



2014  
~  
2016

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# 英國車禍情況分析

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# 資料取得&使用數據



## 天氣 Weather

- Fine no high winds
- Raining no high winds
- Snowing no high winds
- Fine + high winds
- Raining + high winds
- Snowing + high winds
  - Fog or mist
  - Other
  - Unknown
- Data missing or out of range

## 光照情況 Light Condition

- Daylight
- Darkness - lights lit
- Darkness - lights unlit
- Darkness - no lighting
- Darkness - lighting unknown
- Data missing or out of range

## 車禍嚴重程度 Accident Severity

- Fatal
- Serious
- Slight

## 路面情況 Road Surface

- Dry
- Wet or damp
- Snow
- Frost or ice
- Flood over 3cm. deep
- Oil or diesel
- Mud
- Data missing or out of range

## 星期 Day of week

- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

## 日期 Date

## 時間 Time

UK 2014-2016

- Road Safety Data-Accidents
- Lookup up tables for variables (data.gov.uk)



## 分析問題

01

天氣造成車禍情況

- 假設雨天車禍率高且嚴重

02

日期/節日發生車禍機率

- 假設節日放假會外出完車禍率高

03

星期幾/幾點車禍率較高

- 假設上下班時間車禍率高

04

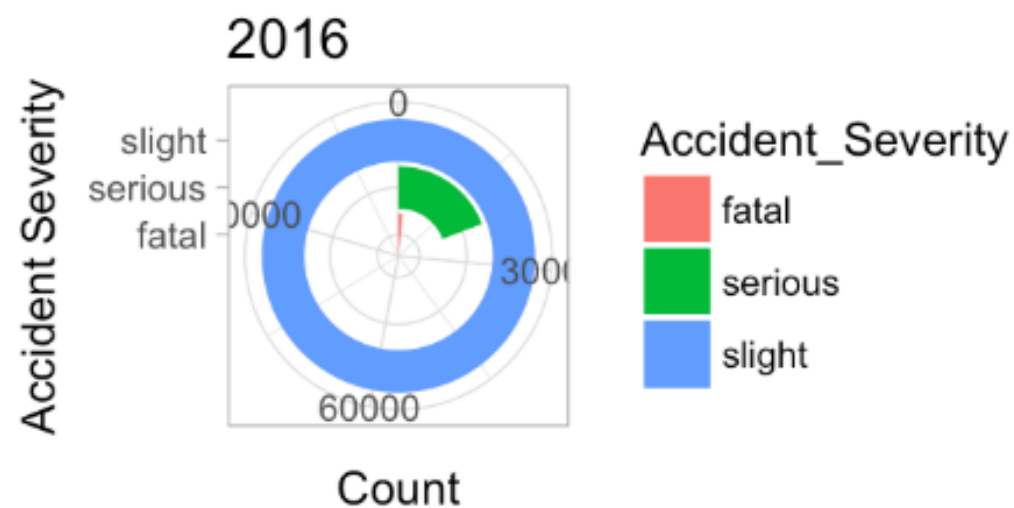
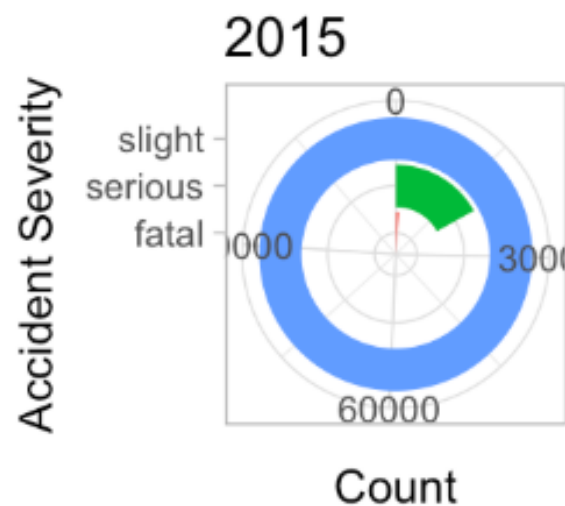
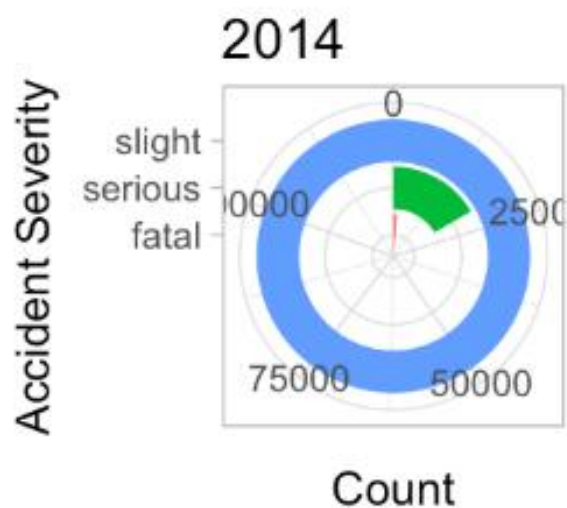
其他情況(天氣、路面情況、天色光線...)造成嚴重/死亡車禍

05

各因素在什麼情況下最有可能造成車禍



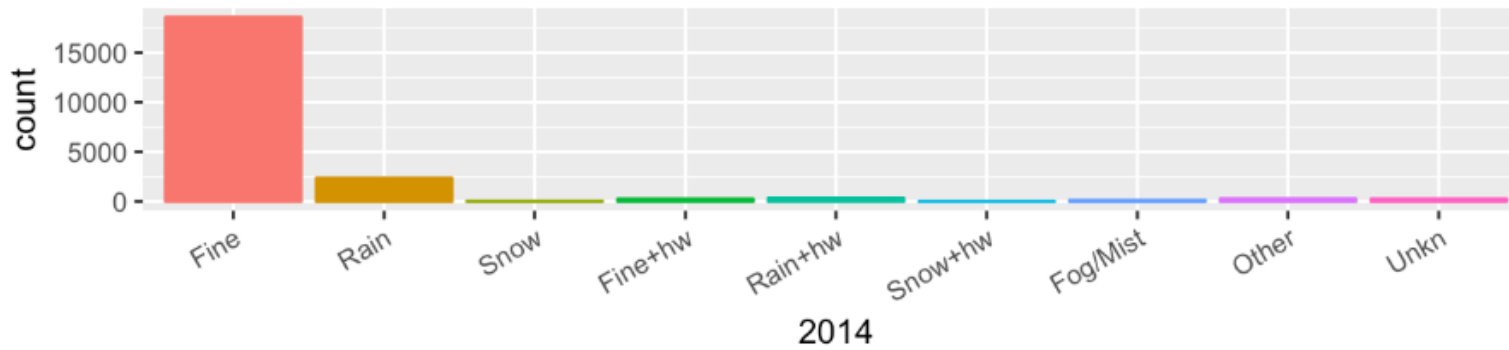
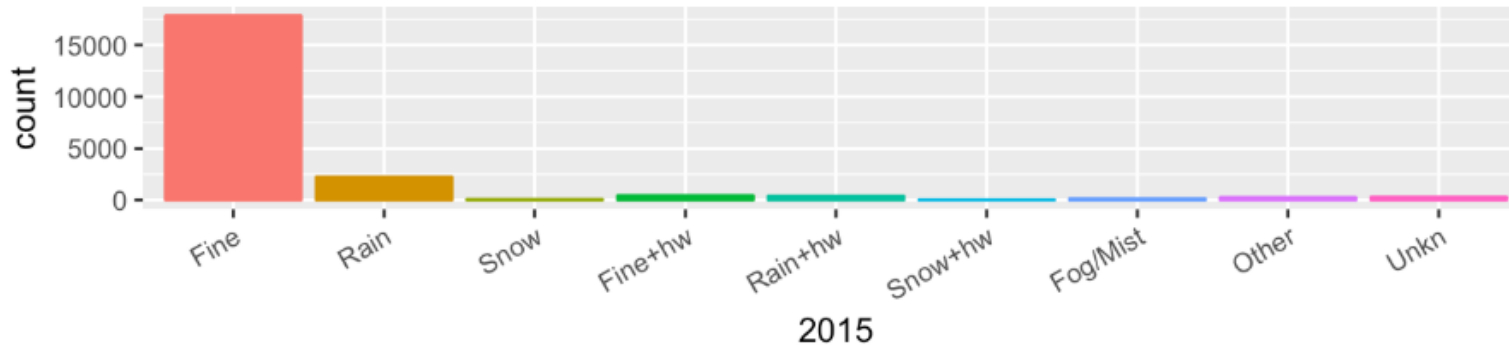
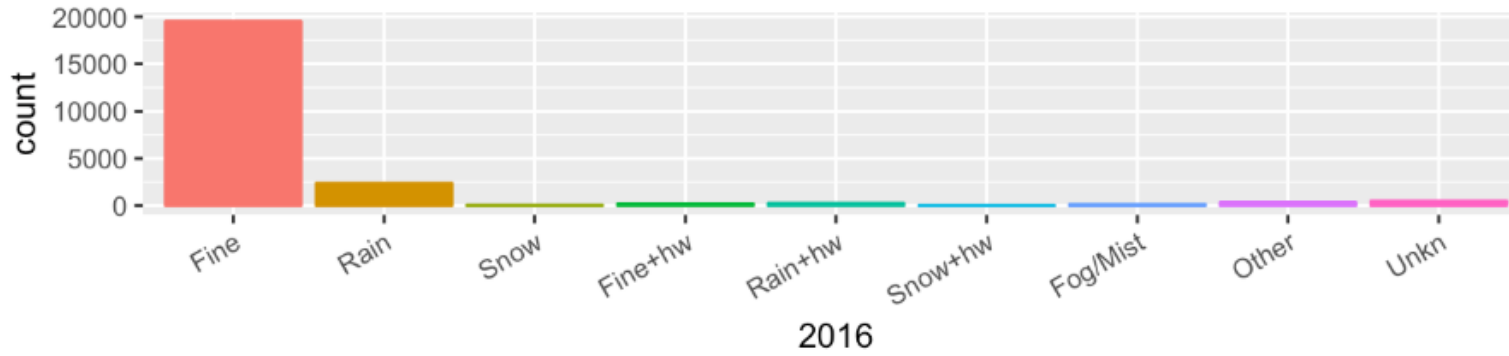
# Pie-chart for Accident Severity





# 天氣與嚴重/死亡車禍

## weather & fatal/serious severity





# 英國2014-2016公眾假期

## 2014

日期	星期	節日
1 January	Wednesday	New Year's Day
18 April	Friday	Good Friday
21 April	Monday	Easter Monday
5 May	Monday	Early May bank holiday
26 May	Monday	Spring bank holiday
25 August	Monday	Summer bank holiday
25 December	Thursday	Christmas Day
26 December	Friday	Boxing Day

## 2015

日期	星期	節日
1 January	Thursday	New Year's Day
3 April	Friday	Good Friday
6 April	Monday	Easter Monday
4 May	Monday	Early May bank holiday
25 May	Monday	Spring bank holiday
31 August	Monday	Summer bank holiday
25 December	Friday	Christmas Day
28 December	Monday	Boxing Day (substitute day)

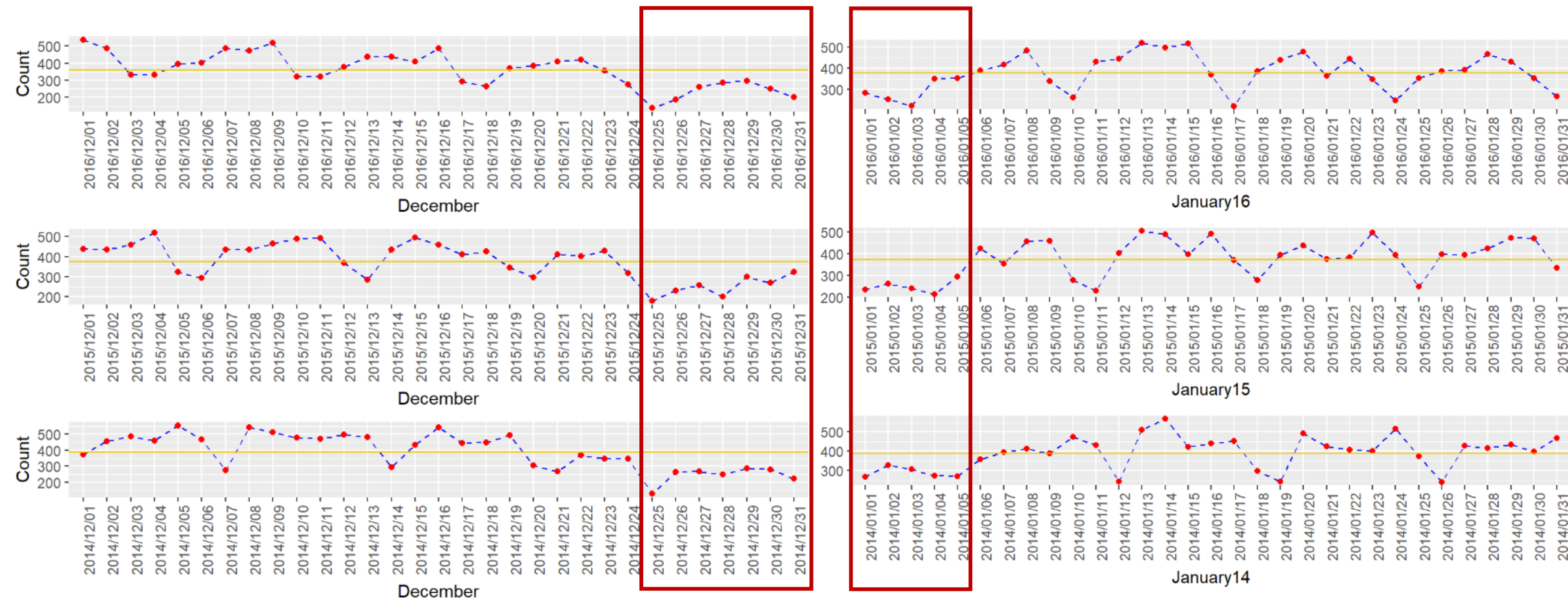
## 2016

日期	星期	節日
1 January	Friday	New Year's Day
25 March	Friday	Good Friday
28 March	Monday	Easter Monday
2 May	Monday	Early May bank holiday
30 May	Monday	Spring bank holiday
29 August	Monday	Summer bank holiday
26 December	Monday	Boxing Day
27 December	Tuesday	Christmas Day



# 車禍頻率-以月呈現

Christmas Day

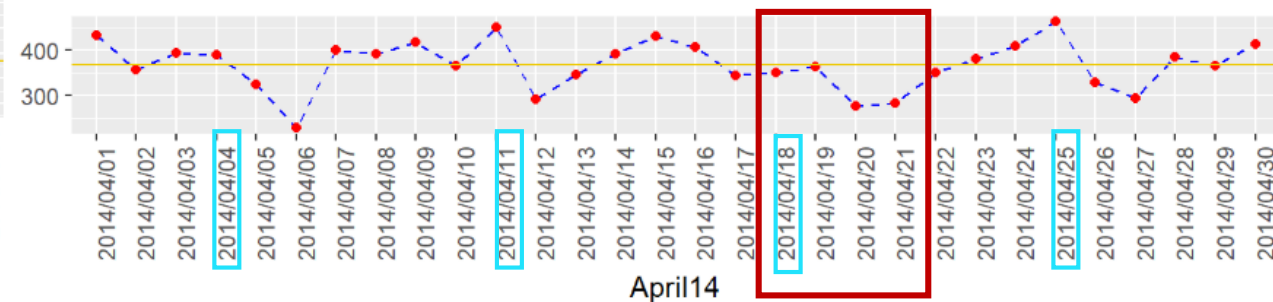
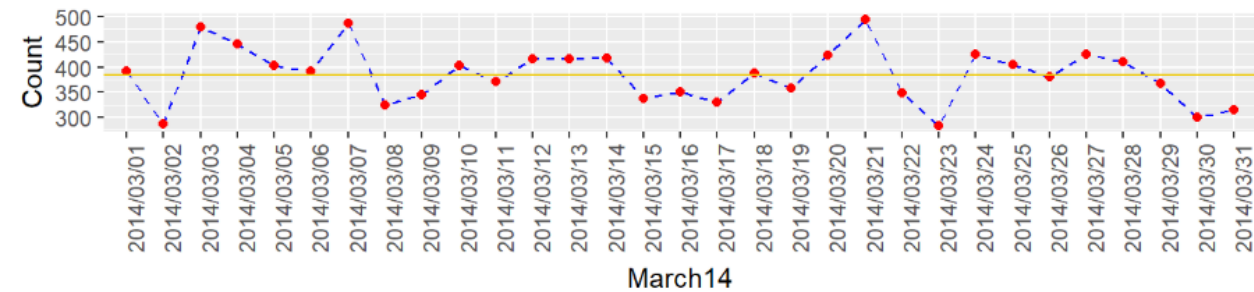
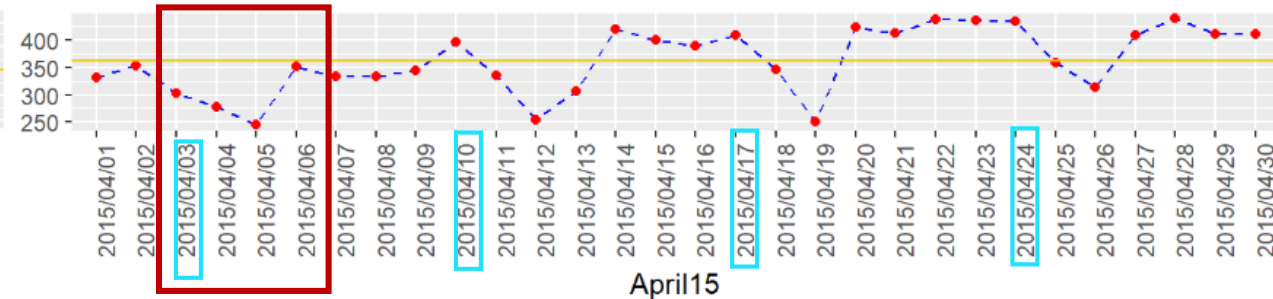
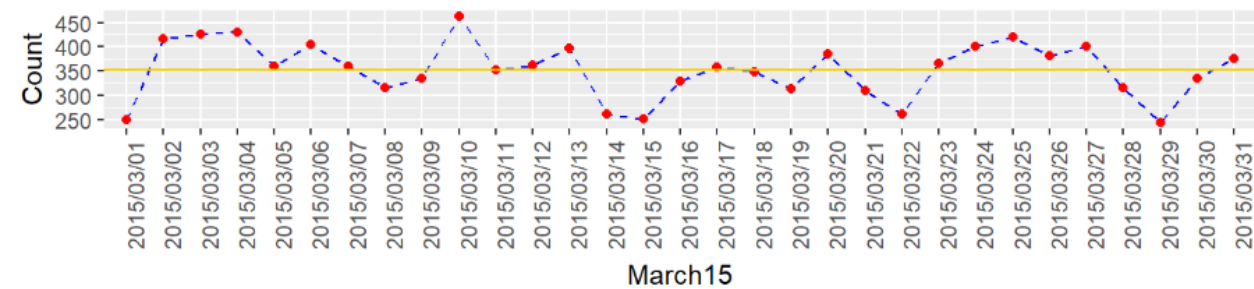
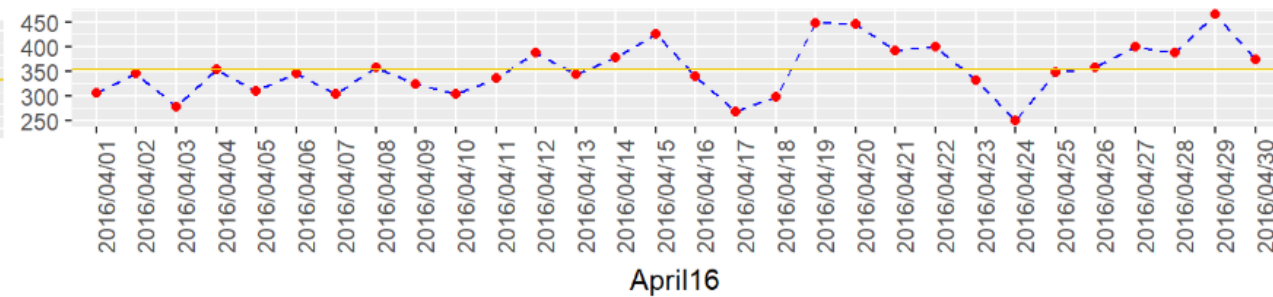
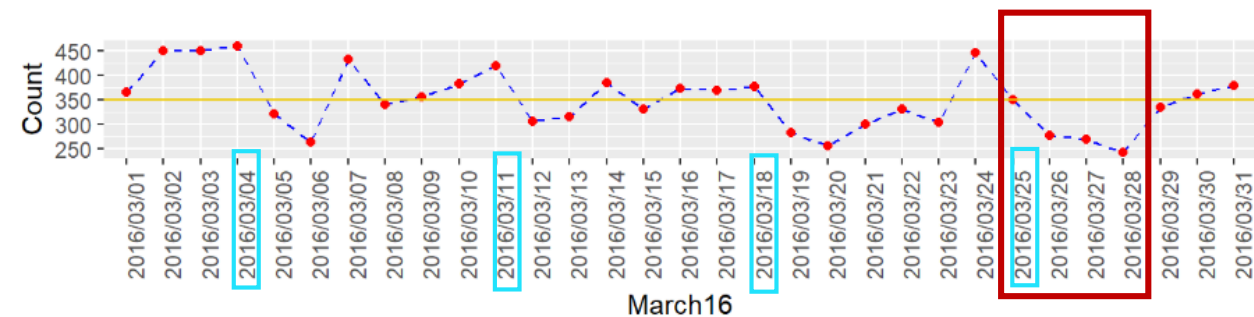






# 車禍頻率-以月呈現

Good Friday ~ Easter Monday

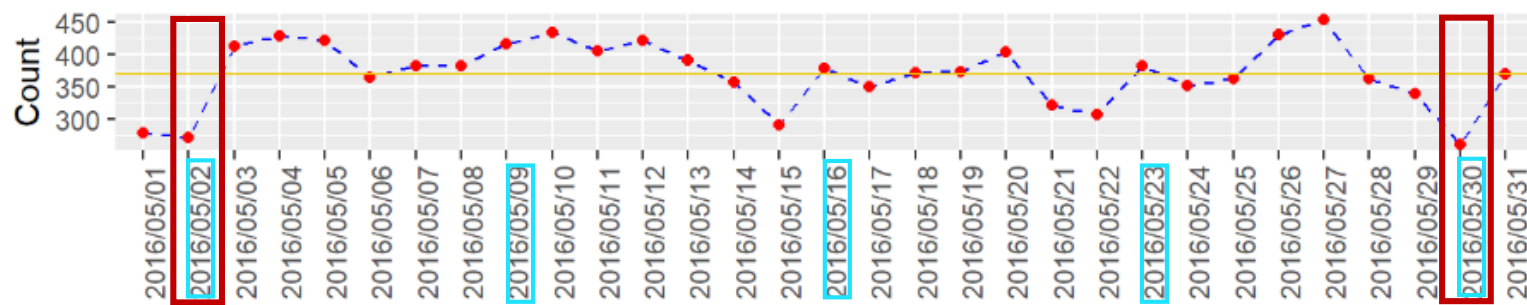




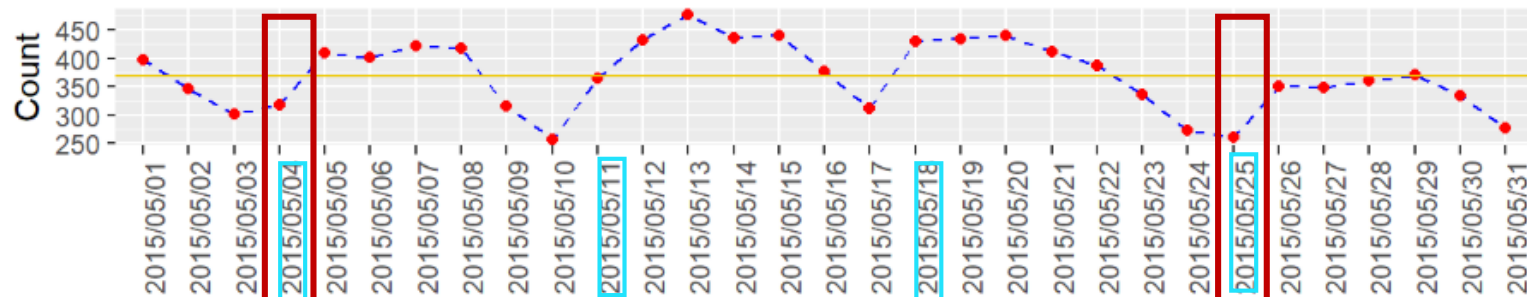


# 車禍頻率-以月呈現

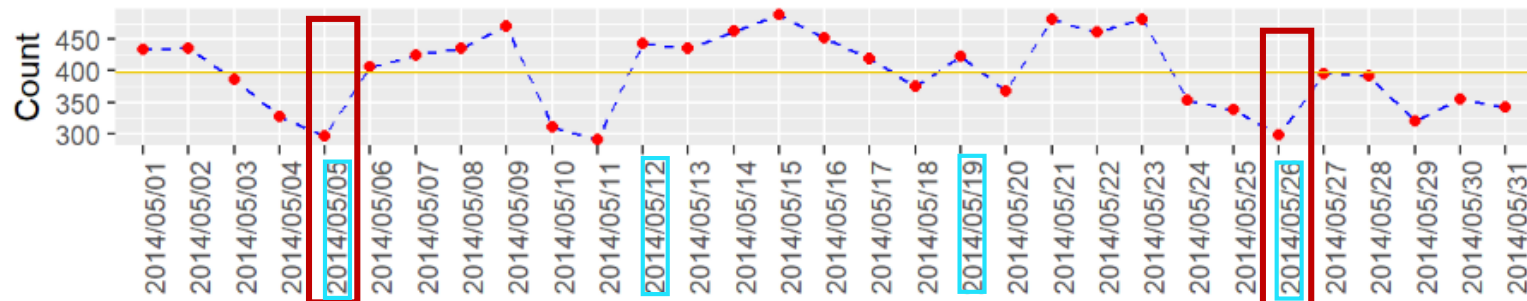
Early May、Spring Bank Holiday



May16



May15

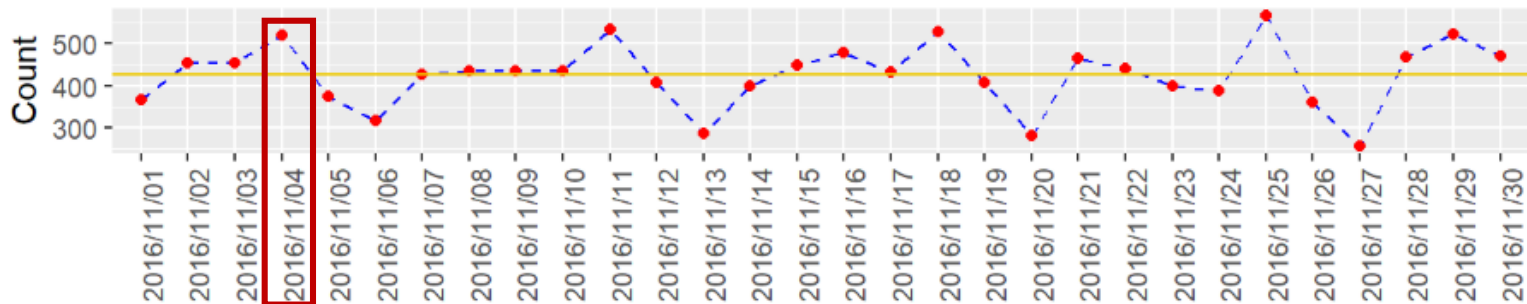


May14

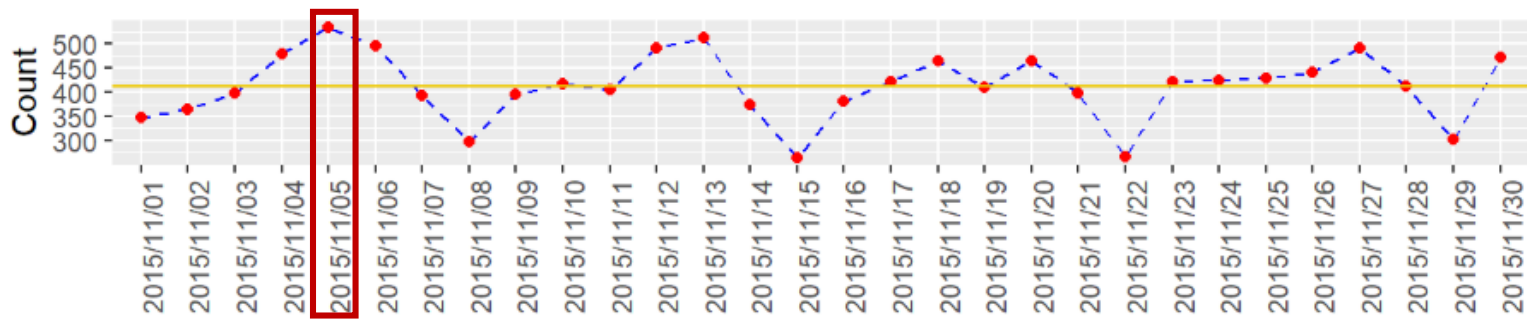


# 車禍頻率-以月呈現

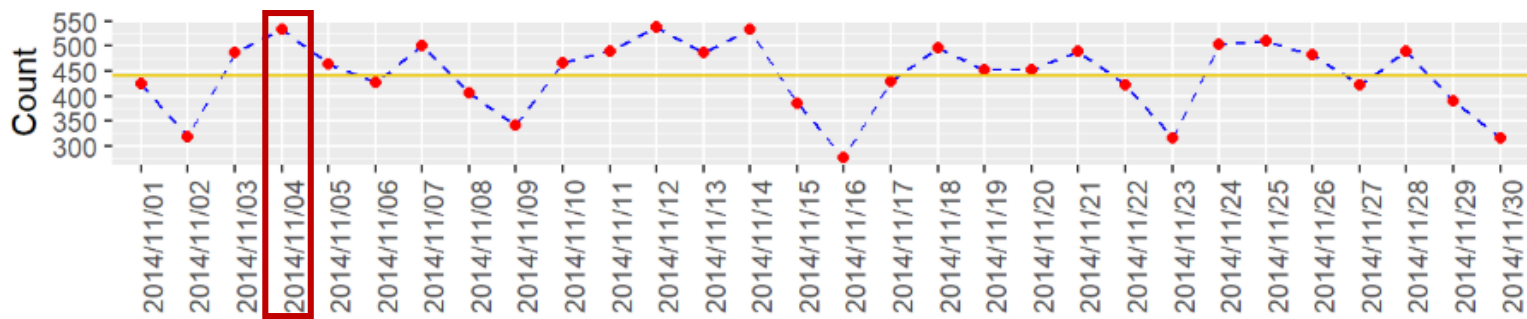
英國煙火節



November16



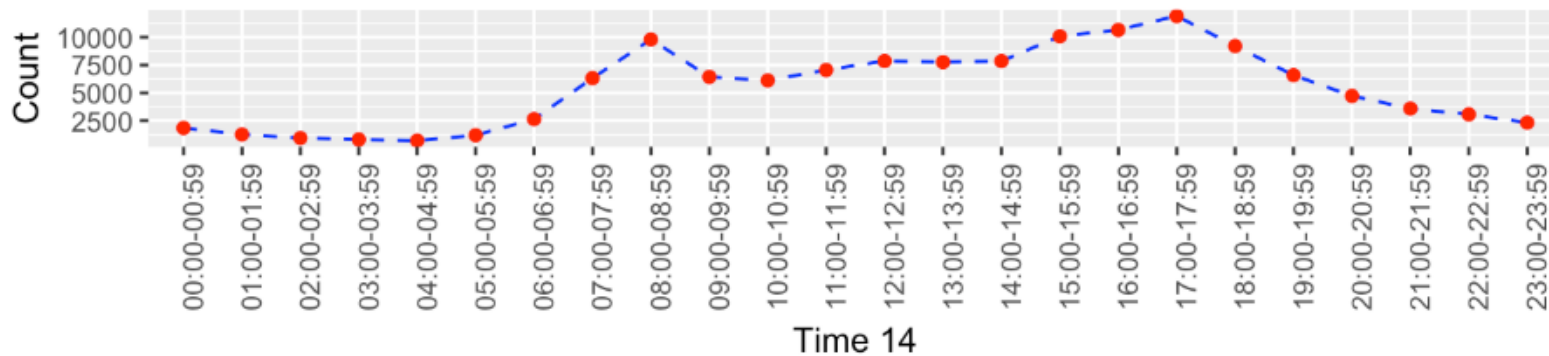
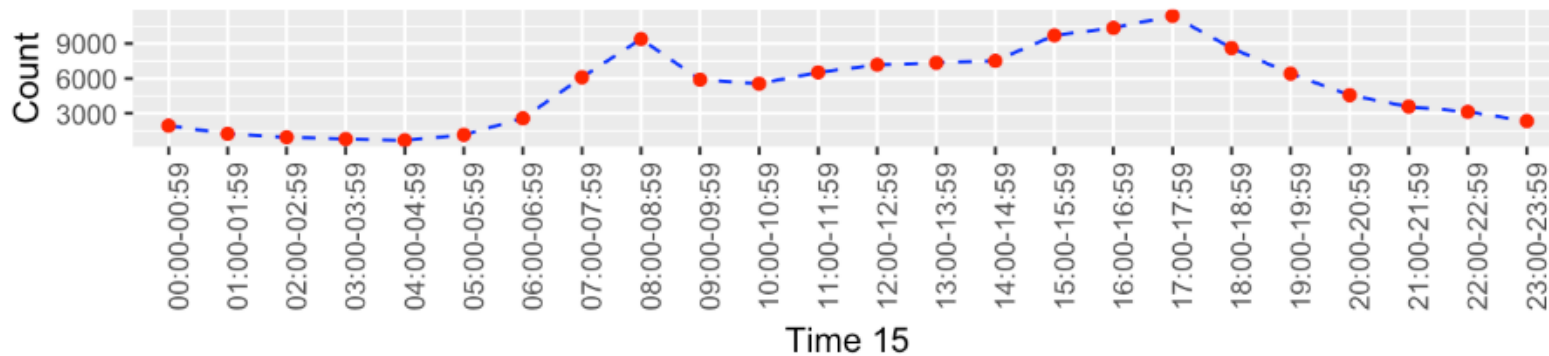
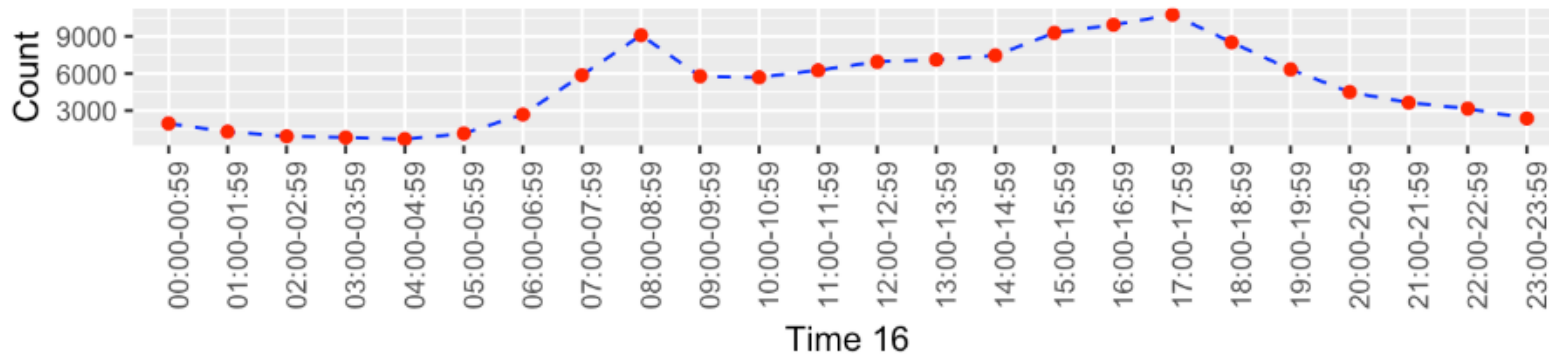
November15



November14

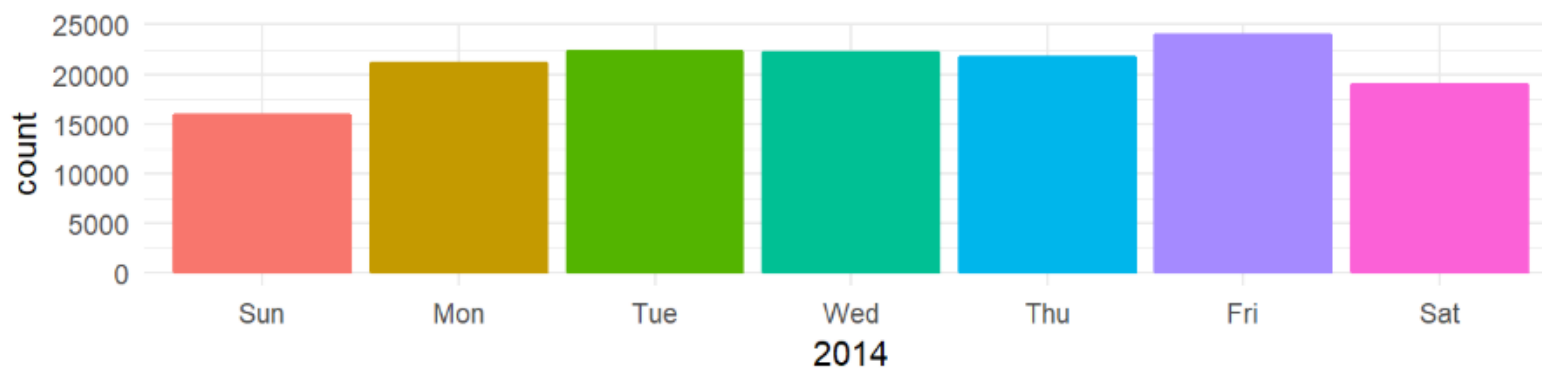
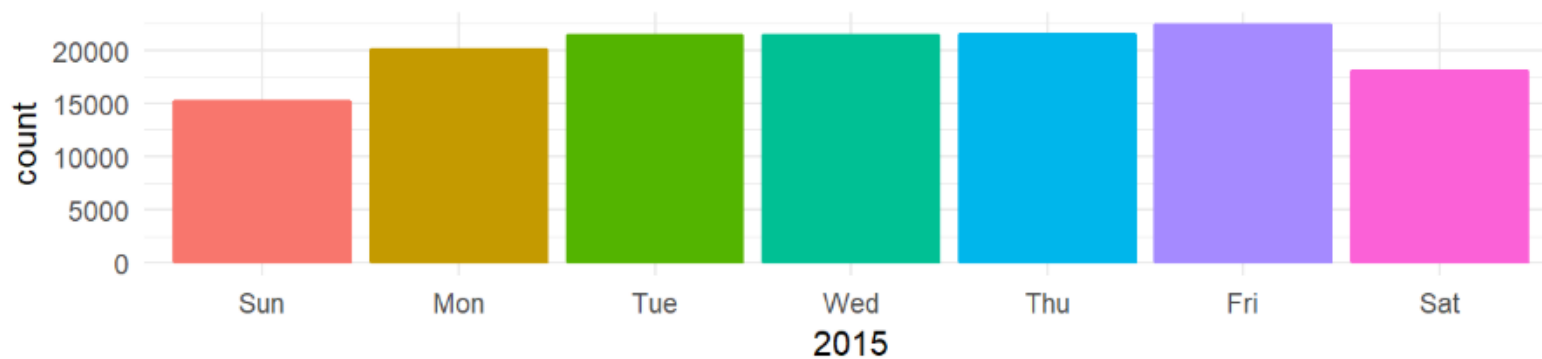
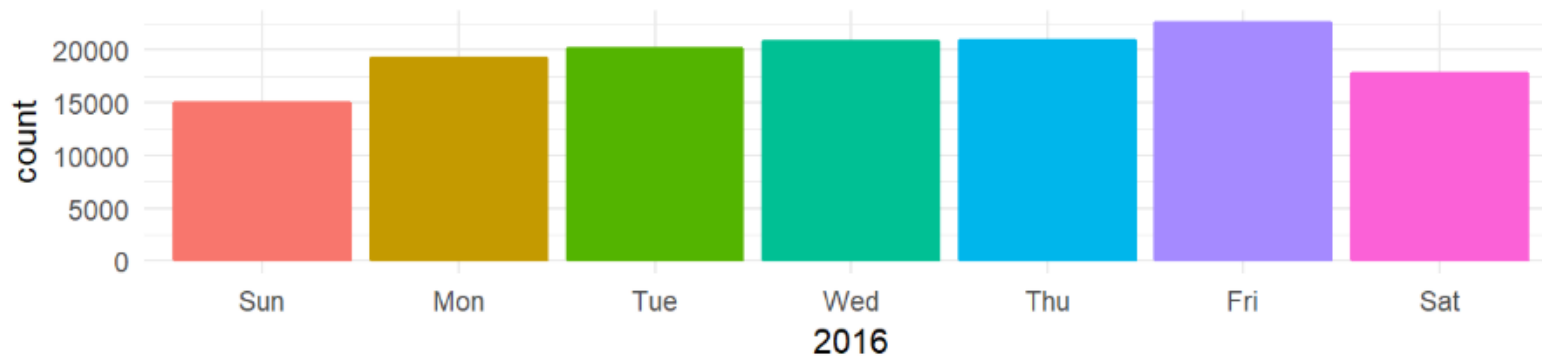


# 車禍頻率-以時間呈現





# 車禍頻率-以星期呈現

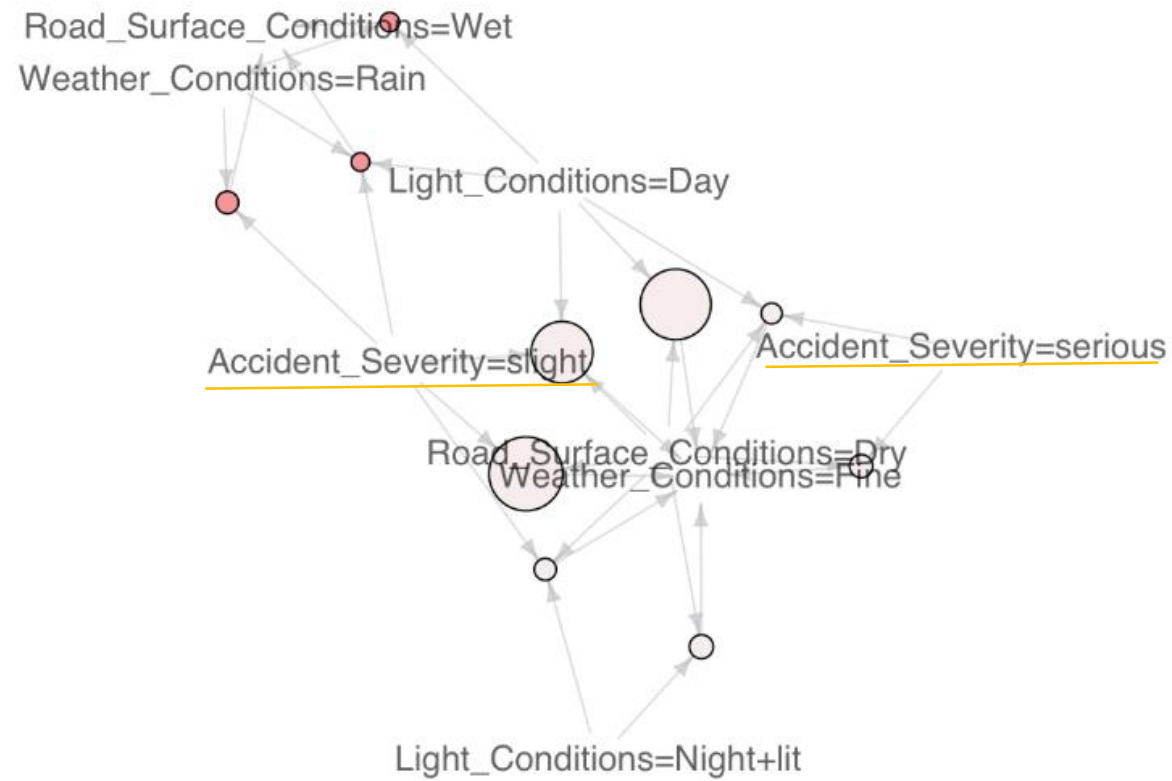




# Apriori for All

## Graph for 10 rules

size: support (0.057 - 0.578)  
color: lift (1.171 - 3.693)

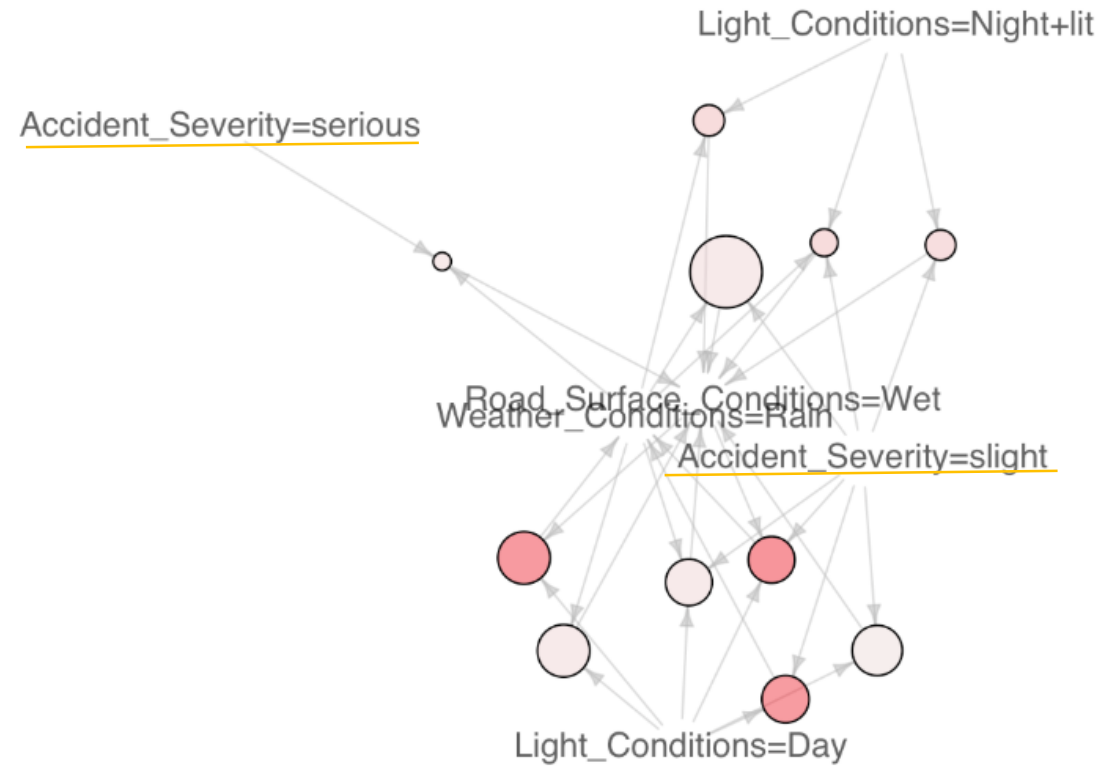




# Apriori for Rain

## Graph for 11 rules

size: support (0.119 - 0.742)  
color: lift (1.001 - 1.032)



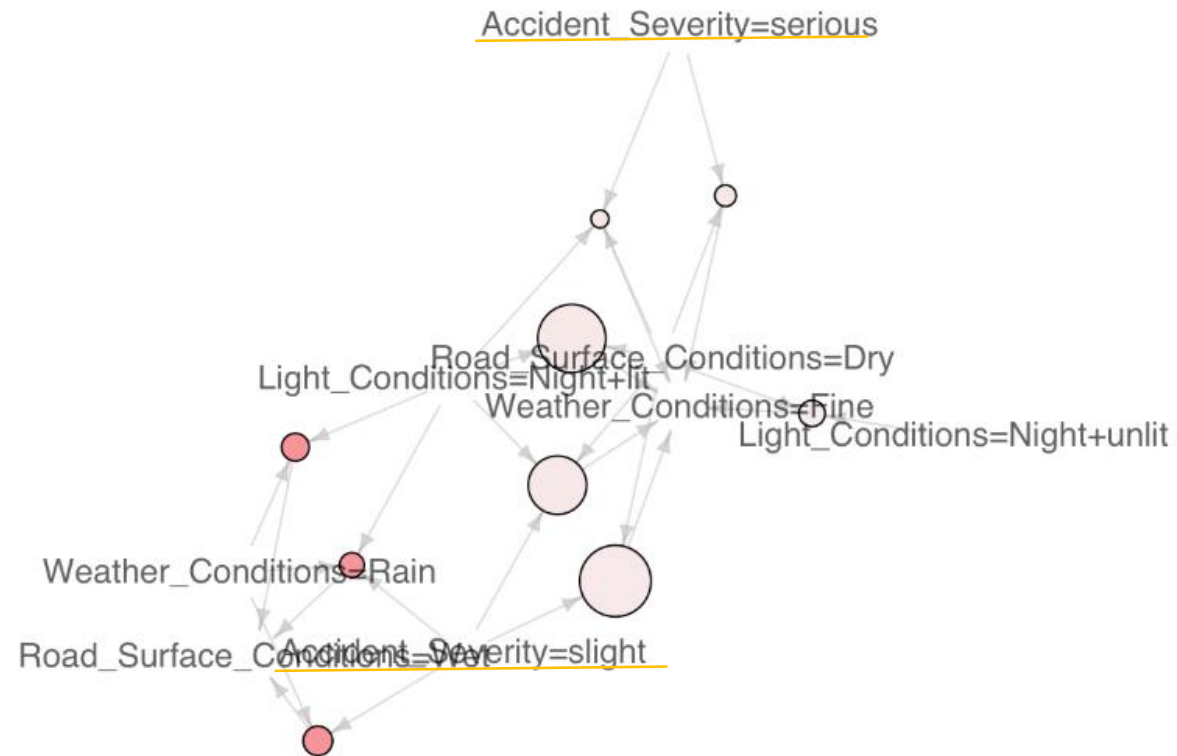




# Apriori for Night

Graph for 9 rules

size: support (0.061 - 0.427)  
color: lift (1.259 - 2.372)



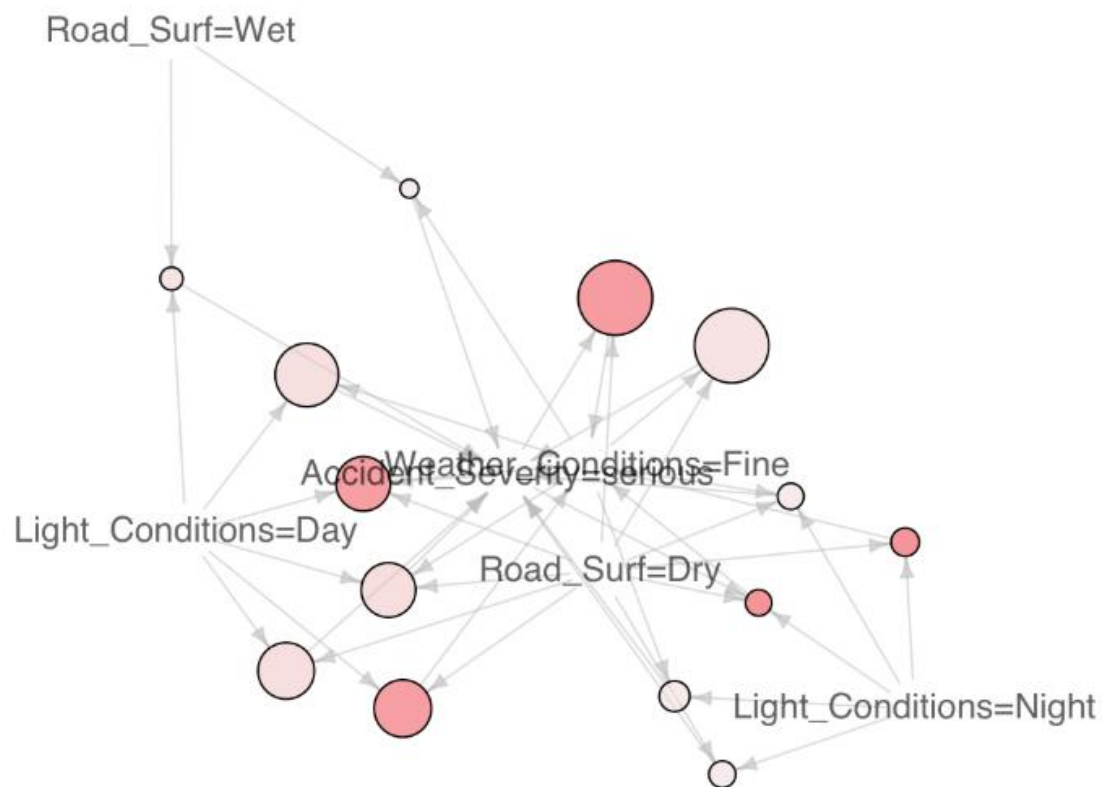


# Apriori for Serious

**Graph for 14 rules**

size: support (0.117 - 0.647)

color: lift (0.973 - 1.168)

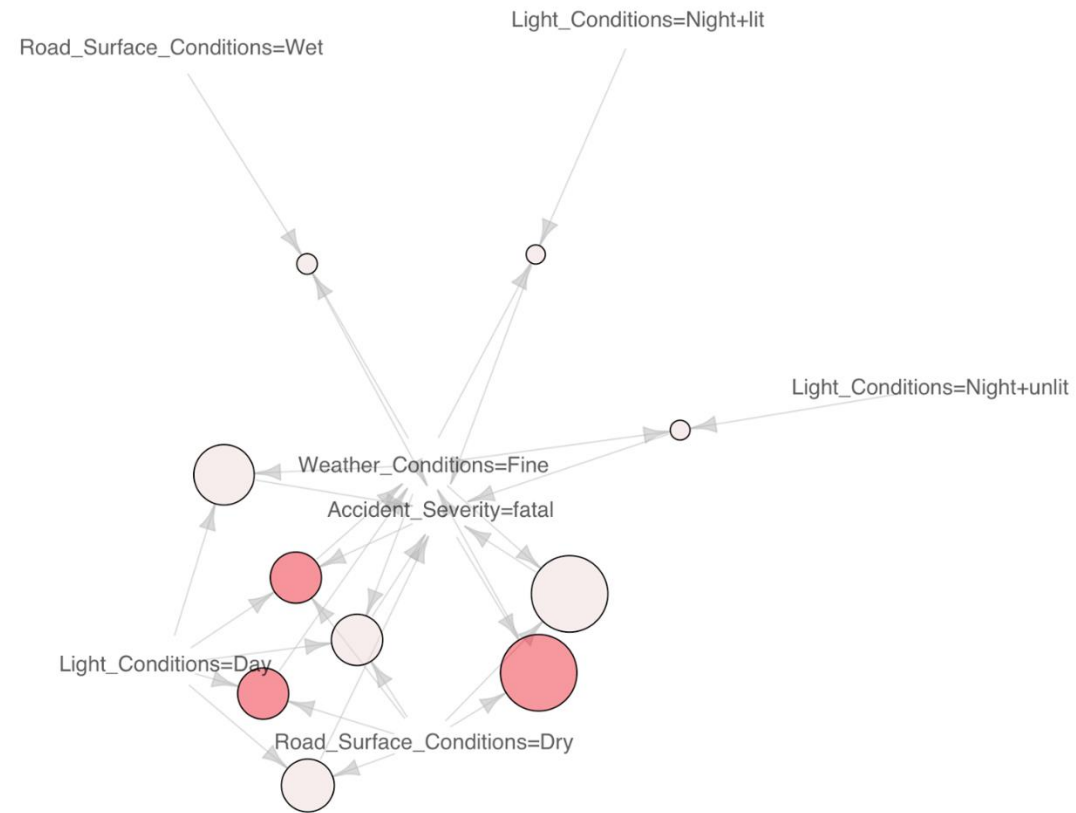




# Apriori for Fatal

Graph for 10 rules

size: support (0.156 - 0.656)  
color: lift (1 - 1.162)





## 結論



英國人周末都喜歡待在家



英國人大約在九點上班,五點下班  
上下班車流量最多車禍率也最高



晚上下雨天通常多為輕微車禍



造成嚴重/死亡車禍的狀況反而  
是在天氣好路面乾的情況

THANK YOU