.170
I1[, -1]STATEQuebec:Imon[, -1]mon03	-93.7875	95.9691	-0.977
I1[, -1]STATESaskatchewan:Imon[, -1]mon03	-189.9750	95.9691	-1.980
I1[, -1]STATETexas:Imon[, -1]mon03	-213.7406	95.9691	-2.227
I1[, -1]STATEWashington:Imon[, -1]mon03	-95.9813	95.9691	-1.000
I1[, -1]STATEBritish Columbia:Imon[, -1]mon04	-275.4938	95.9691	-2.871
I1[, -1]STATECalifornia:Imon[, -1]mon04	-73.2169	95.9691	-0.763
I1[, -1]STATECampeche:Imon[, -1]mon04	-161.9625	95.9691	-1.688
I1[, -1]STATEColorado:Imon[, -1]mon04	-137.7563	95.9691	-1.435
I1[, -1]STATEFlorida:Imon[, -1]mon04	50.1375	95.9691	0.522
I1[, -1]STATEIllinois:Imon[, -1]mon04	-104.4167	74.3374	-1.405
I1[, -1]STATEMichoacan:Imon[, -1]mon04	-83.5688	95.9691	-0.871
I1[, -1]STATENew York:Imon[, -1]mon04	-201.0900	95.9691	-2.095
I1[, -1]STATENorth Carolina:Imon[, -1]mon04	47.0625	95.9691	0.490
I1[, -1]STATENuevo Leon:Imon[, -1]mon04	-133.3500	95.9691	-1.390
I1[, -1]STATEOntario:Imon[, -1]mon04	-88.9875	95.9691	-0.927
I1[, -1]STATEQuebec:Imon[, -1]mon04	-112.4063	95.9691	-1.171
I1[, -1]STATESaskatchewan:Imon[, -1]mon04	-103.3500	95.9691	-1.077
I1[, -1]STATETexas:Imon[, -1]mon04	-146.4375	95.9691	-1.526
I1[, -1]STATEWashington:Imon[, -1]mon04	-190.0688	95.9691	-1.981
I1[, -1]STATEBritish Columbia:Imon[, -1]mon05	-256.6125	95.9691	-2.674
I1[, -1]STATECalifornia:Imon[, -1]mon05	60.9356	95.9691	0.635
I1[, -1]STATECampeche:Imon[, -1]mon05	-91.8750	95.9691	-0.957
I1[, -1]STATEColorado:Imon[, -1]mon05	-82.7625	95.9691	-0.862
I1[, -1]STATEFlorida:Imon[, -1]mon05	135.3937	95.9691	1.411
I1[, -1]STATEIllinois:Imon[, -1]mon05	-77.8999	74.3374	-1.048
I1[, -1]STATEMichoacan:Imon[, -1]mon05	18.4687	95.9691	0.192
I1[, -1]STATENew York:Imon[, -1]mon05	118.9912	95.9691	1.240
I1[, -1]STATENorth Carolina:Imon[, -1]mon05	60.5625	95.9691	0.631
I1[, -1]STATENuevo Leon:Imon[, -1]mon05	-85.1438	95.9691	-0.887
I1[, -1]STATEOntario:Imon[, -1]mon05	-108.7500	95.9691	-1.133
I1[, -1]STATEQuebec:Imon[, -1]mon05	-144.5438	95.9691	-1.506
I1[, -1]STATESaskatchewan:Imon[, -1]mon05	-171.6375	95.9691	-1.788
I1[, -1]STATETexas:Imon[, -1]mon05	-182.6063	95.9691	-1.903
I1[, -1]STATEWashington:Imon[, -1]mon05	-83.3063	95.9691	-0.868
I1[, -1]STATEBritish Columbia:Imon[, -1]mon06	-201.5063	95.9691	-2.100
I1[, -1]STATECalifornia:Imon[, -1]mon06	-259.4175	95.9691	-2.703
I1[, -1]STATECampeche:Imon[, -1]mon06	-50.0438	95.9691	-0.521
I1[, -1]STATEColorado:Imon[, -1]mon06	-47.1563	95.9691	-0.491
I1[, -1]STATEFlorida:Imon[, -1]mon06	86.2125	95.9691	0.898
I1[, -1]STATEIllinois:Imon[, -1]mon06	-64.0021	74.3374	-0.861
I1[, -1]STATEMichoacan:Imon[, -1]mon06	-50.6813	95.9691	-0.528
I1[, -1]STATENew York:Imon[, -1]mon06	51.1950	95.9691	0.533
I1[, -1]STATENorth Carolina:Imon[, -1]mon06	7.9687	95.9691	0.083
I1[, -1]STATENuevo Leon:Imon[, -1]mon06	-78.2625	95.9691	-0.815
I1[, -1]STATEOntario:Imon[, -1]mon06	-73.7813	95.9691	-0.769
I1[, -1]STATEQuebec:Imon[, -1]mon06	-24.6000	95.9691	-0.256
I1[, -1]STATESaskatchewan:Imon[, -1]mon06	-133.9688	95.9691	-1.396
I1[, -1]STATETexas:Imon[, -1]mon06	-164.7000	95.9691	-1.716
I1[, -1]STATEWashington:Imon[, -1]mon06	-113.9250	95.9691	-1.187
I1[, -1]STATEBritish Columbia:Imon[, -1]mon07	-280.8000	95.9691	-2.926
I1[, -1]STATECalifornia:Imon[, -1]mon07	8.9569	95.9691	0.093
I1[, -1]STATECampeche:Imon[, -1]mon07	-166.1250	95.9691	-1.731
I1[, -1]STATEColorado:Imon[, -1]mon07	-86.2875	95.9691	-0.899
I1[, -1]STATEFlorida:Imon[, -1]mon07	62.4375	95.9691	0.651
I1[, -1]STATEIllinois:Imon[, -1]mon07	-111.3260	74.3374	-1.498
I1[, -1]STATEMichoacan:Imon[, -1]mon07	-143.7375	95.9691	-1.498
I1[, -1]STATENew York:Imon[, -1]mon07	90.3187	95.9691	0.941
I1[, -1]STATENorth Carolina:Imon[, -1]mon07	-89.1188	95.9691	-0.929
I1[, -1]STATENuevo Leon:Imon[, -1]mon07	-151.8188	95.9691	-1.582
I1[, -1]STATEOntario:Imon[, -1]mon07	-169.4438	95.9691	-1.766

I1[, -1]STATEQuebec:Imon[, -1]mon07	-158.1750	95.9691	-1.648
I1[, -1]STATESaskatchewan:Imon[, -1]mon07	-189.3375	95.9691	-1.973
I1[, -1]STATETexas:Imon[, -1]mon07	-237.5156	95.9691	-2.475
I1[, -1]STATEWashington:Imon[, -1]mon07	34.0125	95.9691	0.354
I1[, -1]STATEBritish Columbia:Imon[, -1]mon08	-283.8750	95.9691	-2.958
I1[, -1]STATECalifornia:Imon[, -1]mon08	-59.2125	95.9691	-0.617
I1[, -1]STATECampeche:Imon[, -1]mon08	-229.5750	95.9691	-2.392
I1[, -1]STATEColorado:Imon[, -1]mon08	56.6812	95.9691	0.591
I1[, -1]STATEFlorida:Imon[, -1]mon08	-131.9250	95.9691	-1.375
I1[, -1]STATEIllinois:Imon[, -1]mon08	-153.0401	74.3374	-2.059
I1[, -1]STATEMichoacan:Imon[, -1]mon08	-122.6438	95.9691	-1.278
I1[, -1]STATENew York:Imon[, -1]mon08	-168.5363	95.9691	-1.756
I1[, -1]STATENorth Carolina:Imon[, -1]mon08	-29.4375	95.9691	-0.307
I1[, -1]STATENuevo Leon:Imon[, -1]mon08	-117.5625	95.9691	-1.225
I1[, -1]STATEOntario:Imon[, -1]mon08	-196.8000	95.9691	-2.051
I1[, -1]STATEQuebec:Imon[, -1]mon08	-183.3375	95.9691	-1.910
I1[, -1]STATESaskatchewan:Imon[, -1]mon08	-217.6688	95.9691	-2.268
I1[, -1]STATETexas:Imon[, -1]mon08	-113.8688	95.9691	-1.187
I1[, -1]STATEWashington:Imon[, -1]mon08	-203.5875	95.9691	-2.121
I1[, -1]STATEBritish Columbia:Imon[, -1]mon09	-215.4000	95.9691	-2.244
I1[, -1]STATECalifornia:Imon[, -1]mon09	-32.8106	95.9691	-0.342
I1[, -1]STATECampeche:Imon[, -1]mon09	-182.5688	95.9691	-1.902
I1[, -1]STATEColorado:Imon[, -1]mon09	-126.8250	95.9691	-1.322
I1[, -1]STATEFlorida:Imon[, -1]mon09	46.3875	95.9691	0.483
I1[, -1]STATEIllinois:Imon[, -1]mon09	-92.2108	74.3374	-1.240
I1[, -1]STATEMichoacan:Imon[, -1]mon09	-51.5438	95.9691	-0.537
I1[, -1]STATENew York:Imon[, -1]mon09	101.4300	95.9691	1.057
I1[, -1]STATENorth Carolina:Imon[, -1]mon09	49.7437	95.9691	0.518
I1[, -1]STATENuevo Leon:Imon[, -1]mon09	-91.3688	95.9691	-0.952
I1[, -1]STATEOntario:Imon[, -1]mon09	-72.0375	95.9691	-0.751
I1[, -1]STATEQuebec:Imon[, -1]mon09	-108.8063	95.9691	-1.134
I1[, -1]STATESaskatchewan:Imon[, -1]mon09	-121.2375	95.9691	-1.263
I1[, -1]STATETexas:Imon[, -1]mon09	-49.5563	95.9691	-0.516
I1[, -1]STATEWashington:Imon[, -1]mon09	-133.8000	95.9691	-1.394
I1[, -1]STATEBritish Columbia:Imon[, -1]mon10	-160.9500	95.9691	-1.677
I1[, -1]STATECalifornia:Imon[, -1]mon10	50.2500	95.9691	0.524
I1[, -1]STATECampeche:Imon[, -1]mon10	-77.3250	95.9691	-0.806
I1[, -1]STATEColorado:Imon[, -1]mon10	-94.1813	95.9691	-0.981
I1[, -1]STATEFlorida:Imon[, -1]mon10	-52.6875	95.9691	-0.549
I1[, -1]STATEIllinois:Imon[, -1]mon10	-88.1045	74.3374	-1.185
I1[, -1]STATEMichoacan:Imon[, -1]mon10	-111.0750	95.9691	-1.157
I1[, -1]STATENew York:Imon[, -1]mon10	21.6187	95.9691	0.225
I1[, -1]STATENorth Carolina:Imon[, -1]mon10	125.7000	95.9691	1.310
I1[, -1]STATENuevo Leon:Imon[, -1]mon10	-164.3625	95.9691	-1.713
I1[, -1]STATEOntario:Imon[, -1]mon10	-47.6813	95.9691	-0.497
I1[, -1]STATEQuebec:Imon[, -1]mon10	-63.0000	95.9691	-0.656
I1[, -1]STATESaskatchewan:Imon[, -1]mon10	-5.0625	95.9691	-0.053
I1[, -1]STATETexas:Imon[, -1]mon10	-60.0656	95.9691	-0.626
I1[, -1]STATEWashington:Imon[, -1]mon10	16.4437	95.9691	0.171
I1[, -1]STATEBritish Columbia:Imon[, -1]mon11	-167.1375	95.9691	-1.742
I1[, -1]STATECalifornia:Imon[, -1]mon11	-23.9700	95.9691	-0.250
I1[, -1]STATECampeche:Imon[, -1]mon11	-47.6063	95.9691	-0.496
I1[, -1]STATEColorado:Imon[, -1]mon11	-122.7750	95.9691	-1.279
I1[, -1]STATEFlorida:Imon[, -1]mon11	130.1812	95.9691	1.356
I1[, -1]STATEIllinois:Imon[, -1]mon11	-94.8586	74.3374	-1.276
I1[, -1]STATEMichoacan:Imon[, -1]mon11	-84.0188	95.9691	-0.875
I1[, -1]STATENew York:Imon[, -1]mon11	209.9737	95.9691	2.188
I1[, -1]STATENorth Carolina:Imon[, -1]mon11	-39.2063	95.9691	-0.409
I1[, -1]STATENuevo Leon:Imon[, -1]mon11	-43.9125	95.9691	-0.458
I1[, -1]STATEOntario:Imon[, -1]mon11	-109.7625	95.9691	-1.144
I1[, -1]STATEQuebec:Imon[, -1]mon11	-31.9688	95.9691	-0.333

I1[, -1]STATESaskatchewan:Imon[, -1]mon11	-155.6625	95.9691	-1.622
I1[, -1]STATETexas:Imon[, -1]mon11	-221.7281	95.9691	-2.310
I1[, -1]STATEWashington:Imon[, -1]mon11	-154.5563	95.9691	-1.610
I1[, -1]STATEBritish Columbia:Imon[, -1]mon12	-232.7625	95.9691	-2.425
I1[, -1]STATECalifornia:Imon[, -1]mon12	-16.8994	95.9691	-0.176
I1[, -1]STATECampeche:Imon[, -1]mon12	-121.8563	95.9691	-1.270
I1[, -1]STATEColorado:Imon[, -1]mon12	-22.7250	95.9691	-0.237
I1[, -1]STATEFlorida:Imon[, -1]mon12	111.5062	95.9691	1.162
I1[, -1]STATEIllinois:Imon[, -1]mon12	-108.7243	74.3374	-1.463
I1[, -1]STATEMichoacan:Imon[, -1]mon12	10.3312	95.9691	0.108
I1[, -1]STATENew York:Imon[, -1]mon12	23.0325	95.9691	0.240
I1[, -1]STATENorth Carolina:Imon[, -1]mon12	-90.6938	95.9691	-0.945
I1[, -1]STATENuevo Leon:Imon[, -1]mon12	-122.7938	95.9691	-1.280
I1[, -1]STATEOntario:Imon[, -1]mon12	-91.8188	95.9691	-0.957
I1[, -1]STATEQuebec:Imon[, -1]mon12	-111.0375	95.9691	-1.157
I1[, -1]STATESaskatchewan:Imon[, -1]mon12	-165.6938	95.9691	-1.727
I1[, -1]STATETexas:Imon[, -1]mon12	-401.2406	95.9691	-4.181
I1[, -1]STATEWashington:Imon[, -1]mon12	-96.1875	95.9691	-1.002
Pr(> t)			
(Intercept)	5.26e-14 ***		
I1[, -1]STATEBritish Columbia	1.91e-11 ***		
I1[, -1]STATECalifornia	< 2e-16 ***		
I1[, -1]STATECampeche	0.07207 .		
I1[, -1]STATEColorado	2.87e-15 ***		
I1[, -1]STATEFlorida	8.71e-09 ***		
I1[, -1]STATEIllinois	2.54e-08 ***		
I1[, -1]STATEMichoacan	0.31482		
I1[, -1]STATENew York	< 2e-16 ***		
I1[, -1]STATENorth Carolina	3.68e-12 ***		
I1[, -1]STATENuevo Leon	0.10413		
I1[, -1]STATEOntario	5.53e-06 ***		
I1[, -1]STATEQuebec	3.50e-07 ***		
I1[, -1]STATESaskatchewan	2.41e-08 ***		
I1[, -1]STATETexas	< 2e-16 ***		
I1[, -1]STATEWashington	9.26e-16 ***		
Imon[, -1]mon02	0.14522		
Imon[, -1]mon03	0.30900		
Imon[, -1]mon04	0.10615		
Imon[, -1]mon05	0.24307		
Imon[, -1]mon06	0.32151		
Imon[, -1]mon07	0.07818 .		
Imon[, -1]mon08	0.02224 *		
Imon[, -1]mon09	0.16987		
Imon[, -1]mon10	0.18633		
Imon[, -1]mon11	0.16020		
Imon[, -1]mon12	0.09075 .		
I1[, -1]STATEBritish Columbia:Imon[, -1]mon02	0.01002 *		
I1[, -1]STATECalifornia:Imon[, -1]mon02	0.12356		
I1[, -1]STATECampeche:Imon[, -1]mon02	0.09921 .		
I1[, -1]STATEColorado:Imon[, -1]mon02	0.79634		
I1[, -1]STATEFlorida:Imon[, -1]mon02	0.48343		
I1[, -1]STATEIllinois:Imon[, -1]mon02	0.21192		
I1[, -1]STATEMichoacan:Imon[, -1]mon02	0.31424		
I1[, -1]STATENew York:Imon[, -1]mon02	0.62270		
I1[, -1]STATENorth Carolina:Imon[, -1]mon02	0.85873		
I1[, -1]STATENuevo Leon:Imon[, -1]mon02	0.08798 .		
I1[, -1]STATEOntario:Imon[, -1]mon02	0.77411		
I1[, -1]STATEQuebec:Imon[, -1]mon02	0.17359		
I1[, -1]STATESaskatchewan:Imon[, -1]mon02	0.32536		
I1[, -1]STATETexas:Imon[, -1]mon02	0.01424 *		
I1[, -1]STATEWashington:Imon[, -1]mon02	0.01429 *		

I1[, -1]STATEBritish Columbia:Imon[, -1]mon03	0.01663 *
I1[, -1]STATECalifornia:Imon[, -1]mon03	0.86781
I1[, -1]STATECampeche:Imon[, -1]mon03	0.35330
I1[, -1]STATEColorado:Imon[, -1]mon03	0.10731
I1[, -1]STATEFlorida:Imon[, -1]mon03	0.31218
I1[, -1]STATEIllinois:Imon[, -1]mon03	0.35381
I1[, -1]STATEMichoacan:Imon[, -1]mon03	0.99517
I1[, -1]STATENew York:Imon[, -1]mon03	0.01932 *
I1[, -1]STATENorth Carolina:Imon[, -1]mon03	0.75979
I1[, -1]STATENuevo Leon:Imon[, -1]mon03	0.36311
I1[, -1]STATEOntario:Imon[, -1]mon03	0.86488
I1[, -1]STATEQuebec:Imon[, -1]mon03	0.32845
I1[, -1]STATESaskatchewan:Imon[, -1]mon03	0.04777 *
I1[, -1]STATETexas:Imon[, -1]mon03	0.02594 *
I1[, -1]STATEWashington:Imon[, -1]mon03	0.31726
I1[, -1]STATEBritish Columbia:Imon[, -1]mon04	0.00410 **
I1[, -1]STATECalifornia:Imon[, -1]mon04	0.44552
I1[, -1]STATECampeche:Imon[, -1]mon04	0.09149 .
I1[, -1]STATEColorado:Imon[, -1]mon04	0.15118
I1[, -1]STATEFlorida:Imon[, -1]mon04	0.60137
I1[, -1]STATEIllinois:Imon[, -1]mon04	0.16014
I1[, -1]STATEMichoacan:Imon[, -1]mon04	0.38388
I1[, -1]STATENew York:Imon[, -1]mon04	0.03615 *
I1[, -1]STATENorth Carolina:Imon[, -1]mon04	0.62386
I1[, -1]STATENuevo Leon:Imon[, -1]mon04	0.16469
I1[, -1]STATEOntario:Imon[, -1]mon04	0.35381
I1[, -1]STATEQuebec:Imon[, -1]mon04	0.24150
I1[, -1]STATESaskatchewan:Imon[, -1]mon04	0.28153
I1[, -1]STATETexas:Imon[, -1]mon04	0.12705
I1[, -1]STATEWashington:Imon[, -1]mon04	0.04766 *
I1[, -1]STATEBritish Columbia:Imon[, -1]mon05	0.00750 **
I1[, -1]STATECalifornia:Imon[, -1]mon05	0.52547
I1[, -1]STATECampeche:Imon[, -1]mon05	0.33841
I1[, -1]STATEColorado:Imon[, -1]mon05	0.38848
I1[, -1]STATEFlorida:Imon[, -1]mon05	0.15832
I1[, -1]STATEIllinois:Imon[, -1]mon05	0.29468
I1[, -1]STATEMichoacan:Imon[, -1]mon05	0.84740
I1[, -1]STATENew York:Imon[, -1]mon05	0.21503
I1[, -1]STATENorth Carolina:Imon[, -1]mon05	0.52801
I1[, -1]STATENuevo Leon:Imon[, -1]mon05	0.37498
I1[, -1]STATEOntario:Imon[, -1]mon05	0.25715
I1[, -1]STATEQuebec:Imon[, -1]mon05	0.13204
I1[, -1]STATESaskatchewan:Imon[, -1]mon05	0.07371 .
I1[, -1]STATETexas:Imon[, -1]mon05	0.05708 .
I1[, -1]STATEWashington:Imon[, -1]mon05	0.38537
I1[, -1]STATEBritish Columbia:Imon[, -1]mon06	0.03577 *
I1[, -1]STATECalifornia:Imon[, -1]mon06	0.00687 **
I1[, -1]STATECampeche:Imon[, -1]mon06	0.60205
I1[, -1]STATEColorado:Imon[, -1]mon06	0.62317
I1[, -1]STATEFlorida:Imon[, -1]mon06	0.36902
I1[, -1]STATEIllinois:Imon[, -1]mon06	0.38926
I1[, -1]STATEMichoacan:Imon[, -1]mon06	0.59744
I1[, -1]STATENew York:Imon[, -1]mon06	0.59373
I1[, -1]STATENorth Carolina:Imon[, -1]mon06	0.93382
I1[, -1]STATENuevo Leon:Imon[, -1]mon06	0.41480
I1[, -1]STATEOntario:Imon[, -1]mon06	0.44202
I1[, -1]STATEQuebec:Imon[, -1]mon06	0.79770
I1[, -1]STATESaskatchewan:Imon[, -1]mon06	0.16274
I1[, -1]STATETexas:Imon[, -1]mon06	0.08614 .
I1[, -1]STATEWashington:Imon[, -1]mon06	0.23520
I1[, -1]STATEBritish Columbia:Imon[, -1]mon07	0.00344 **

I1[, -1]STATECalifornia:Imon[, -1]mon07	0.92564
I1[, -1]STATECampeche:Imon[, -1]mon07	0.08346 .
I1[, -1]STATEColorado:Imon[, -1]mon07	0.36860
I1[, -1]STATEFlorida:Imon[, -1]mon07	0.51531
I1[, -1]STATEIllinois:Imon[, -1]mon07	0.13426
I1[, -1]STATEMichoacan:Imon[, -1]mon07	0.13421
I1[, -1]STATENew York:Imon[, -1]mon07	0.34665
I1[, -1]STATENorth Carolina:Imon[, -1]mon07	0.35310
I1[, -1]STATENuevo Leon:Imon[, -1]mon07	0.11367
I1[, -1]STATEOntario:Imon[, -1]mon07	0.07748 .
I1[, -1]STATEQuebec:Imon[, -1]mon07	0.09933 .
I1[, -1]STATESaskatchewan:Imon[, -1]mon07	0.04852 *
I1[, -1]STATETexas:Imon[, -1]mon07	0.01333 *
I1[, -1]STATEWashington:Imon[, -1]mon07	0.72303
I1[, -1]STATEBritish Columbia:Imon[, -1]mon08	0.00310 **
I1[, -1]STATECalifornia:Imon[, -1]mon08	0.53724
I1[, -1]STATECampeche:Imon[, -1]mon08	0.01676 *
I1[, -1]STATEColorado:Imon[, -1]mon08	0.55478
I1[, -1]STATEFlorida:Imon[, -1]mon08	0.16925
I1[, -1]STATEIllinois:Imon[, -1]mon08	0.03953 *
I1[, -1]STATEMichoacan:Imon[, -1]mon08	0.20128
I1[, -1]STATENew York:Imon[, -1]mon08	0.07908 .
I1[, -1]STATENorth Carolina:Imon[, -1]mon08	0.75904
I1[, -1]STATENuevo Leon:Imon[, -1]mon08	0.22059
I1[, -1]STATEOntario:Imon[, -1]mon08	0.04031 *
I1[, -1]STATEQuebec:Imon[, -1]mon08	0.05610 .
I1[, -1]STATESaskatchewan:Imon[, -1]mon08	0.02333 *
I1[, -1]STATETexas:Imon[, -1]mon08	0.23543
I1[, -1]STATEWashington:Imon[, -1]mon08	0.03390 *
I1[, -1]STATEBritish Columbia:Imon[, -1]mon09	0.02481 *
I1[, -1]STATECalifornia:Imon[, -1]mon09	0.73244
I1[, -1]STATECampeche:Imon[, -1]mon09	0.05714 .
I1[, -1]STATEColorado:Imon[, -1]mon09	0.18634
I1[, -1]STATEFlorida:Imon[, -1]mon09	0.62885
I1[, -1]STATEIllinois:Imon[, -1]mon09	0.21483
I1[, -1]STATEMichoacan:Imon[, -1]mon09	0.59121
I1[, -1]STATENew York:Imon[, -1]mon09	0.29057
I1[, -1]STATENorth Carolina:Imon[, -1]mon09	0.60423
I1[, -1]STATENuevo Leon:Imon[, -1]mon09	0.34107
I1[, -1]STATEOntario:Imon[, -1]mon09	0.45288
I1[, -1]STATEQuebec:Imon[, -1]mon09	0.25691
I1[, -1]STATESaskatchewan:Imon[, -1]mon09	0.20650
I1[, -1]STATETexas:Imon[, -1]mon09	0.60560
I1[, -1]STATEWashington:Imon[, -1]mon09	0.16327
I1[, -1]STATEBritish Columbia:Imon[, -1]mon10	0.09354 .
I1[, -1]STATECalifornia:Imon[, -1]mon10	0.60056
I1[, -1]STATECampeche:Imon[, -1]mon10	0.42041
I1[, -1]STATEColorado:Imon[, -1]mon10	0.32642
I1[, -1]STATEFlorida:Imon[, -1]mon10	0.58301
I1[, -1]STATEIllinois:Imon[, -1]mon10	0.23595
I1[, -1]STATEMichoacan:Imon[, -1]mon10	0.24712
I1[, -1]STATENew York:Imon[, -1]mon10	0.82177
I1[, -1]STATENorth Carolina:Imon[, -1]mon10	0.19028
I1[, -1]STATENuevo Leon:Imon[, -1]mon10	0.08679 .
I1[, -1]STATEOntario:Imon[, -1]mon10	0.61931
I1[, -1]STATEQuebec:Imon[, -1]mon10	0.51153
I1[, -1]STATESaskatchewan:Imon[, -1]mon10	0.95793
I1[, -1]STATETexas:Imon[, -1]mon10	0.53140
I1[, -1]STATEWashington:Imon[, -1]mon10	0.86395
I1[, -1]STATEBritish Columbia:Imon[, -1]mon11	0.08160 .
I1[, -1]STATECalifornia:Imon[, -1]mon11	0.80277

```

I1[, -1]STATECampeche:Imon[, -1]mon11      0.61986
I1[, -1]STATEColorado:Imon[, -1]mon11      0.20080
I1[, -1]STATEFlorida:Imon[, -1]mon11      0.17496
I1[, -1]STATEIllinois:Imon[, -1]mon11     0.20195
I1[, -1]STATEMichoacan:Imon[, -1]mon11    0.38132
I1[, -1]STATENew York:Imon[, -1]mon11    0.02868 *
I1[, -1]STATENorth Carolina:Imon[, -1]mon11 0.68289
I1[, -1]STATENuevo Leon:Imon[, -1]mon11   0.64727
I1[, -1]STATEOntario:Imon[, -1]mon11     0.25275
I1[, -1]STATEQuebec:Imon[, -1]mon11      0.73905
I1[, -1]STATESaskatchewan:Imon[, -1]mon11 0.10482
I1[, -1]STATETexas:Imon[, -1]mon11       0.02087 *
I1[, -1]STATEWashington:Imon[, -1]mon11   0.10731
I1[, -1]STATEBritish Columbia:Imon[, -1]mon12 0.01530 *
I1[, -1]STATECalifornia:Imon[, -1]mon12   0.86022
I1[, -1]STATECampeche:Imon[, -1]mon12     0.20419
I1[, -1]STATEColorado:Imon[, -1]mon12     0.81282
I1[, -1]STATEFlorida:Imon[, -1]mon12     0.24529
I1[, -1]STATEIllinois:Imon[, -1]mon12    0.14360
I1[, -1]STATEMichoacan:Imon[, -1]mon12   0.91427
I1[, -1]STATENew York:Imon[, -1]mon12    0.81033
I1[, -1]STATENorth Carolina:Imon[, -1]mon12 0.34465
I1[, -1]STATENuevo Leon:Imon[, -1]mon12   0.20073
I1[, -1]STATEOntario:Imon[, -1]mon12     0.33870
I1[, -1]STATEQuebec:Imon[, -1]mon12      0.24728
I1[, -1]STATESaskatchewan:Imon[, -1]mon12 0.08427 .
I1[, -1]STATETexas:Imon[, -1]mon12      2.91e-05 ***
I1[, -1]STATEWashington:Imon[, -1]mon12   0.31622
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

Residual standard error: 470.2 on 22848 degrees of freedom
 Multiple R-squared: 0.4914, Adjusted R-squared: 0.4872
 F-statistic: 115.6 on 191 and 22848 DF, p-value: < 2.2e-16

Call:

lm(formula = diff ~ I1[, -1] * Imon[, -1], data = df)

Residuals:

Min	1Q	Median	3Q	Max
-1215.96	-222.61	-17.44	137.93	2298.41

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	362.5875	40.0796	9.047
I1[, -1]STATEBritish Columbia	108.4500	56.6811	1.913
I1[, -1]STATECalifornia	758.8069	56.6811	13.387
I1[, -1]STATECampeche	-56.6062	56.6811	-0.999
I1[, -1]STATEColorado	253.8563	56.6811	4.479
I1[, -1]STATEFlorida	182.2125	56.6811	3.215
I1[, -1]STATEIllinois	-314.0737	43.9050	-7.153
I1[, -1]STATEMichoacan	3.4688	56.6811	0.061
I1[, -1]STATENew York	631.6125	56.6811	11.143
I1[, -1]STATENorth Carolina	252.8625	56.6811	4.461
I1[, -1]STATENuevo Leon	-9.3937	56.6811	-0.166
I1[, -1]STATEOntario	92.7375	56.6811	1.636
I1[, -1]STATEQuebec	49.8563	56.6811	0.880
I1[, -1]STATESaskatchewan	153.1875	56.6811	2.703
I1[, -1]STATETexas	580.3031	56.6811	10.238
I1[, -1]STATEWashington	219.8813	56.6811	3.879
Imon[, -1]mon02	4.3125	56.6811	0.076
Imon[, -1]mon03	-6.7875	56.6811	-0.120
Imon[, -1]mon04	33.3375	56.6811	0.588
Imon[, -1]mon05	36.0375	56.6811	0.636
Imon[, -1]mon06	-10.9125	56.6811	-0.193
Imon[, -1]mon07	-40.6875	56.6811	-0.718
Imon[, -1]mon08	-15.0562	56.6811	-0.266
Imon[, -1]mon09	-15.3000	56.6811	-0.270
Imon[, -1]mon10	39.6000	56.6811	0.699
Imon[, -1]mon11	10.1813	56.6811	0.180
Imon[, -1]mon12	-95.6062	56.6811	-1.687
I1[, -1]STATEBritish Columbia:Imon[, -1]mon02	113.2500	80.1591	1.413
I1[, -1]STATECalifornia:Imon[, -1]mon02	-94.3913	80.1591	-1.178
I1[, -1]STATECampeche:Imon[, -1]mon02	87.2812	80.1591	1.089
I1[, -1]STATEColorado:Imon[, -1]mon02	-23.8688	80.1591	-0.298
I1[, -1]STATEFlorida:Imon[, -1]mon02	21.6375	80.1591	0.270
I1[, -1]STATEIllinois:Imon[, -1]mon02	-4.0734	62.0910	-0.066
I1[, -1]STATEMichoacan:Imon[, -1]mon02	-38.0250	80.1591	-0.474
I1[, -1]STATENew York:Imon[, -1]mon02	-20.1225	80.1591	-0.251
I1[, -1]STATENorth Carolina:Imon[, -1]mon02	-71.2688	80.1591	-0.889
I1[, -1]STATENuevo Leon:Imon[, -1]mon02	-31.1625	80.1591	-0.389
I1[, -1]STATEOntario:Imon[, -1]mon02	-17.3438	80.1591	-0.216
I1[, -1]STATEQuebec:Imon[, -1]mon02	124.8937	80.1591	1.558
I1[, -1]STATESaskatchewan:Imon[, -1]mon02	-13.8188	80.1591	-0.172
I1[, -1]STATETexas:Imon[, -1]mon02	-17.5594	80.1591	-0.219
I1[, -1]STATEWashington:Imon[, -1]mon02	58.8937	80.1591	0.735
I1[, -1]STATEBritish Columbia:Imon[, -1]mon03	11.0437	80.1591	0.138
I1[, -1]STATECalifornia:Imon[, -1]mon03	-98.9100	80.1591	-1.234
I1[, -1]STATECampeche:Imon[, -1]mon03	21.0562	80.1591	0.263
I1[, -1]STATEColorado:Imon[, -1]mon03	-21.1313	80.1591	-0.264
I1[, -1]STATEFlorida:Imon[, -1]mon03	16.5187	80.1591	0.206
I1[, -1]STATEIllinois:Imon[, -1]mon03	4.9160	62.0910	0.079
I1[, -1]STATEMichoacan:Imon[, -1]mon03	39.0375	80.1591	0.487
I1[, -1]STATENew York:Imon[, -1]mon03	232.3875	80.1591	2.899
I1[, -1]STATENorth Carolina:Imon[, -1]mon03	68.7937	80.1591	0.858
I1[, -1]STATENuevo Leon:Imon[, -1]mon03	-17.9625	80.1591	-0.224

I1[, -1]STATEOntario:Imon[, -1]mon03	-1.5000	80.1591	-0.019
I1[, -1]STATEQuebec:Imon[, -1]mon03	75.1500	80.1591	0.938
I1[, -1]STATESaskatchewan:Imon[, -1]mon03	55.9312	80.1591	0.698
I1[, -1]STATETexas:Imon[, -1]mon03	10.4437	80.1591	0.130
I1[, -1]STATEWashington:Imon[, -1]mon03	56.7375	80.1591	0.708
I1[, -1]STATEBritish Columbia:Imon[, -1]mon04	-11.4188	80.1591	-0.142
I1[, -1]STATECalifornia:Imon[, -1]mon04	-106.9688	80.1591	-1.334
I1[, -1]STATECampeche:Imon[, -1]mon04	23.3625	80.1591	0.291
I1[, -1]STATEColorado:Imon[, -1]mon04	36.6375	80.1591	0.457
I1[, -1]STATEFlorida:Imon[, -1]mon04	-1.8938	80.1591	-0.024
I1[, -1]STATEIllinois:Imon[, -1]mon04	-30.7624	62.0910	-0.495
I1[, -1]STATEMichoacan:Imon[, -1]mon04	-70.3313	80.1591	-0.877
I1[, -1]STATENew York:Imon[, -1]mon04	-50.2575	80.1591	-0.627
I1[, -1]STATENorth Carolina:Imon[, -1]mon04	94.4062	80.1591	1.178
I1[, -1]STATENuevo Leon:Imon[, -1]mon04	12.0187	80.1591	0.150
I1[, -1]STATEOntario:Imon[, -1]mon04	113.7187	80.1591	1.419
I1[, -1]STATEQuebec:Imon[, -1]mon04	13.3312	80.1591	0.166
I1[, -1]STATESaskatchewan:Imon[, -1]mon04	-84.2250	80.1591	-1.051
I1[, -1]STATETexas:Imon[, -1]mon04	-39.2719	80.1591	-0.490
I1[, -1]STATEWashington:Imon[, -1]mon04	10.8187	80.1591	0.135
I1[, -1]STATEBritish Columbia:Imon[, -1]mon05	102.9937	80.1591	1.285
I1[, -1]STATECalifornia:Imon[, -1]mon05	3.2644	80.1591	0.041
I1[, -1]STATECampeche:Imon[, -1]mon05	-32.5688	80.1591	-0.406
I1[, -1]STATEColorado:Imon[, -1]mon05	-121.2000	80.1591	-1.512
I1[, -1]STATEFlorida:Imon[, -1]mon05	114.3375	80.1591	1.426
I1[, -1]STATEIllinois:Imon[, -1]mon05	-38.9870	62.0910	-0.628
I1[, -1]STATEMichoacan:Imon[, -1]mon05	-75.0188	80.1591	-0.936
I1[, -1]STATENew York:Imon[, -1]mon05	-80.9775	80.1591	-1.010
I1[, -1]STATENorth Carolina:Imon[, -1]mon05	-9.8250	80.1591	-0.123
I1[, -1]STATENuevo Leon:Imon[, -1]mon05	-94.4063	80.1591	-1.178
I1[, -1]STATEOntario:Imon[, -1]mon05	-45.6563	80.1591	-0.570
I1[, -1]STATEQuebec:Imon[, -1]mon05	-28.5750	80.1591	-0.356
I1[, -1]STATESaskatchewan:Imon[, -1]mon05	-42.0188	80.1591	-0.524
I1[, -1]STATETexas:Imon[, -1]mon05	78.9937	80.1591	0.985
I1[, -1]STATEWashington:Imon[, -1]mon05	-85.9875	80.1591	-1.073
I1[, -1]STATEBritish Columbia:Imon[, -1]mon06	65.8312	80.1591	0.821
I1[, -1]STATECalifornia:Imon[, -1]mon06	-19.6238	80.1591	-0.245
I1[, -1]STATECampeche:Imon[, -1]mon06	87.6187	80.1591	1.093
I1[, -1]STATEColorado:Imon[, -1]mon06	-25.1063	80.1591	-0.313
I1[, -1]STATEFlorida:Imon[, -1]mon06	87.8812	80.1591	1.096
I1[, -1]STATEIllinois:Imon[, -1]mon06	10.3875	62.0910	0.167
I1[, -1]STATEMichoacan:Imon[, -1]mon06	-48.7688	80.1591	-0.608
I1[, -1]STATENew York:Imon[, -1]mon06	-62.4675	80.1591	-0.779
I1[, -1]STATENorth Carolina:Imon[, -1]mon06	-47.8125	80.1591	-0.596
I1[, -1]STATENuevo Leon:Imon[, -1]mon06	8.7562	80.1591	0.109
I1[, -1]STATEOntario:Imon[, -1]mon06	66.5250	80.1591	0.830
I1[, -1]STATEQuebec:Imon[, -1]mon06	124.8187	80.1591	1.557
I1[, -1]STATESaskatchewan:Imon[, -1]mon06	-31.7063	80.1591	-0.396
I1[, -1]STATETexas:Imon[, -1]mon06	79.7344	80.1591	0.995
I1[, -1]STATEWashington:Imon[, -1]mon06	127.0312	80.1591	1.585
I1[, -1]STATEBritish Columbia:Imon[, -1]mon07	-16.5750	80.1591	-0.207
I1[, -1]STATECalifornia:Imon[, -1]mon07	10.4700	80.1591	0.131
I1[, -1]STATECampeche:Imon[, -1]mon07	110.2875	80.1591	1.376
I1[, -1]STATEColorado:Imon[, -1]mon07	3.3187	80.1591	0.041
I1[, -1]STATEFlorida:Imon[, -1]mon07	143.4750	80.1591	1.790
I1[, -1]STATEIllinois:Imon[, -1]mon07	42.2498	62.0910	0.680
I1[, -1]STATEMichoacan:Imon[, -1]mon07	-14.5500	80.1591	-0.182
I1[, -1]STATENew York:Imon[, -1]mon07	-39.2025	80.1591	-0.489
I1[, -1]STATENorth Carolina:Imon[, -1]mon07	45.7500	80.1591	0.571
I1[, -1]STATENuevo Leon:Imon[, -1]mon07	49.7062	80.1591	0.620
I1[, -1]STATEOntario:Imon[, -1]mon07	62.4937	80.1591	0.780

I1[, -1]STATEQuebec:Imon[, -1]mon07	93.5062	80.1591	1.167
I1[, -1]STATESaskatchewan:Imon[, -1]mon07	19.0875	80.1591	0.238
I1[, -1]STATETexas:Imon[, -1]mon07	58.8562	80.1591	0.734
I1[, -1]STATEWashington:Imon[, -1]mon07	13.9125	80.1591	0.174
I1[, -1]STATEBritish Columbia:Imon[, -1]mon08	-20.6063	80.1591	-0.257
I1[, -1]STATECalifornia:Imon[, -1]mon08	15.7894	80.1591	0.197
I1[, -1]STATECampeche:Imon[, -1]mon08	76.5750	80.1591	0.955
I1[, -1]STATEColorado:Imon[, -1]mon08	87.0187	80.1591	1.086
I1[, -1]STATEFlorida:Imon[, -1]mon08	158.9625	80.1591	1.983
I1[, -1]STATEIllinois:Imon[, -1]mon08	13.6180	62.0910	0.219
I1[, -1]STATEMichoacan:Imon[, -1]mon08	-93.3563	80.1591	-1.165
I1[, -1]STATENew York:Imon[, -1]mon08	62.0662	80.1591	0.774
I1[, -1]STATENorth Carolina:Imon[, -1]mon08	-34.6313	80.1591	-0.432
I1[, -1]STATENuevo Leon:Imon[, -1]mon08	-68.6063	80.1591	-0.856
I1[, -1]STATEOntario:Imon[, -1]mon08	21.9750	80.1591	0.274
I1[, -1]STATEQuebec:Imon[, -1]mon08	59.8312	80.1591	0.746
I1[, -1]STATESaskatchewan:Imon[, -1]mon08	48.6750	80.1591	0.607
I1[, -1]STATETexas:Imon[, -1]mon08	0.6000	80.1591	0.007
I1[, -1]STATEWashington:Imon[, -1]mon08	126.7875	80.1591	1.582
I1[, -1]STATEBritish Columbia:Imon[, -1]mon09	-6.3563	80.1591	-0.079
I1[, -1]STATECalifornia:Imon[, -1]mon09	2.1994	80.1591	0.027
I1[, -1]STATECampeche:Imon[, -1]mon09	-4.3125	80.1591	-0.054
I1[, -1]STATEColorado:Imon[, -1]mon09	32.2312	80.1591	0.402
I1[, -1]STATEFlorida:Imon[, -1]mon09	148.9312	80.1591	1.858
I1[, -1]STATEIllinois:Imon[, -1]mon09	17.8289	62.0910	0.287
I1[, -1]STATEMichoacan:Imon[, -1]mon09	-45.1688	80.1591	-0.563
I1[, -1]STATENew York:Imon[, -1]mon09	138.9900	80.1591	1.734
I1[, -1]STATENorth Carolina:Imon[, -1]mon09	171.1875	80.1591	2.136
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I1[, -1]STATEOntario:Imon[, -1]mon09	-2.3063	80.1591	-0.029
I1[, -1]STATEQuebec:Imon[, -1]mon09	130.4062	80.1591	1.627
I1[, -1]STATESaskatchewan:Imon[, -1]mon09	-49.3688	80.1591	-0.616
I1[, -1]STATETexas:Imon[, -1]mon09	119.8687	80.1591	1.495
I1[, -1]STATEWashington:Imon[, -1]mon09	77.8687	80.1591	0.971
I1[, -1]STATEBritish Columbia:Imon[, -1]mon10	-35.0438	80.1591	-0.437
I1[, -1]STATECalifornia:Imon[, -1]mon10	-77.2444	80.1591	-0.964
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I1[, -1]STATEFlorida:Imon[, -1]mon10	-63.5813	80.1591	-0.793
I1[, -1]STATEIllinois:Imon[, -1]mon10	-39.7760	62.0910	-0.641
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I1[, -1]STATEOntario:Imon[, -1]mon10	91.0312	80.1591	1.136
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I1[, -1]STATEWashington:Imon[, -1]mon10	-9.5813	80.1591	-0.120
I1[, -1]STATEBritish Columbia:Imon[, -1]mon11	0.8437	80.1591	0.011
I1[, -1]STATECalifornia:Imon[, -1]mon11	50.1581	80.1591	0.626
I1[, -1]STATECampeche:Imon[, -1]mon11	2.1000	80.1591	0.026
I1[, -1]STATEColorado:Imon[, -1]mon11	91.6875	80.1591	1.144
I1[, -1]STATEFlorida:Imon[, -1]mon11	143.5875	80.1591	1.791
I1[, -1]STATEIllinois:Imon[, -1]mon11	-11.7917	62.0910	-0.190
I1[, -1]STATEMichoacan:Imon[, -1]mon11	-66.8813	80.1591	-0.834
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I1[, -1]STATEOntario:Imon[, -1]mon11	8.0437	80.1591	0.100
I1[, -1]STATEQuebec:Imon[, -1]mon11	117.5437	80.1591	1.466

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I1[, -1]STATENorth Carolina:Imon[, -1]mon12	76.4062	80.1591	0.953
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I1[, -1]STATEQuebec:Imon[, -1]mon12	110.9437	80.1591	1.384
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I1[, -1]STATETexas:Imon[, -1]mon12	139.4812	80.1591	1.740
I1[, -1]STATEWashington:Imon[, -1]mon12	121.0125	80.1591	1.510
Pr(> t)			
(Intercept)	< 2e-16 ***		
I1[, -1]STATEBritish Columbia	0.055717 .		
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I1[, -1]STATENuevo Leon:Imon[, -1]mon11   0.888942
I1[, -1]STATEOntario:Imon[, -1]mon11     0.920070
I1[, -1]STATEQuebec:Imon[, -1]mon11      0.142559
I1[, -1]STATESaskatchewan:Imon[, -1]mon11 0.103288
I1[, -1]STATETexas:Imon[, -1]mon11       0.226375
I1[, -1]STATEWashington:Imon[, -1]mon11   0.198117
I1[, -1]STATEBritish Columbia:Imon[, -1]mon12 0.718685
I1[, -1]STATECalifornia:Imon[, -1]mon12   0.996641
I1[, -1]STATECampeche:Imon[, -1]mon12     0.096119 .
I1[, -1]STATEColorado:Imon[, -1]mon12     0.220946
I1[, -1]STATEFlorida:Imon[, -1]mon12     0.162807
I1[, -1]STATEIllinois:Imon[, -1]mon12    0.105408
I1[, -1]STATEMichoacan:Imon[, -1]mon12   0.986377
I1[, -1]STATENew York:Imon[, -1]mon12    0.014539 *
I1[, -1]STATENorth Carolina:Imon[, -1]mon12 0.340508
I1[, -1]STATENuevo Leon:Imon[, -1]mon12   0.330532
I1[, -1]STATEOntario:Imon[, -1]mon12     0.440596
I1[, -1]STATEQuebec:Imon[, -1]mon12      0.166359
I1[, -1]STATESaskatchewan:Imon[, -1]mon12 0.311376
I1[, -1]STATETexas:Imon[, -1]mon12       0.081863 .
I1[, -1]STATEWashington:Imon[, -1]mon12   0.131146
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

Residual standard error: 392.7 on 22848 degrees of freedom
 Multiple R-squared: 0.3967, Adjusted R-squared: 0.3917
 F-statistic: 78.66 on 191 and 22848 DF, p-value: < 2.2e-16

Model3 : State + Product + State * Product

```
In [63]: #Icountry is for country
Icountry=model.matrix(~COUNTRY, data=df)
Icountryf=data.frame(Icountry)

#Itype is for product type
Itype=model.matrix(~PRODTYPE, data=df)
Itypef=data.frame(Itype)

#Iprod is for product
Iprod=model.matrix(~PRODUCT, data=df)
Iprodf=data.frame(Iprod)

reg3_1=lm(ACTUAL~I1[, -1]*Iprod[, -1], data=df)
summary(reg3_1)
reg3_2=lm(diff~I1[, -1]*Iprod[, -1], data=df)
summary(reg3_2)
```

Call:

```
lm(formula = ACTUAL ~ I1[, -1] * Iprod[, -1], data = df)
```

Residuals:

Min	1Q	Median	3Q	Max
-1617.79	-252.42	-3.37	229.59	1917.25

Coefficients:

	Estimate	Std. Error
(Intercept)	453.8062	27.7728
I1[, -1]STATEBritish Columbia	232.6750	39.2767
I1[, -1]STATECalifornia	1075.3225	39.2767
I1[, -1]STATECampeche	7.6063	39.2767
I1[, -1]STATEColorado	466.4938	39.2767
I1[, -1]STATEFlorida	408.7937	39.2767
I1[, -1]STATEIllinois	-383.1763	30.4236
I1[, -1]STATEMichoacan	-0.8062	39.2767
I1[, -1]STATENew York	1093.3938	39.2767
I1[, -1]STATENorth Carolina	452.2313	39.2767
I1[, -1]STATENuevo Leon	37.0313	39.2767
I1[, -1]STATEOntario	221.5188	39.2767
I1[, -1]STATEQuebec	257.0875	39.2767
I1[, -1]STATESaskatchewan	218.3063	39.2767
I1[, -1]STATETexas	877.3219	39.2767
I1[, -1]STATEWashington	375.6000	39.2767
Iprod[, -1]PRODUCTCHAIR	-42.6000	39.2767
Iprod[, -1]PRODUCTDESK	14.9188	39.2767
Iprod[, -1]PRODUCTSOFA	21.6625	39.2767
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTCHAIR	53.7062	55.5456
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTCHAIR	-27.5781	55.5456
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTCHAIR	42.5562	55.5456
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTCHAIR	76.3187	55.5456
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTCHAIR	68.7625	55.5456
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTCHAIR	41.9776	43.0254
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTCHAIR	30.9312	55.5456
I1[, -1]STATENew York:Iprod[, -1]PRODUCTCHAIR	-85.0700	55.5456
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTCHAIR	81.7500	55.5456
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTCHAIR	27.4062	55.5456
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTCHAIR	-8.1000	55.5456
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTCHAIR	25.2875	55.5456
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTCHAIR	70.4187	55.5456
I1[, -1]STATETexas:Iprod[, -1]PRODUCTCHAIR	108.6844	55.5456
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTCHAIR	125.4125	55.5456
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTDESK	-54.6563	55.5456
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTDESK	39.2050	55.5456
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTDESK	-4.6688	55.5456
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTDESK	-47.6750	55.5456
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTDESK	-1.2750	55.5456
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTDESK	-14.7687	43.0254
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTDESK	-24.8875	55.5456
I1[, -1]STATENew York:Iprod[, -1]PRODUCTDESK	-117.1088	55.5456
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTDESK	-18.9875	55.5456
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTDESK	-72.9438	55.5456
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTDESK	34.6812	55.5456
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTDESK	-22.4938	55.5456
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTDESK	36.8625	55.5456
I1[, -1]STATETexas:Iprod[, -1]PRODUCTDESK	18.9719	55.5456
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTDESK	38.5937	55.5456
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTSOFA	42.8375	55.5456
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTSOFA	95.5631	55.5456
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTSOFA	-38.8125	55.5456

I1[, -1]STATEColorado:Iprod[, -1]PRODUCTSOFA	-30.7313	55.5456
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTSOFA	15.6062	55.5456
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTSOFA	-18.3088	43.0254
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTSOFA	31.8750	55.5456
I1[, -1]STATENew York:Iprod[, -1]PRODUCTSOFA	-58.7525	55.5456
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTSOFA	45.2812	55.5456
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTSOFA	-74.6375	55.5456
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTSOFA	-13.3688	55.5456
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTSOFA	-35.4125	55.5456
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTSOFA	18.6500	55.5456
I1[, -1]STATETexas:Iprod[, -1]PRODUCTSOFA	166.2969	55.5456
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTSOFA	97.8437	55.5456
(Intercept)	t value	Pr(> t)
I1[, -1]STATEBritish Columbia	16.340	< 2e-16 ***
I1[, -1]STATECalifornia	5.924	3.19e-09 ***
I1[, -1]STATECampeche	27.378	< 2e-16 ***
I1[, -1]STATEColorado	0.194	0.84645
I1[, -1]STATEFlorida	11.877	< 2e-16 ***
I1[, -1]STATEIllinois	10.408	< 2e-16 ***
I1[, -1]STATEMichoacan	-12.595	< 2e-16 ***
I1[, -1]STATENew York	-0.021	0.98362
I1[, -1]STATENorth Carolina	27.838	< 2e-16 ***
I1[, -1]STATENuevo Leon	11.514	< 2e-16 ***
I1[, -1]STATEOntario	0.943	0.34578
I1[, -1]STATEQuebec	5.640	1.72e-08 ***
I1[, -1]STATESaskatchewan	6.546	6.05e-11 ***
I1[, -1]STATETexas	5.558	2.76e-08 ***
I1[, -1]STATEWashington	22.337	< 2e-16 ***
Iprod[, -1]PRODUCTCHAIR	9.563	< 2e-16 ***
Iprod[, -1]PRODUCTDESK	-1.085	0.27810
Iprod[, -1]PRODUCTSOFA	0.380	0.70407
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTCHAIR	0.552	0.58127
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTCHAIR	0.967	0.33361
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTCHAIR	-0.496	0.61955
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTCHAIR	0.766	0.44359
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTCHAIR	1.374	0.16946
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTCHAIR	1.238	0.21575
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTCHAIR	0.976	0.32925
I1[, -1]STATENew York:Iprod[, -1]PRODUCTCHAIR	0.557	0.57763
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTCHAIR	-1.532	0.12565
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTCHAIR	1.472	0.14110
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTCHAIR	0.493	0.62173
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTCHAIR	-0.146	0.88406
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTCHAIR	0.455	0.64893
I1[, -1]STATETexas:Iprod[, -1]PRODUCTCHAIR	1.268	0.20489
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTCHAIR	1.957	0.05040 .
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTDESK	2.258	0.02397 *
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTDESK	-0.984	0.32513
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTDESK	0.706	0.48031
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTDESK	-0.084	0.93302
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTDESK	-0.858	0.39073
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTDESK	-0.023	0.98169
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTDESK	-0.343	0.73141
I1[, -1]STATENew York:Iprod[, -1]PRODUCTDESK	-0.448	0.65412
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTDESK	-2.108	0.03501 *
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTDESK	-0.342	0.73248
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTDESK	-1.313	0.18912
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTDESK	0.624	0.53239
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTDESK	-0.405	0.68551
I1[, -1]STATETexas:Iprod[, -1]PRODUCTDESK	0.664	0.50692
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTDESK	0.342	0.73269

I1[, -1]STATEWashington:Iprod[, -1]PRODUCTDESK	0.695	0.48718
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTSOFA	0.771	0.44059
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTSOFA	1.720	0.08537 .
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTSOFA	-0.699	0.48472
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTSOFA	-0.553	0.58009
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTSOFA	0.281	0.77874
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTSOFA	-0.426	0.67045
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTSOFA	0.574	0.56607
I1[, -1]STATENew York:Iprod[, -1]PRODUCTSOFA	-1.058	0.29019
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTSOFA	0.815	0.41496
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTSOFA	-1.344	0.17905
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTSOFA	-0.241	0.80980
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTSOFA	-0.638	0.52378
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTSOFA	0.336	0.73705
I1[, -1]STATETexas:Iprod[, -1]PRODUCTSOFA	2.994	0.00276 **
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTSOFA	1.762	0.07817 .

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1		

Residual standard error: 471.3 on 22976 degrees of freedom

Multiple R-squared: 0.486, Adjusted R-squared: 0.4846

F-statistic: 344.9 on 63 and 22976 DF, p-value: < 2.2e-16

Call:

```
lm(formula = diff ~ I1[, -1] * Iprod[, -1], data = df)
```

Residuals:

Min	1Q	Median	3Q	Max
-1135.06	-227.91	-17.58	137.39	2271.59

Coefficients:

	Estimate	Std. Error
(Intercept)	358.5250	23.1965
I1[, -1]STATEBritish Columbia	138.4125	32.8047
I1[, -1]STATECalifornia	749.5031	32.8047
I1[, -1]STATECampeche	-36.2625	32.8047
I1[, -1]STATEColorado	227.4625	32.8047
I1[, -1]STATEFlorida	243.0313	32.8047
I1[, -1]STATEIllinois	-307.7043	25.4104
I1[, -1]STATEMichoacan	-28.9562	32.8047
I1[, -1]STATENew York	590.8550	32.8047
I1[, -1]STATENorth Carolina	255.5313	32.8047
I1[, -1]STATENuevo Leon	-39.8187	32.8047
I1[, -1]STATEOntario	151.8313	32.8047
I1[, -1]STATEQuebec	122.2938	32.8047
I1[, -1]STATESaskatchewan	120.1125	32.8047
I1[, -1]STATETexas	587.4688	32.8047
I1[, -1]STATEWashington	277.6250	32.8047
Iprod[, -1]PRODUCTCHAIR	-3.2812	32.8047
Iprod[, -1]PRODUCTDESK	8.2375	32.8047
Iprod[, -1]PRODUCTSOFA	-9.0000	32.8047
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTCHAIR	-41.4438	46.3929
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTCHAIR	-8.6825	46.3929
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTCHAIR	-4.4063	46.3929
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTCHAIR	52.8375	46.3929
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTCHAIR	10.6187	46.3929
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTCHAIR	1.1194	35.9358
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTCHAIR	-12.8813	46.3929
I1[, -1]STATENew York:Iprod[, -1]PRODUCTCHAIR	109.1412	46.3929
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTCHAIR	21.9687	46.3929
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTCHAIR	15.7750	46.3929
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTCHAIR	-53.7250	46.3929
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTCHAIR	-15.5625	46.3929
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTCHAIR	9.4500	46.3929
I1[, -1]STATETexas:Iprod[, -1]PRODUCTCHAIR	-1.2750	46.3929
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTCHAIR	-48.2438	46.3929
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTDESK	2.1000	46.3929
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTDESK	21.5125	46.3929
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTDESK	28.7375	46.3929
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTDESK	53.5250	46.3929
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTDESK	-2.8500	46.3929
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTDESK	-11.5841	35.9358
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTDESK	-0.4625	46.3929
I1[, -1]STATENew York:Iprod[, -1]PRODUCTDESK	132.6525	46.3929
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTDESK	-40.3125	46.3929
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTDESK	16.4875	46.3929
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTDESK	-60.7750	46.3929
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTDESK	-55.4688	46.3929
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTDESK	8.0500	46.3929
I1[, -1]STATETexas:Iprod[, -1]PRODUCTDESK	53.5437	46.3929
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTDESK	-90.5750	46.3929
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTSOFA	-2.8938	46.3929
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTSOFA	-80.8131	46.3929
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTSOFA	63.5312	46.3929

I1[, -1]STATEColorado:Iprod[, -1]PRODUCTSOFA	48.1562	46.3929
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTSOFA	42.8687	46.3929
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTSOFA	6.3705	35.9358
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTSOFA	-30.4563	46.3929
I1[, -1]STATENew York:Iprod[, -1]PRODUCTSOFA	64.8300	46.3929
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTSOFA	80.8187	46.3929
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTSOFA	59.2750	46.3929
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTSOFA	-2.2750	46.3929
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTSOFA	25.6625	46.3929
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTSOFA	41.2687	46.3929
I1[, -1]STATETexas:Iprod[, -1]PRODUCTSOFA	-20.2313	46.3929
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTSOFA	39.2875	46.3929
(Intercept)	t	value Pr(> t)
I1[, -1]STATEBritish Columbia	15.456	< 2e-16 ***
I1[, -1]STATECalifornia	4.219	2.46e-05 ***
I1[, -1]STATECampeche	22.847	< 2e-16 ***
I1[, -1]STATEColorado	-1.105	0.268996
I1[, -1]STATEFlorida	6.934	4.20e-12 ***
I1[, -1]STATEIllinois	7.408	1.32e-13 ***
I1[, -1]STATEMichoacan	-12.109	< 2e-16 ***
I1[, -1]STATENew York	-0.883	0.377416
I1[, -1]STATENorth Carolina	18.011	< 2e-16 ***
I1[, -1]STATENuevo Leon	7.789	7.01e-15 ***
I1[, -1]STATEOntario	-1.214	0.224832
I1[, -1]STATEQuebec	4.628	3.71e-06 ***
I1[, -1]STATESaskatchewan	3.728	0.000194 ***
I1[, -1]STATETexas	3.661	0.000251 ***
I1[, -1]STATEWashington	17.908	< 2e-16 ***
Iprod[, -1]PRODUCTCHAIR	8.463	< 2e-16 ***
Iprod[, -1]PRODUCTDESK	-0.100	0.920326
Iprod[, -1]PRODUCTSOFA	0.251	0.801734
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTCHAIR	-0.274	0.783818
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTCHAIR	-0.893	0.371695
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTCHAIR	-0.187	0.851544
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTCHAIR	-0.095	0.924334
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTCHAIR	1.139	0.254751
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTCHAIR	0.229	0.818958
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTCHAIR	0.031	0.975150
I1[, -1]STATENew York:Iprod[, -1]PRODUCTCHAIR	-0.278	0.781279
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTCHAIR	2.353	0.018654 *
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTCHAIR	0.474	0.635835
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTCHAIR	0.340	0.733837
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTCHAIR	-1.158	0.246858
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTCHAIR	-0.335	0.737289
I1[, -1]STATETexas:Iprod[, -1]PRODUCTCHAIR	0.204	0.838594
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTCHAIR	-0.027	0.978075
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTDESK	-1.040	0.298400
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTDESK	0.045	0.963896
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTDESK	0.464	0.642865
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTDESK	0.619	0.535634
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTDESK	1.154	0.248622
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTDESK	-0.061	0.951016
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTDESK	-0.322	0.747186
I1[, -1]STATENew York:Iprod[, -1]PRODUCTDESK	-0.010	0.992046
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTDESK	2.859	0.004249 **
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTDESK	-0.869	0.384891
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTDESK	0.355	0.722302
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTDESK	-1.310	0.190207
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTDESK	-1.196	0.231853
I1[, -1]STATETexas:Iprod[, -1]PRODUCTDESK	0.174	0.862246

```

I1[, -1]STATEWashington:Iprod[, -1]PRODUCTDESK      -1.952 0.050909 .
I1[, -1]STATEBritish Columbia:Iprod[, -1]PRODUCTSOFA -0.062 0.950265
I1[, -1]STATECalifornia:Iprod[, -1]PRODUCTSOFA     -1.742 0.081534 .
I1[, -1]STATECampeche:Iprod[, -1]PRODUCTSOFA       1.369 0.170882
I1[, -1]STATEColorado:Iprod[, -1]PRODUCTSOFA       1.038 0.299277
I1[, -1]STATEFlorida:Iprod[, -1]PRODUCTSOFA        0.924 0.355477
I1[, -1]STATEIllinois:Iprod[, -1]PRODUCTSOFA       0.177 0.859295
I1[, -1]STATEMichoacan:Iprod[, -1]PRODUCTSOFA      -0.656 0.511519
I1[, -1]STATENew York:Iprod[, -1]PRODUCTSOFA       1.397 0.162303
I1[, -1]STATENorth Carolina:Iprod[, -1]PRODUCTSOFA 1.742 0.081513 .
I1[, -1]STATENuevo Leon:Iprod[, -1]PRODUCTSOFA     1.278 0.201377
I1[, -1]STATEOntario:Iprod[, -1]PRODUCTSOFA       -0.049 0.960890
I1[, -1]STATEQuebec:Iprod[, -1]PRODUCTSOFA        0.553 0.580162
I1[, -1]STATESaskatchewan:Iprod[, -1]PRODUCTSOFA   0.890 0.373718
I1[, -1]STATETexas:Iprod[, -1]PRODUCTSOFA         -0.436 0.662779
I1[, -1]STATEWashington:Iprod[, -1]PRODUCTSOFA      0.847 0.397091
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 393.7 on 22976 degrees of freedom
Multiple R-squared:  0.3904,    Adjusted R-squared:  0.3887
F-statistic: 233.5 on 63 and 22976 DF,  p-value: < 2.2e-16

```