

Direct Marketing

MP

2015-05-14

```
> setwd("D:/Dropbox/R/2015-NUS/Session-1/(b) R-Functions/DirectMarketing")
```

```
> Dataset <-  
+   read.table("D:/Dropbox/R/2015-NUS/Session-1/(b) R-Functions/DirectMarketing/Table 2.6 DirectMarketin  
+   header=TRUE, sep=",", na.strings="NA", dec=".", strip.white=TRUE)
```

```
> summary(Dataset)
```

Age	Gender	OwnHome	Married	Location
Middle:508	Female:506	Own :516	Married:502	Close:710
Old :205	Male :494	Rent:484	Single :498	Far :290
Young :287				

Salary	Children	History	Catalogs
Min. : 10100	Min. :0.000	High :255	Min. : 6.00
1st Qu.: 29975	1st Qu.:0.000	Low :230	1st Qu.: 6.00
Median : 53700	Median :1.000	Medium:212	Median :12.00
Mean : 56104	Mean :0.934	NA's :303	Mean :14.68
3rd Qu.: 77025	3rd Qu.:2.000		3rd Qu.:18.00
Max. :168800	Max. :3.000		Max. :24.00

AmountSpent
Min. : 38.0
1st Qu.: 488.2
Median : 962.0
Mean :1216.8
3rd Qu.:1688.5
Max. :6217.0

```
> library(abind, pos=15)
```

```
> library(e1071, pos=16)
```

```
> numSummary(Dataset[,c("AmountSpent", "Catalogs", "Children", "Salary")],
+ statistics=c("mean", "sd", "IQR", "quantiles"), quantiles=c(0,.25,.5,.75,1))
```

	mean	sd	IQR	0%	25%	50%	75%
AmountSpent	1216.770	961.068613	1200.25	38	488.25	962	1688.5
Catalogs	14.682	6.622895	12.00	6	6.00	12	18.0
Children	0.934	1.051070	2.00	0	0.00	1	2.0
Salary	56103.900	30616.314826	47050.00	10100	29975.00	53700	77025.0

	100%	n
AmountSpent	6217	1000
Catalogs	24	1000
Children	3	1000
Salary	168800	1000

```
> local({
+   .Table <- with(Dataset, table(Age))
+   cat("\ncounts:\n")
+   print(.Table)
+   cat("\npercentages:\n")
+   print(round(100*.Table/sum(.Table), 2))
+ })
```

```
counts:
Age
Middle    Old    Young
   508    205    287

percentages:
Age
Middle    Old    Young
   50.8    20.5    28.7
```

```
> local({
+   .Table <- with(Dataset, table(Gender))
+   cat("\ncounts:\n")
+   print(.Table)
+   cat("\npercentages:\n")
+   print(round(100*.Table/sum(.Table), 2))
+ })
```

```
counts:
Gender
Female   Male
   506   494

percentages:
Gender
Female   Male
   50.6   49.4
```

```
> local({
+   .Table <- with(Dataset, table(History))
+   cat("\ncounts:\n")
+   print(.Table)
+   cat("\npercentages:\n")
+   print(round(100*.Table/sum(.Table), 2))
+ })
```

```
counts:
History
  High   Low Medium
  255   230   212
```

```
percentages:
History
  High   Low Medium
 36.59  33.00  30.42
```

```
> local({
+   .Table <- with(Dataset, table(Location))
+   cat("\ncounts:\n")
+   print(.Table)
+   cat("\npercentages:\n")
+   print(round(100*.Table/sum(.Table), 2))
+ })
```

```
counts:
Location
Close  Far
  710  290
```

```
percentages:
Location
Close  Far
  71   29
```

```
> local({
+   .Table <- with(Dataset, table(Married))
+   cat("\ncounts:\n")
+   print(.Table)
+   cat("\npercentages:\n")
+   print(round(100*.Table/sum(.Table), 2))
+ })
```

```
counts:
Married
Married  Single
      502    498
```

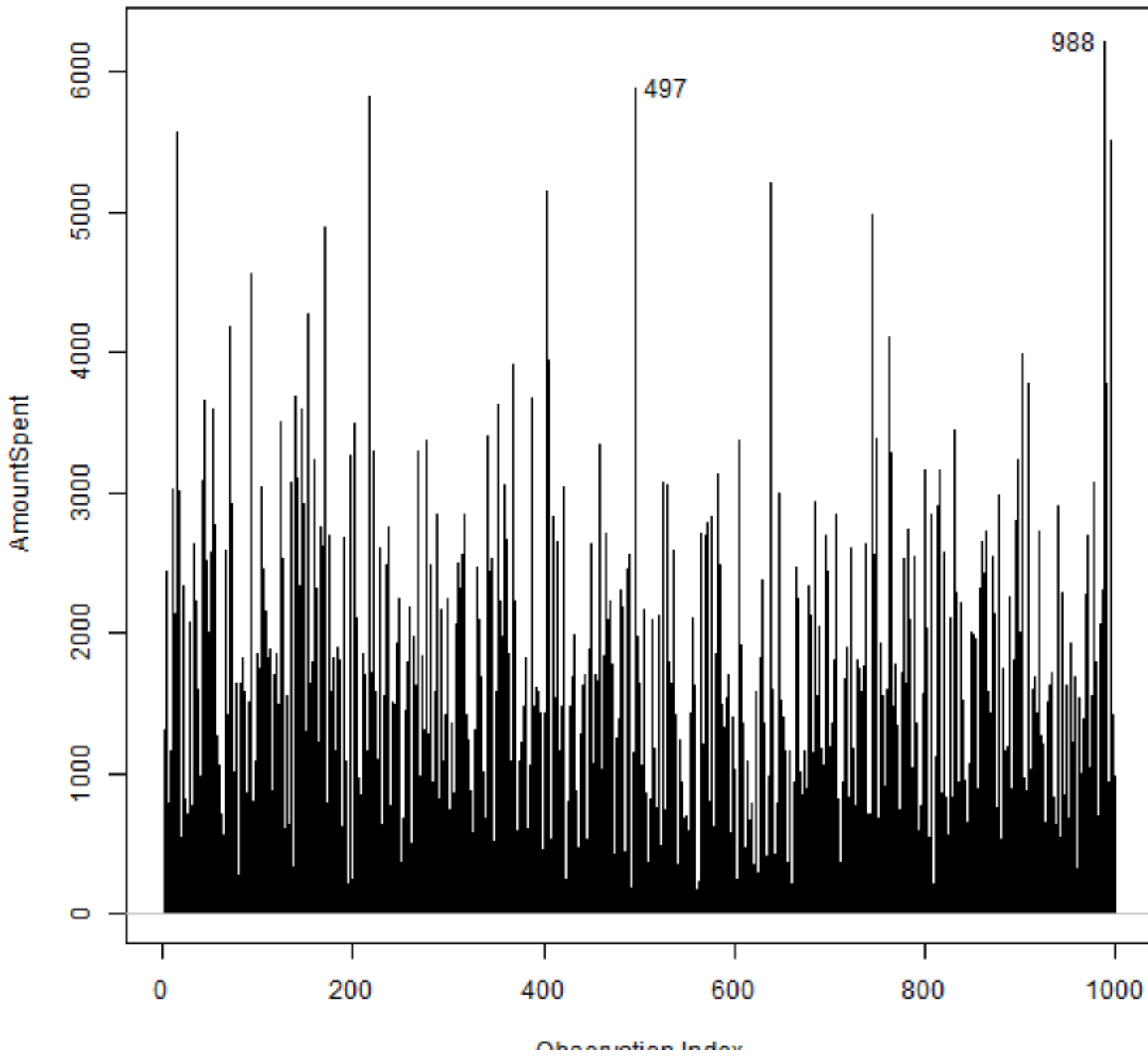
```
percentages:
Married
Married  Single
      50.2   49.8
```

```
> local({
+   .Table <- with(Dataset, table(OwnHome))
+   cat("\ncounts:\n")
+   print(.Table)
+   cat("\npercentages:\n")
+   print(round(100*.Table/sum(.Table), 2))
+ })
```

```
counts:  
OwnHome  
  Own Rent  
  516  484
```

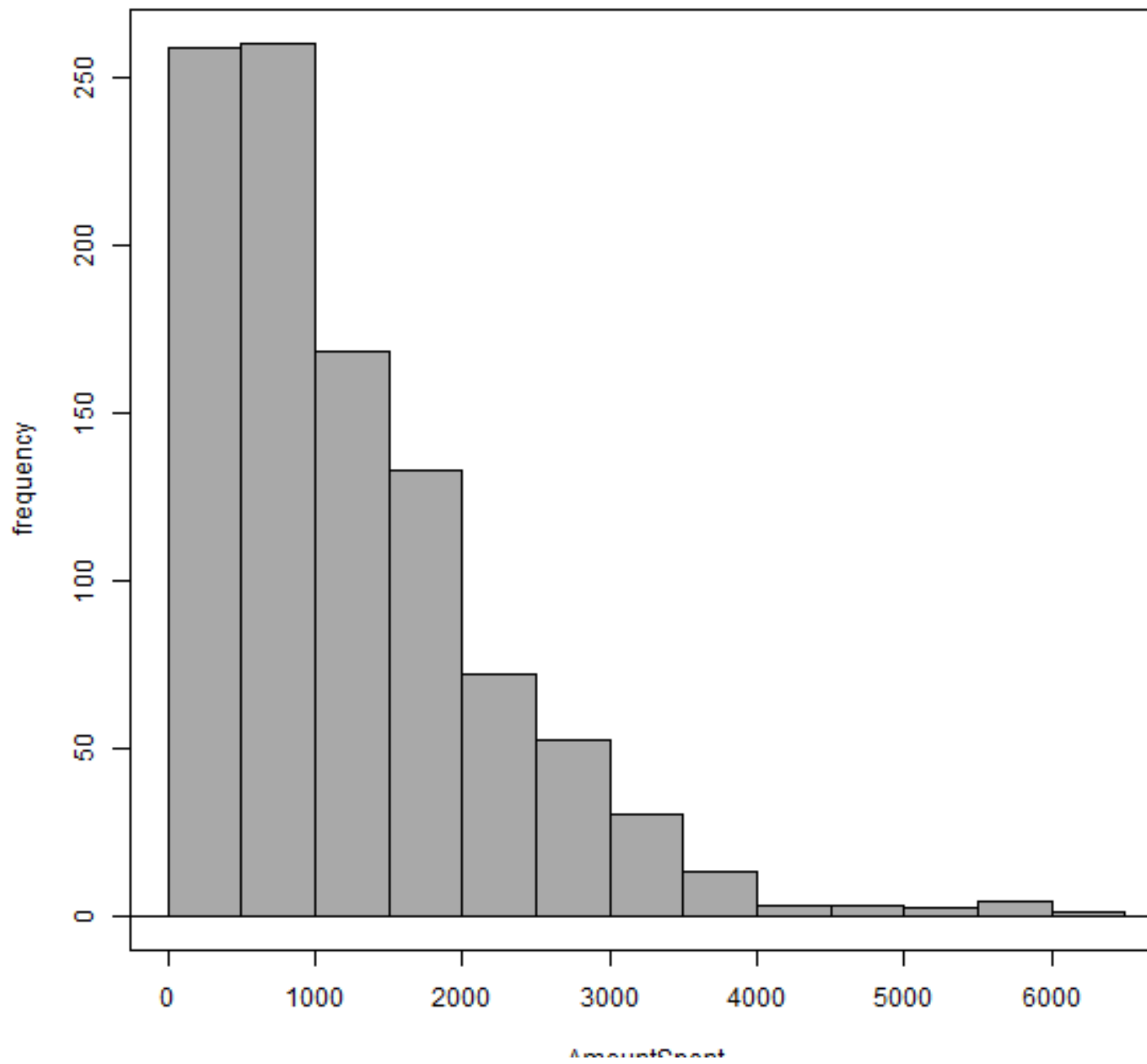
```
percentages:  
OwnHome  
  Own Rent  
  51.6  48.4
```

```
> with(Dataset, indexplot(AmountSpent, type='h', id.method='y', id.n=2,  
+   labels=rownames(Dataset)))
```

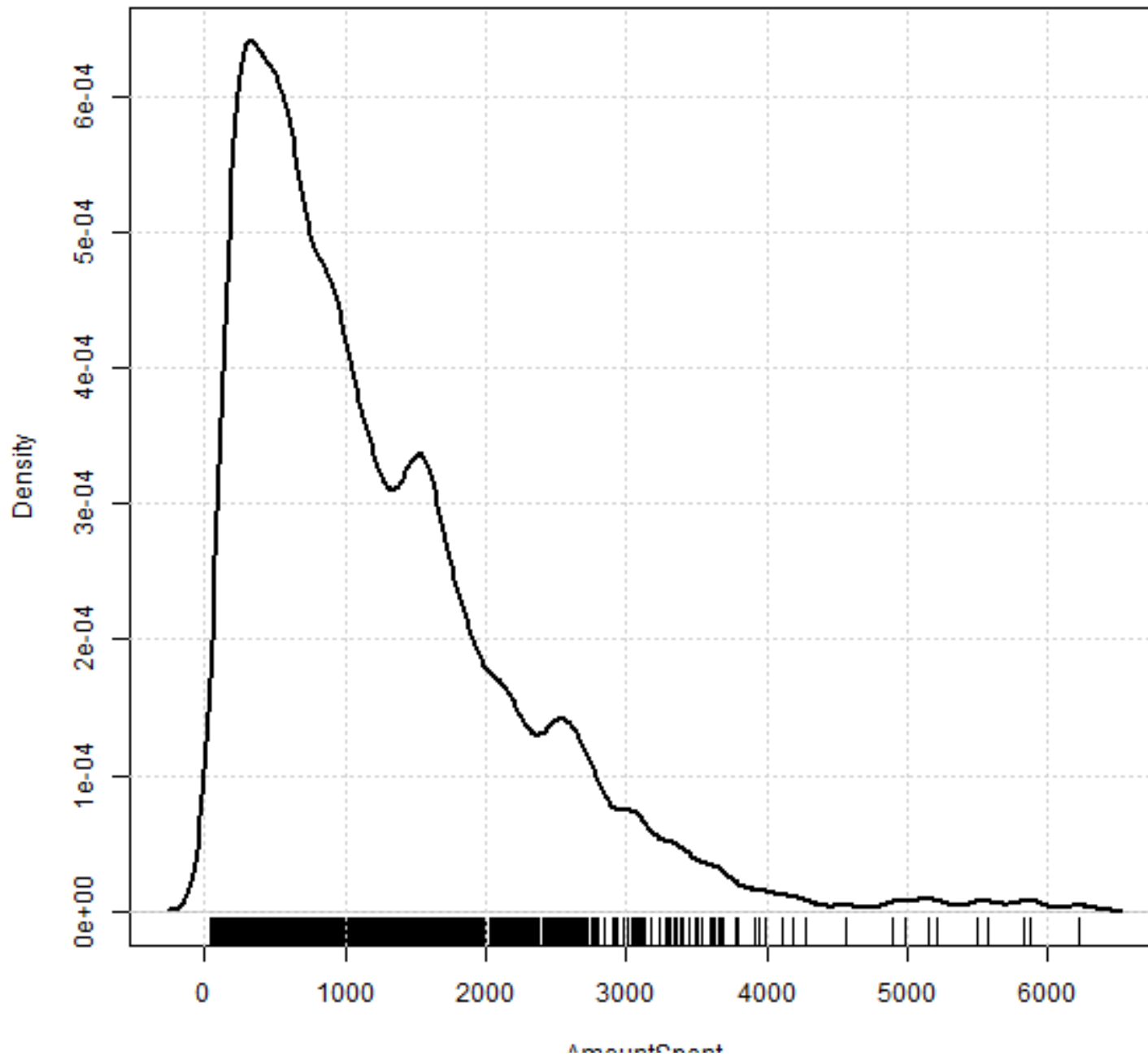



```
988 497  
988 497
```

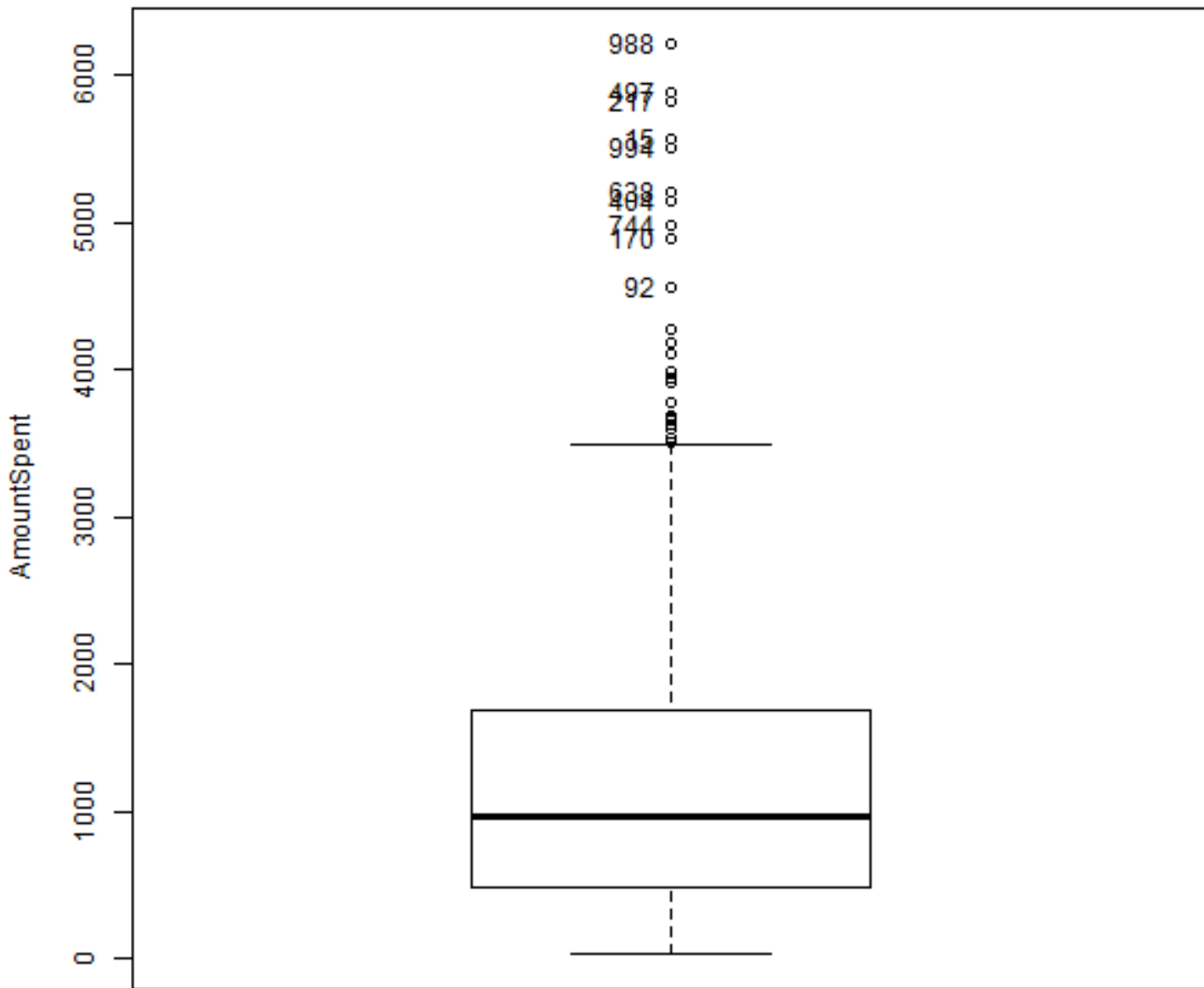
```
> with(Dataset, Hist(AmountSpent, scale="frequency", breaks="Sturges",  
+   col="darkgray"))
```



```
> densityPlot( ~ AmountSpent, data=Dataset, bw="SJ", adjust=1,  
+   kernel="gaussian")
```

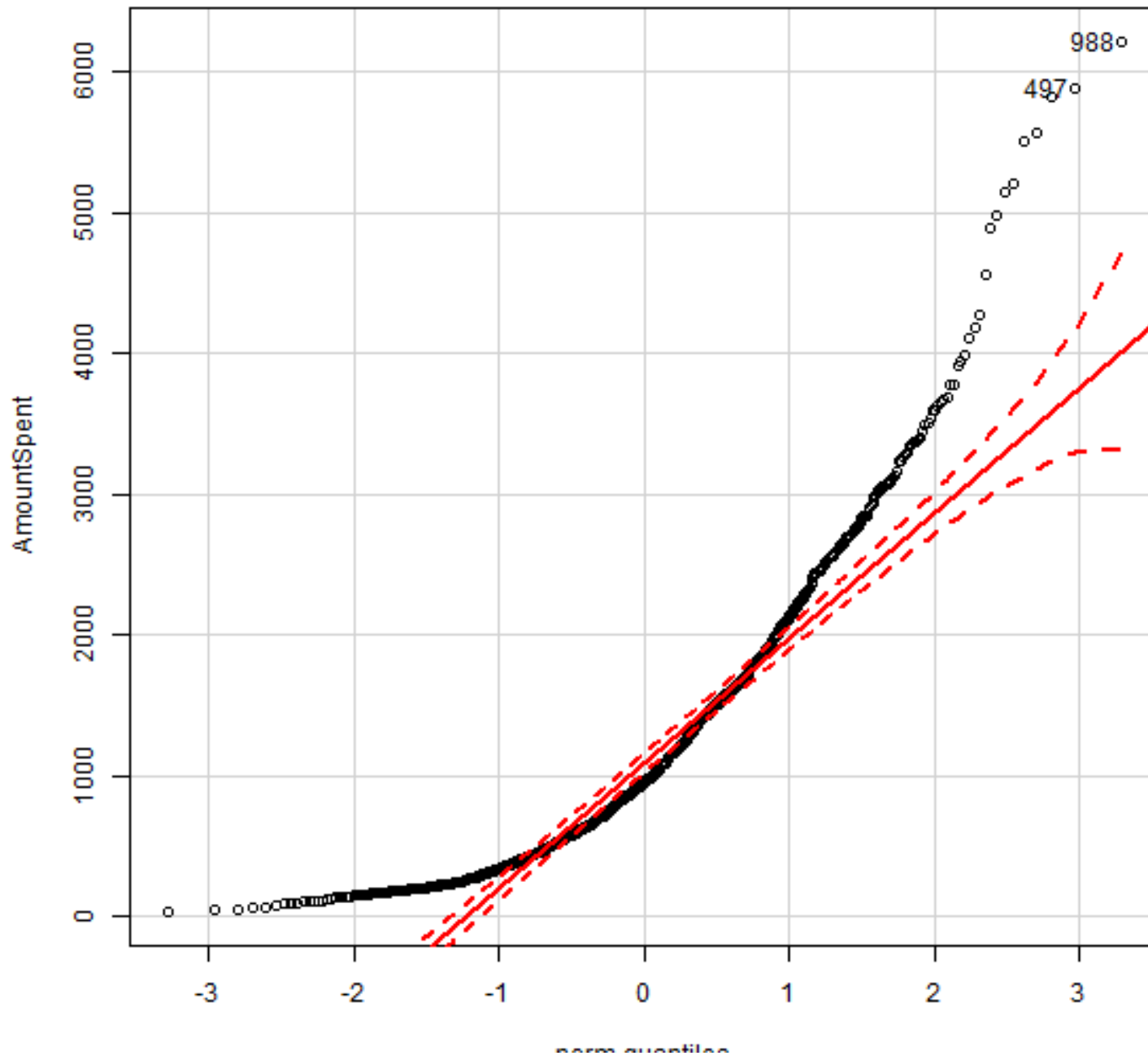



```
> Boxplot( ~ AmountSpent, data=Dataset, id.method="y")
```



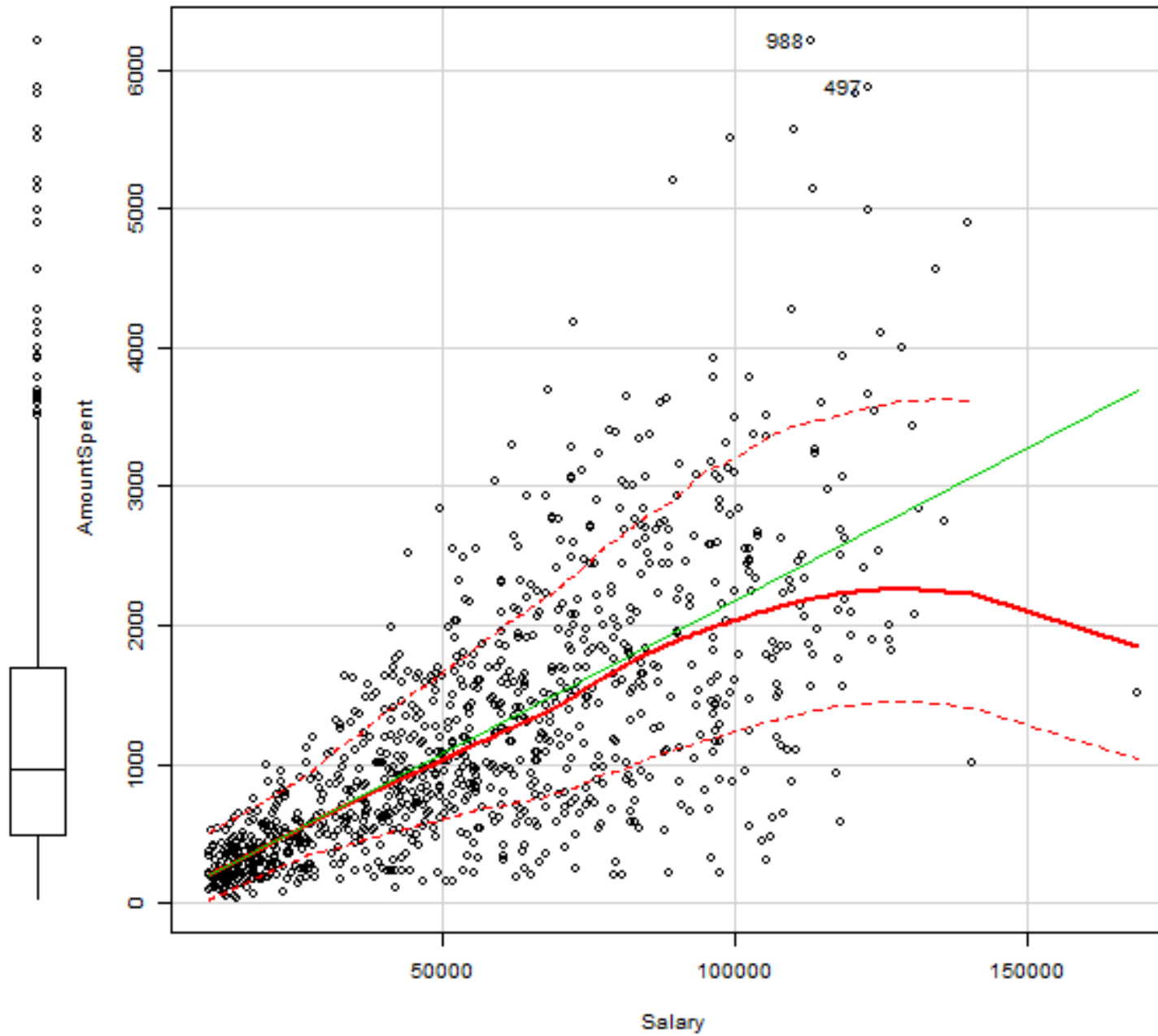
```
[1] "988" "497" "217" "15" "994" "638" "404" "744" "170" "92"
```

```
> with(Dataset, qqPlot(AmountSpent, dist="norm", id.method="y", id.n=2,  
+ labels=rownames(Dataset)))
```

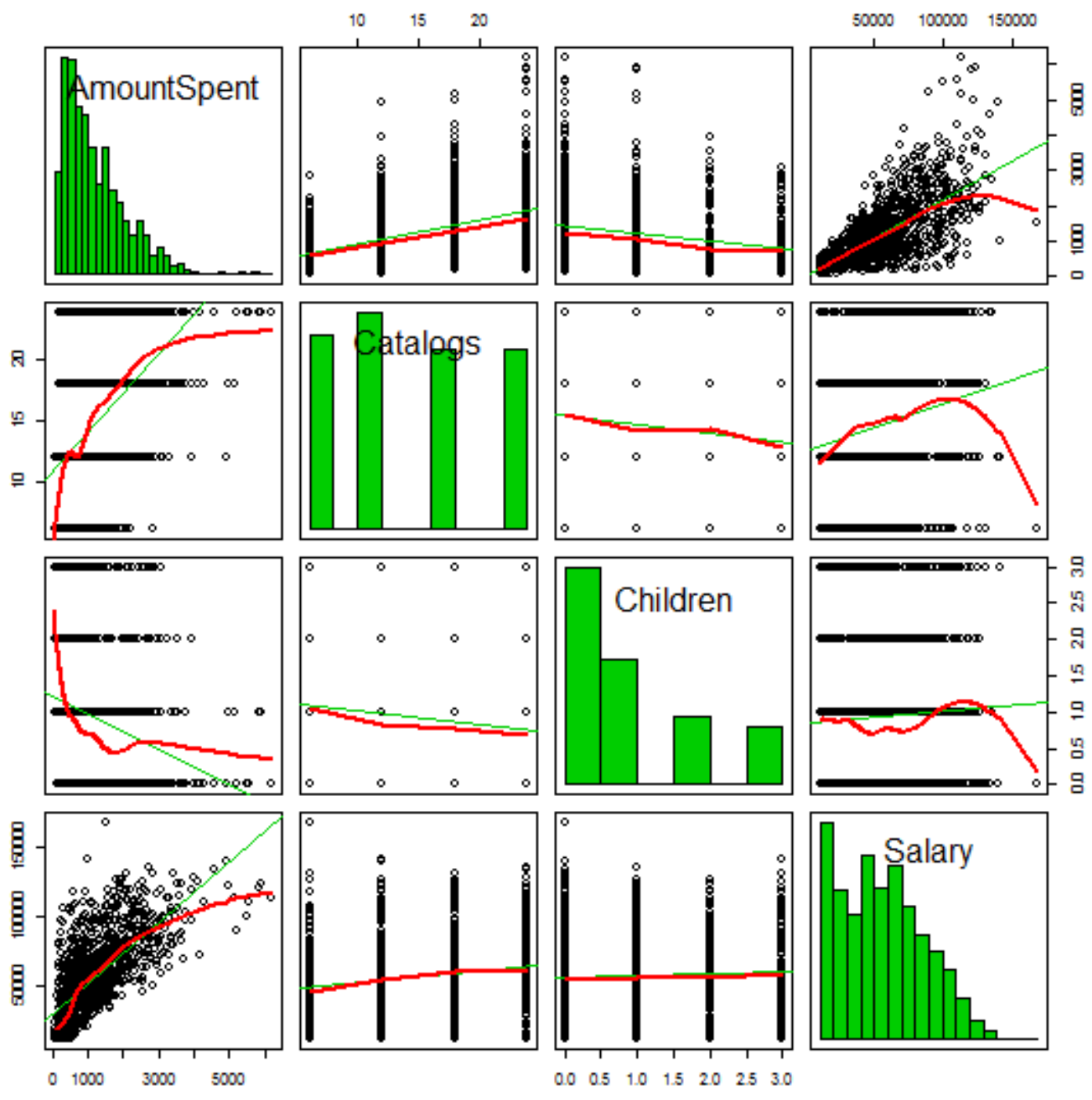
```
988 497  
1000 999
```

```
> scatterplot(AmountSpent~Salary, reg.line=lm, smooth=TRUE, spread=TRUE,  
+ id.method='mahal', id.n = 2, boxplots='xy', span=0.5, data=Dataset)
```

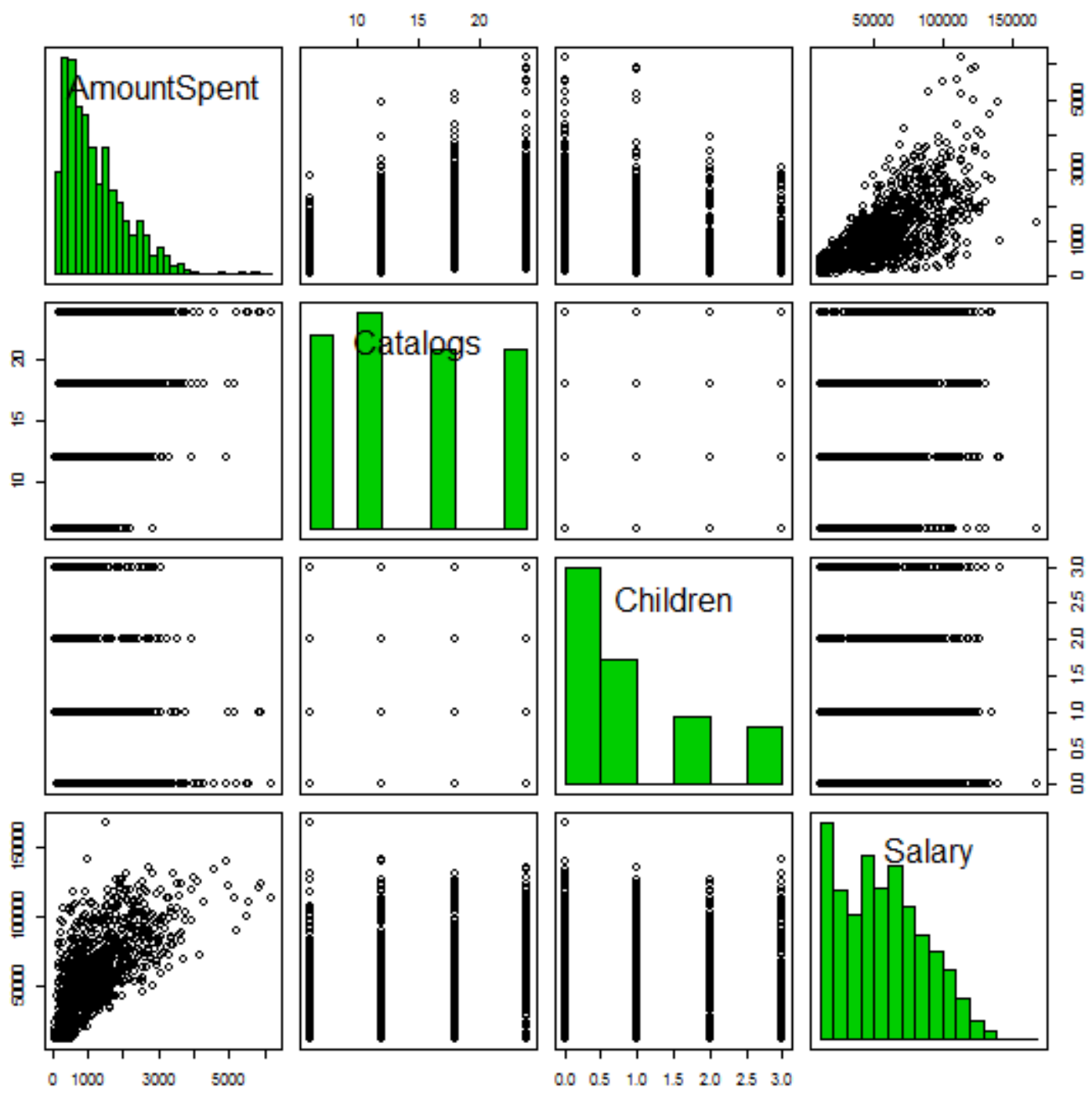


```
497 988  
497 988
```

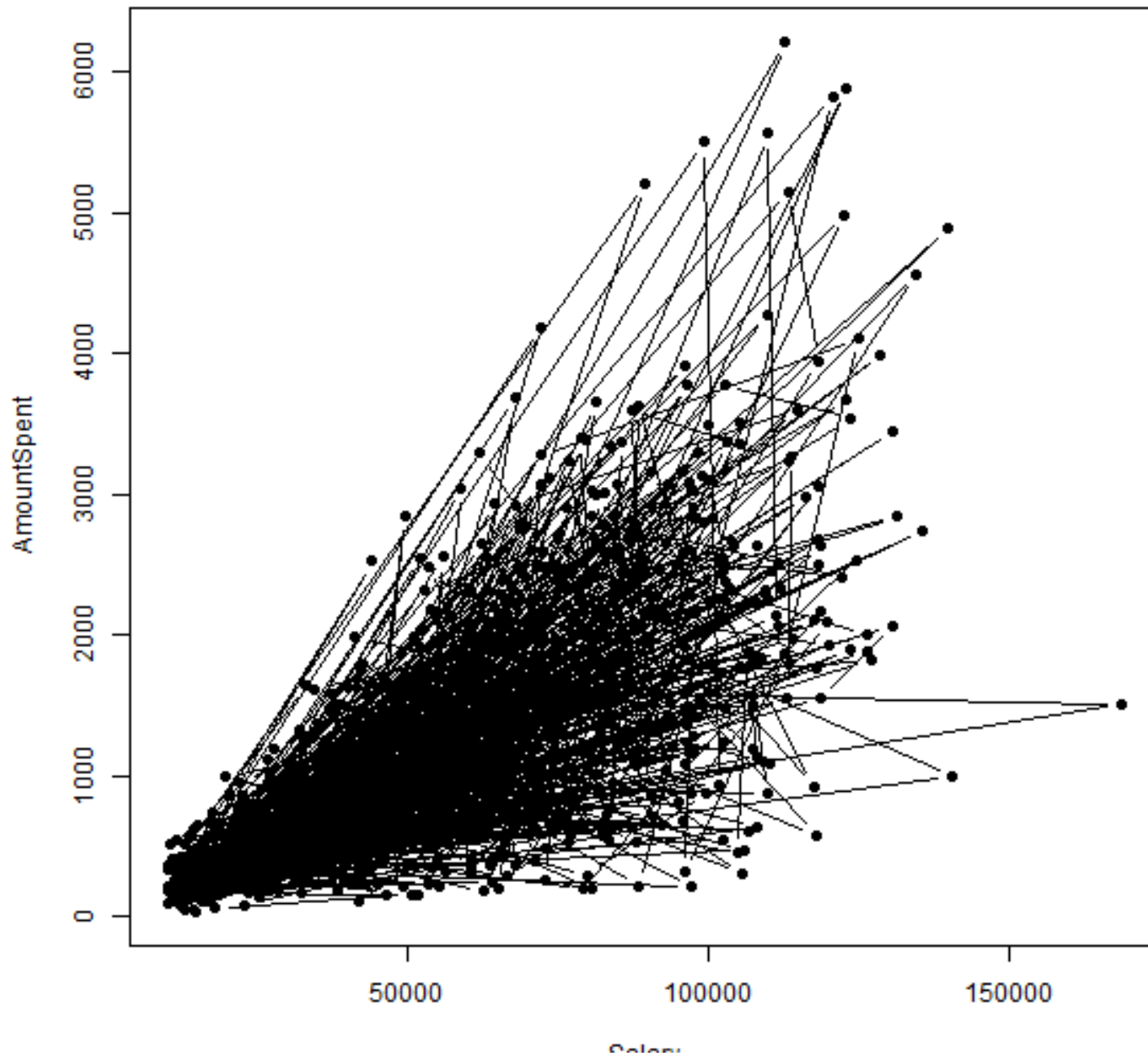
```
> scatterplotMatrix(~AmountSpent+Catalogs+Children+Salary, reg.line=lm,  
+ smooth=TRUE, spread=FALSE, span=0.5, id.n=0, diagonal = 'histogram',  
+ data=Dataset)
```



```
> scatterplotMatrix(~AmountSpent+Catalogs+Children+Salary, reg.line=FALSE,  
+ smooth=FALSE, spread=FALSE, span=0.5, id.n=0, diagonal = 'histogram',  
+ data=Dataset)
```

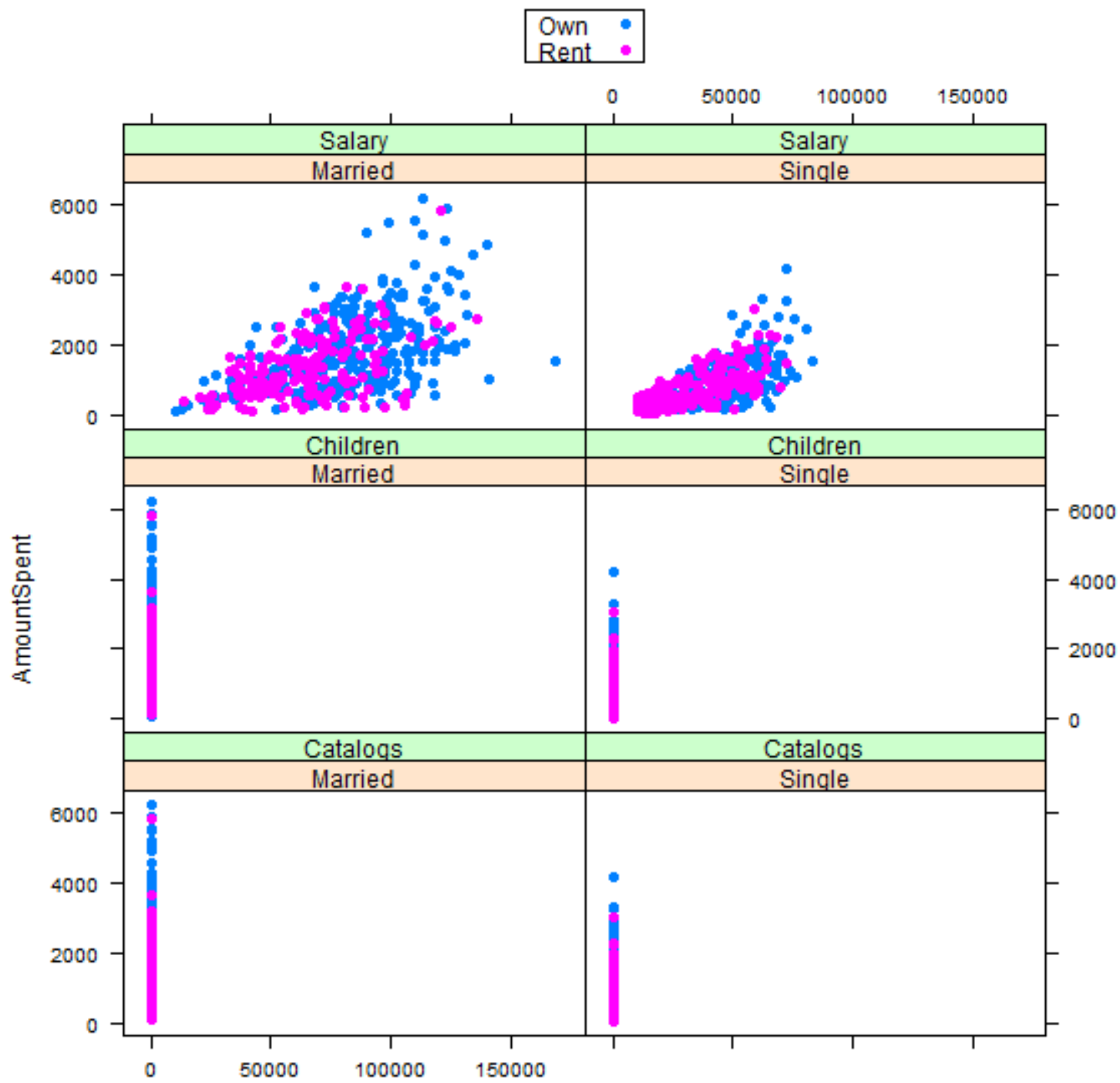


```
> with(Dataset, lineplot(Salary, AmountSpent))
```

```
> library(lattice, pos=19)
```

```
> xyplot(AmountSpent ~ Catalogs + Children + Salary | Married, groups=OwnHome,  
+ type="p", pch=16, auto.key=list(border=TRUE),  
+ par.settings=simpleTheme(pch=16), scales=list(x=list(relation='same'),  
+ y=list(relation='same')), data=Dataset)
```



```
> with(Dataset, plotMeans(AmountSpent, Married, OwnHome, error.bars="se"))
```

Plot of Means

