

Project-Hawks

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EDA

Hawks Data:

##	X	Month	Day	Year	CaptureTime	ReleaseTime	BandNumber	Species	Age	Sex
##	Wing									
## 1	1	9	19	1992	13:30		877-76317	RT	I	
385										
## 2	2	9	22	1992	10:30		877-76318	RT	I	
376										
## 3	3	9	23	1992	12:45		877-76319	RT	I	
381										
## 4	4	9	23	1992	10:50		745-49508	CH	I	F
265										
## 5	5	9	27	1992	11:15		1253-98801	SS	I	F
205										
## 6	6	9	28	1992	11:25		1207-55910	RT	I	
412										
##	Weight	Culmen	Hallux	Tail	StandardTail	Tarsus	WingPitFat	KeelFat	Crop	
## 1	920	25.7	30.1	219	NA	NA	NA	NA	NA	
## 2	930	NA	NA	221	NA	NA	NA	NA	NA	
## 3	990	26.7	31.3	235	NA	NA	NA	NA	NA	
## 4	470	18.7	23.5	220	NA	NA	NA	NA	NA	
## 5	170	12.5	14.3	157	NA	NA	NA	NA	NA	
## 6	1090	28.5	32.2	230	NA	NA	NA	NA	NA	

Summary of Hawks Data:

##	X	Month	Day	Year
##	Min. : 1.0	Min. : 8.000	Min. : 1.00	Min. :1992
##	1st Qu.:227.8	1st Qu.: 9.000	1st Qu.: 9.00	1st Qu.:1995
##	Median :454.5	Median :10.000	Median :16.00	Median :1999
##	Mean :454.5	Mean : 9.843	Mean :15.74	Mean :1998
##	3rd Qu.:681.2	3rd Qu.:10.000	3rd Qu.:23.00	3rd Qu.:2001
##	Max. :908.0	Max. :11.000	Max. :31.00	Max. :2003
##				
##	CaptureTime	ReleaseTime	BandNumber	Species
##	Length:908	Length:908	Length:908	Length:908
##	Class :character	Class :character	Class :character	Class :character
##	Mode :character	Mode :character	Mode :character	Mode :character
##				
##				

```
##
##
##      Age              Sex              Wing              Weight
## Length:908          Length:908          Min.   : 37.2      Min.   : 56.0
## Class :character    Class :character    1st Qu.:202.0      1st Qu.: 185.0
## Mode  :character    Mode  :character    Median :370.0      Median : 970.0
##                                     Mean  :315.6      Mean  : 772.1
##                                     3rd Qu.:390.0      3rd Qu.:1120.0
##                                     Max.   :480.0      Max.   :2030.0
##                                     NA's   :1         NA's   :10
##      Culmen          Hallux          Tail          StandardTail
## Min.   : 8.6        Min.   : 9.50      Min.   :119.0      Min.   :115.0
## 1st Qu.:12.8        1st Qu.: 15.10    1st Qu.:160.0      1st Qu.:162.0
## Median :25.5        Median : 29.40    Median :214.0      Median :215.0
## Mean   :21.8        Mean   : 26.41    Mean   :198.8      Mean   :199.2
## 3rd Qu.:27.3        3rd Qu.: 31.40    3rd Qu.:225.0      3rd Qu.:226.0
## Max.   :39.2        Max.   :341.40    Max.   :288.0      Max.   :335.0
## NA's   :7          NA's   :6         NA's   :337
##      Tarsus          WingPitFat          KeelFat          Crop
## Min.   :24.70      Min.   :0.0000    Min.   :0.000      Min.   :0.0000
## 1st Qu.:55.60      1st Qu.:0.0000    1st Qu.:2.000      1st Qu.:0.0000
## Median :79.30      Median :1.0000    Median :2.000      Median :0.0000
## Mean   :71.95      Mean   :0.7922    Mean   :2.184      Mean   :0.2345
## 3rd Qu.:87.00      3rd Qu.:1.0000    3rd Qu.:3.000      3rd Qu.:0.2500
## Max.   :94.00      Max.   :3.0000    Max.   :4.000      Max.   :5.0000
## NA's   :833        NA's   :831        NA's   :341        NA's   :343
```

Display nulls of Hawks Data:

```
## [1] FALSE
```

Display NA's of Hawks Data:

```
## [1] 0
## [1] 0
## [1] 0
## [1] 0
## [1] 6
```

Redisplay NA's of Hallux:

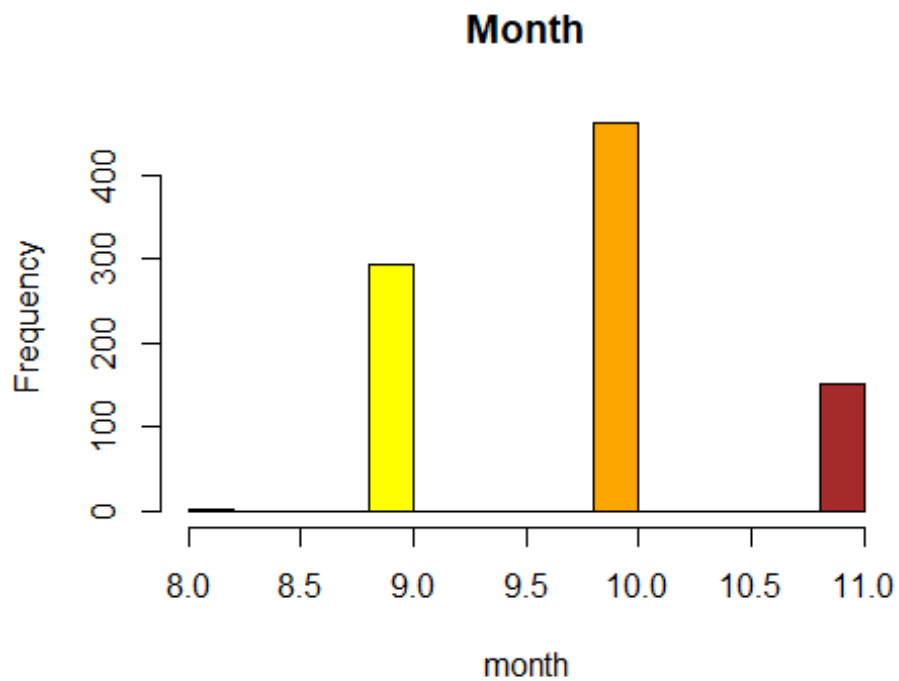
```
## [1] 0
```

Redisplay Hawks Data:

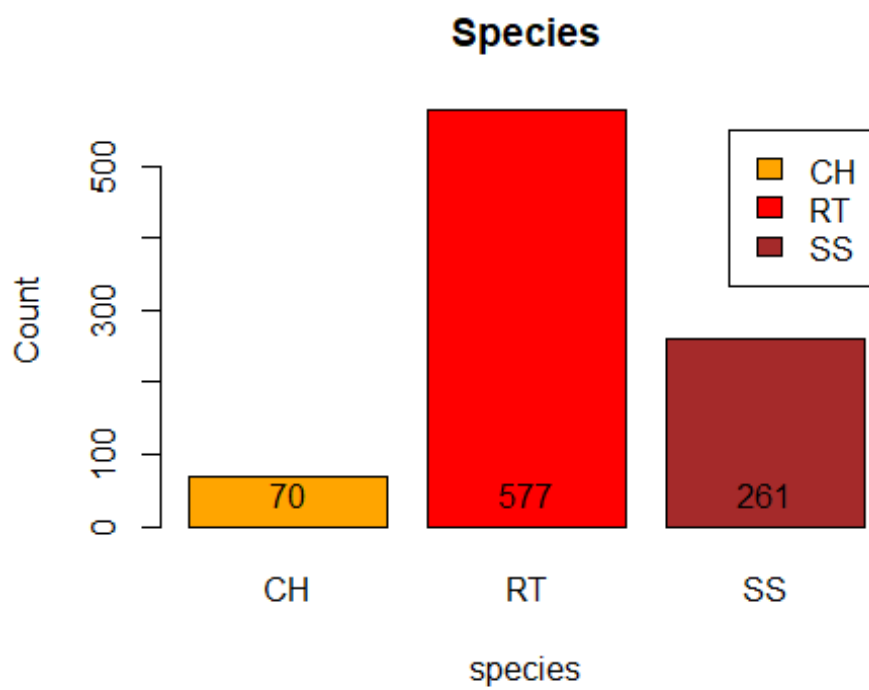
```
##      Month Year CaptureTime BandNumber Species Age Wing Weight Culmen
Hallux
## 1      9 1992      13:30    877-76317      RT  I  385   920   25.7
```

30.10000								
## 2	9	1992	10:30	877-76318	RT	I	376	930 NA
26.41086								
## 3	9	1992	12:45	877-76319	RT	I	381	990 26.7
31.30000								
## 4	9	1992	10:50	745-49508	CH	I	265	470 18.7
23.50000								
## 5	9	1992	11:15	1253-98801	SS	I	205	170 12.5
14.30000								
## 6	9	1992	11:25	1207-55910	RT	I	412	1090 28.5
32.20000								
##	Tail	StandardTail	Tarsus					
## 1	219	NA	NA					
## 2	221	NA	NA					
## 3	235	NA	NA					
## 4	220	NA	NA					
## 5	157	NA	NA					
## 6	230	NA	NA					

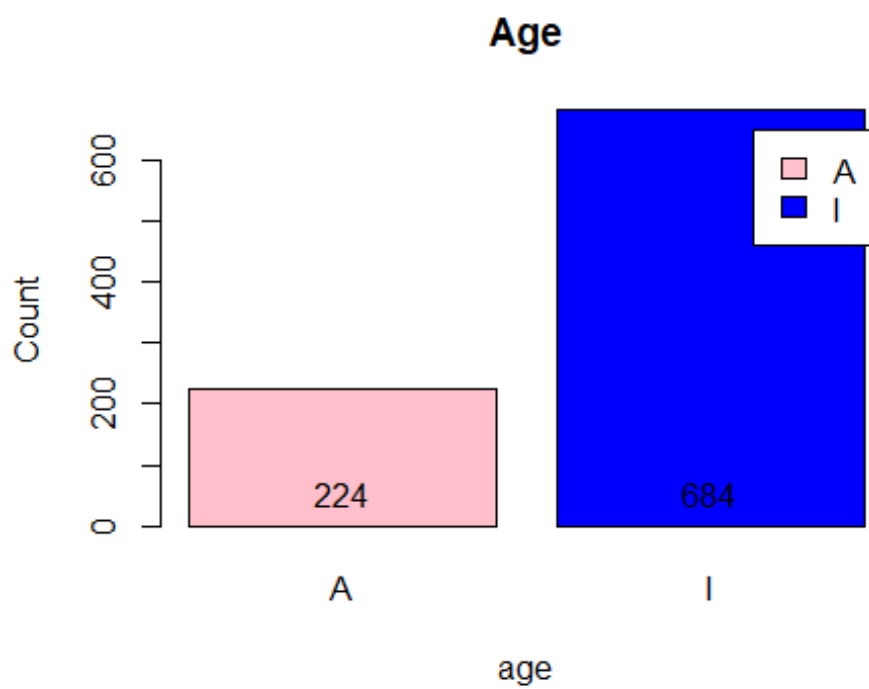
Project Month plot:



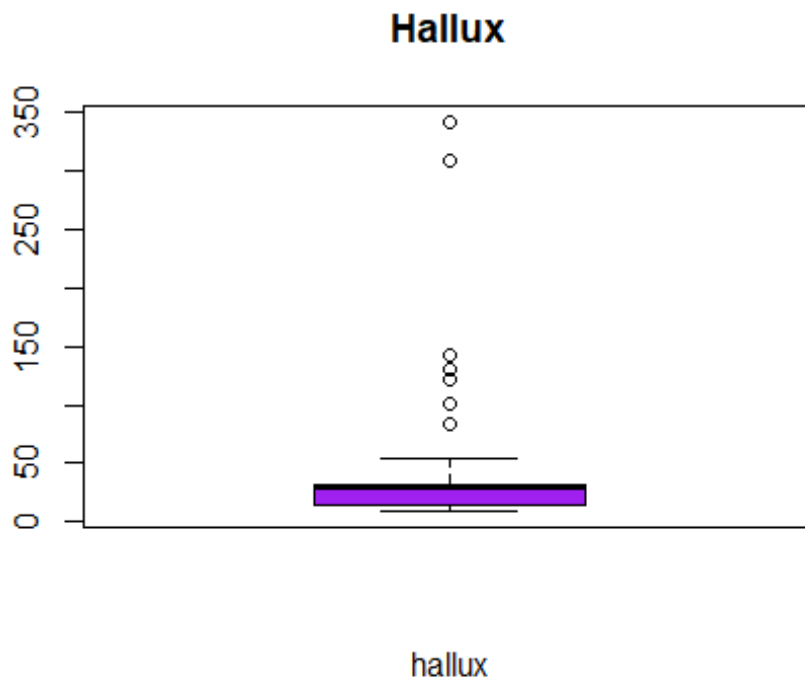
Project Species plot:



Project Age plot:



Project Hallux plot:



Cluster Model of the Species of Hawks for Age

Cross table of Species of Hawks vs Age:

Species	Adult	Immature	Total
Cooper's	32	38	70
Red-tailed	123	454	577
Sharp-shinned	69	192	261
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Total	224	684	908

Cluster Model of the Species of Hawks for Month

Exhibit Dissimilarity Matrix for Month:



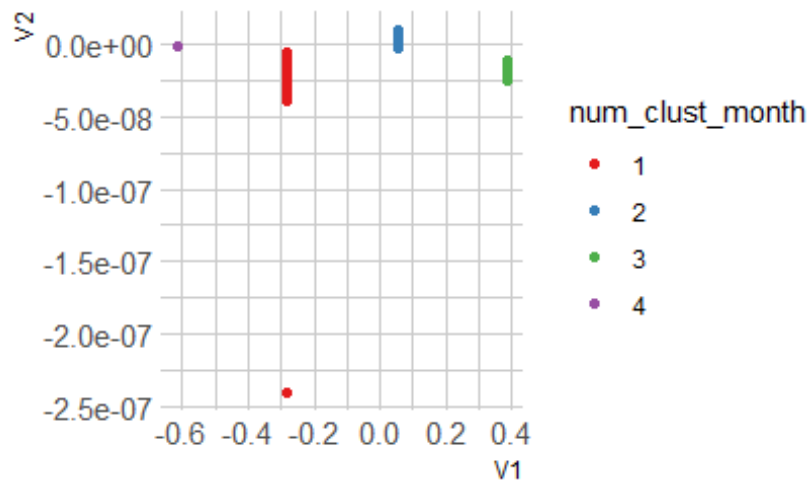
Display # of clusters for Month:

```
##
## Only frey, mcclain, cindex, sihouette and dunn can be computed. To
## compute the other indices, data matrix is needed
## Number_clusters      Value_Index
##                   4              1
```

Project MDS plot for Month:

MDS plot for Month

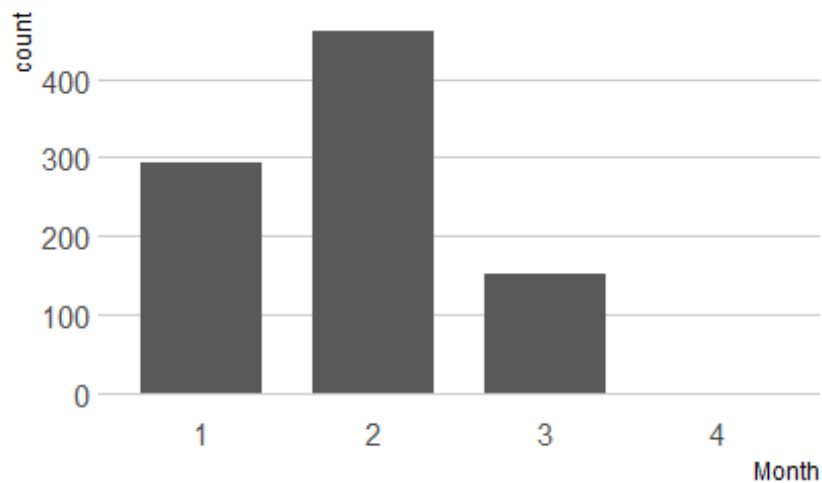
Colored by PAM cluster



Project Species & PAM Cluster for Month:

Species and PAM cluster

for Month



Cross table of Species of Hawks vs Month:

Species	August	September	October	November	Total
Cooper's	0	31	34	5	70
Red-tailed	1	150	314	112	577
Sharp-shinned	0	112	114	35	261
<hr/>					
Total	1	293	462	152	908

Cluster Model of the Species of Hawks for Hallux

Exhibit Dissimilarity Matrix for Hallux:



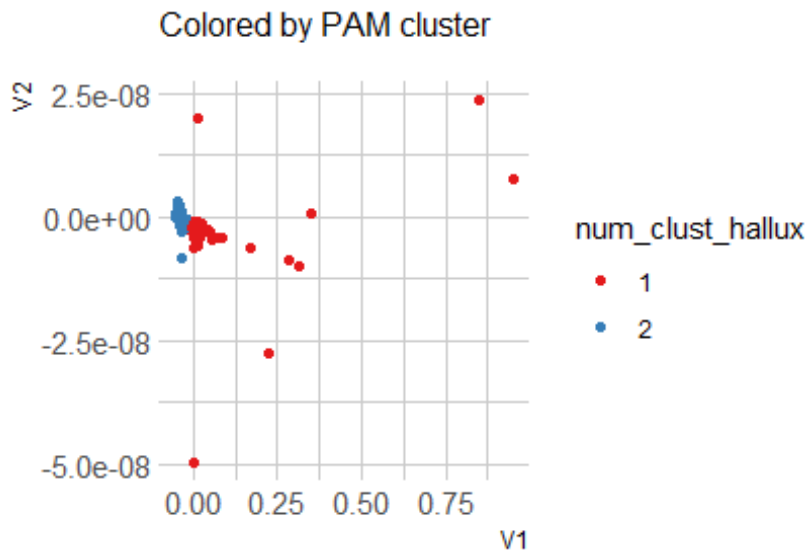
Display # of clusters for Hallux:

```
##
## Only frey, mcclain, cindex, sihouette and dunn can be computed. To
## compute the other indices, data matrix is needed

## Number_clusters      Value_Index
##           2.0000           0.9664
```

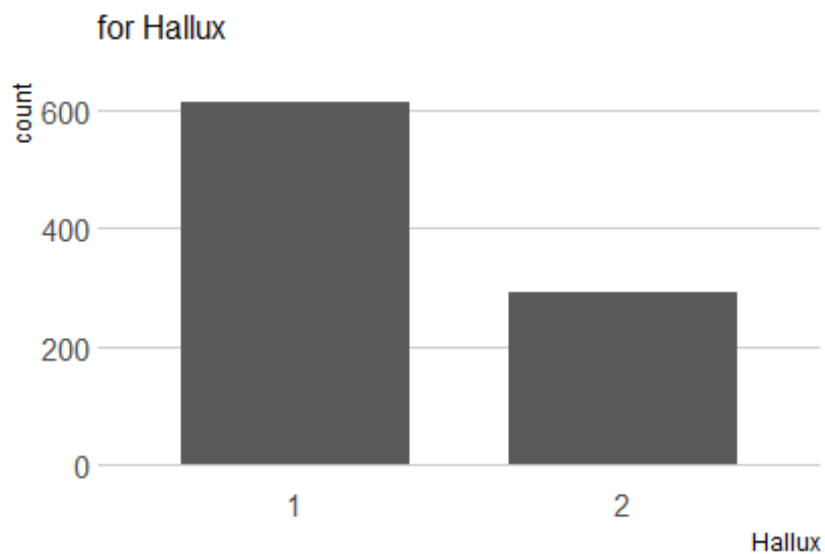
Project MDS plot for Hallux:

MDS plot for Hallux



Project Species & PAM Cluster for Hallux:

Species and PAM cluster



Cross table of Species of Hawks vs Hallux:

Species	Hallux Avg
Cooper's	22.82
Red-tailed	31.96
Sharp-shinned	15.10

Regression Model of the Capture Time vs the Age of Species of Hawks

