



쾌변 프로젝트

3조

고은솔, 김민주, 배예슬, 송혜정, 이선영, 정보경

| 목차

가설

데이터 수집

데이터 분석

결과

1. BarChart
2. ScatterPlot
3. BoxPlot
4. HeatMap

시행착오

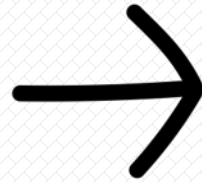
미래예측

앞으로 해볼 것

| 가설



음식



쾌변

| 데이터 수집

○ 수집 기간: 8/2 ~ 8/20 (19일)

닉네임	날짜	사시	식사 메뉴	맵기	매운거	차가운거	커피	탄산	술	유제품, 두유	물	채소, 과일	유산균	특이사항
가오리	2019-08-02	22:00	오징어, 수박, 새우깡, 맥주 두모금	0	-	-	-	-	맥주 20ml	-	100	수박	0	
가오리	2019-08-02	19:30	만두국, 김치참치치즈밥	2	-	-	-	-	-	슬라이스치즈 1/2	300	-	0	
가오리	2019-08-03	12:00	달강정	0	-	-	-	-	-	-	500	-	0	
가오리	2019-08-03	15:00	쌀햇도그	0	-	-	-	-	-	-	200	-	0	
가오리	2019-08-03	20:30	생선구이	0	-	-	-	-	-	-	300	오이 콩나물	0	
가오리	2019-08-03	9:30	만두국, 김치참치치즈밥	2	-	-	-	-	-	슬라이스치즈 1/2	300	-	1	
가오리	2019-08-04	11:00	누룽지	0	-	-	-	-	-	-	300	-	0	
가오리	2019-08-04	15:30	간장계란밥	0	-	-	-	-	-	-	200	-	0	
가오리	2019-08-04	18:00	초코파이	0	-	-	-	-	-	-	-	-	0	

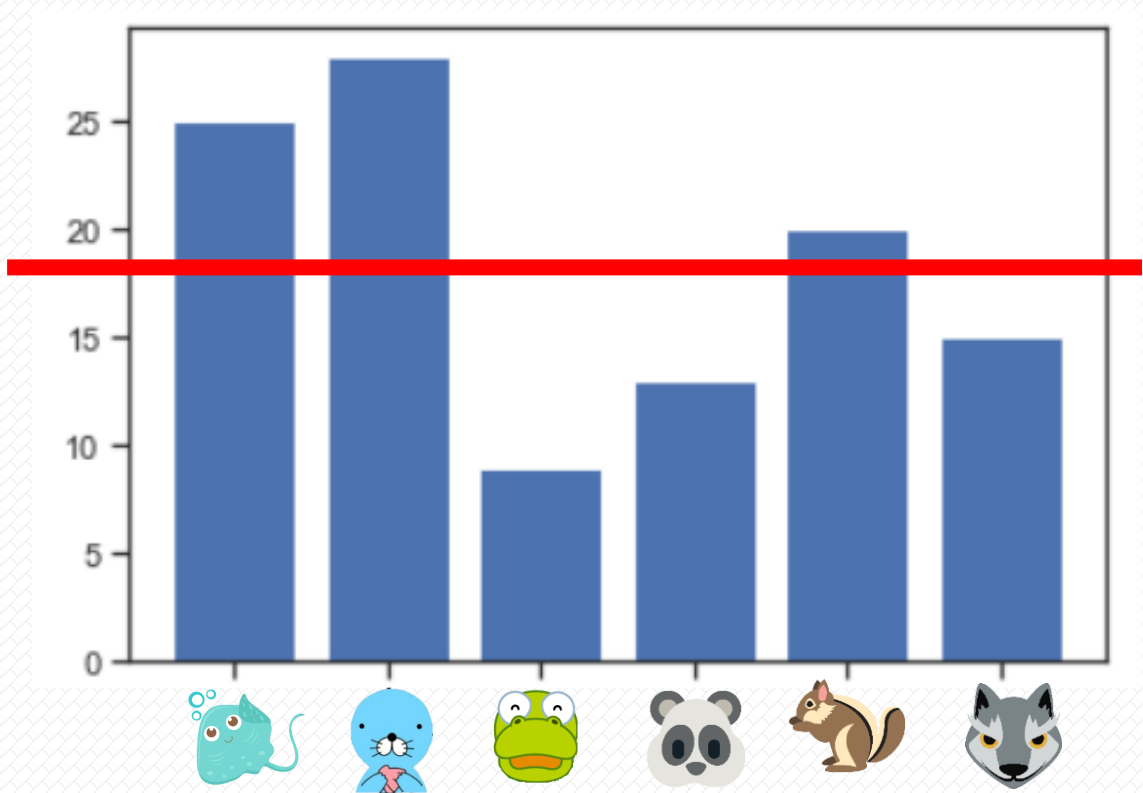
닉네임	날짜	화장실 간 시각	걸린 시간	쾌변 / 애매 / 시도	쾌변 여부	쾌변 패턴	생리
가오리	2019-08-03	9:00	5	애매	아주 약간 배 아팠는데 아주 약간 찜찜		
가오리	2019-08-03	9:50	3	애매	또 조금 배 아프고 여전히 찜찜		
가오리	2019-08-03	19:00	10	애매	배아픔...약한🔥		
가오리	2019-08-04	10:30	5	애매	낮뻬.. ㅇ 애매		
가오리	2019-08-05	10:00	2	쾌변	○		
가오리	2019-08-06	8:30	2	쾌변	○		
가오리	2019-08-06	9:00	5	쾌변	○		
가오리	2019-08-07	8:30	5	애매	○🔥		

| 데이터 전처리

id	date	time	spicy	cold	coffee	soda	alcohol	mlik	water	greens	lactobacillus
gaori	2019-08-02	22:00	0	0	0	0	1	0	100	1	0
gaori	2019-08-02	19:30	2	0	0	0	0	1	300	0	0
gaori	2019-08-03	12:00	0	0	0	0	0	0	500	0	0
gaori	2019-08-03	15:00	0	0	0	0	0	0	200	0	0
gaori	2019-08-03	20:30	0	0	0	0	0	0	300	1	0
gaori	2019-08-03	9:30	2	0	0	0	0	1	300	0	1
gaori	2019-08-04	11:00	0	0	0	0	0	0	300	0	0
gaori	2019-08-04	15:30	0	0	0	0	0	0	200	0	0
gaori	2019-08-04	18:00	0	0	0	0	0	0	0	0	0
id	date	time	minute	feel	menstruation						
gaori	2019-08-03	9:00	5	2	0						
gaori	2019-08-03	9:50	3	2	0						
gaori	2019-08-03	19:00	10	2	0						
gaori	2019-08-04	10:30	5	2	0						
gaori	2019-08-05	10:00	2	3	0						
gaori	2019-08-06	8:30	2	3	0						

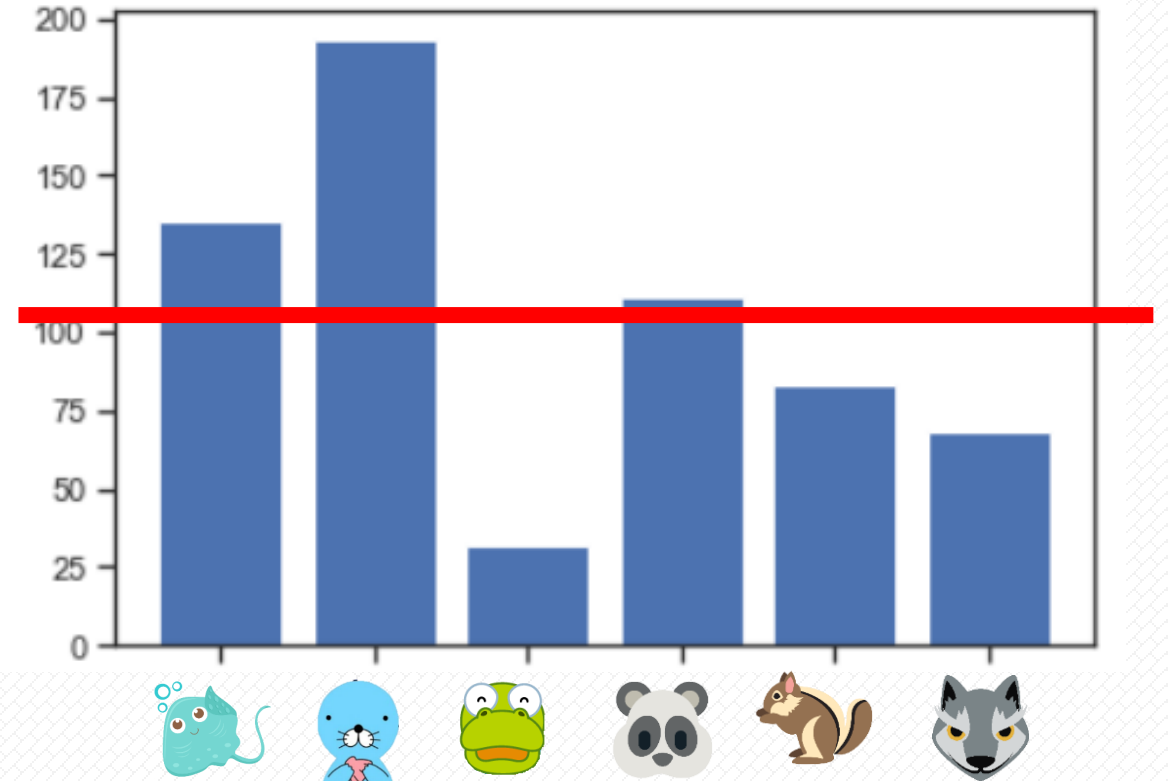
| BarChart

개인별 배변 횟수 총합



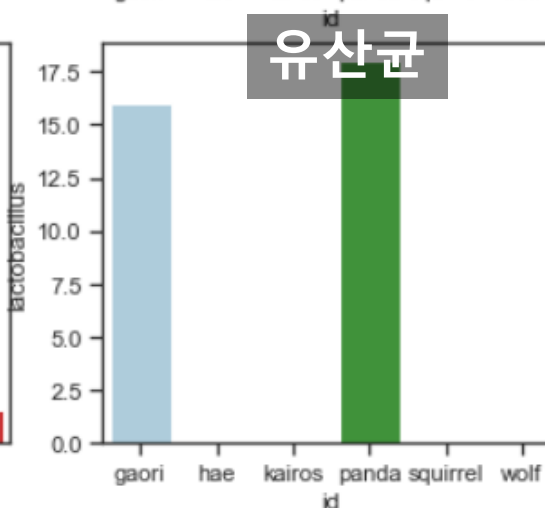
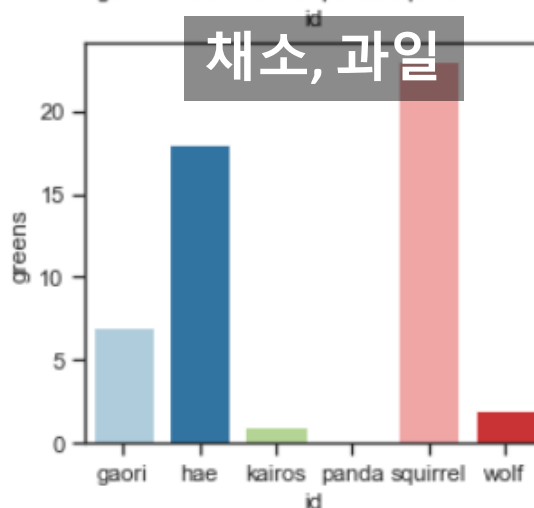
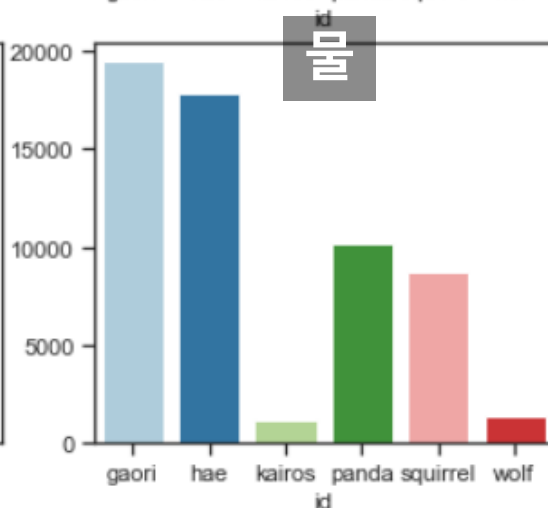
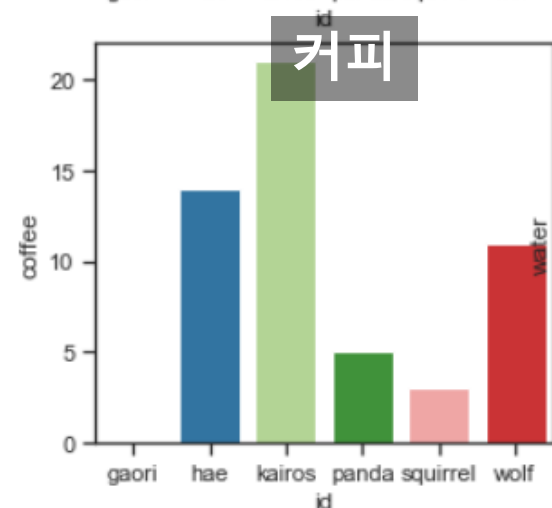
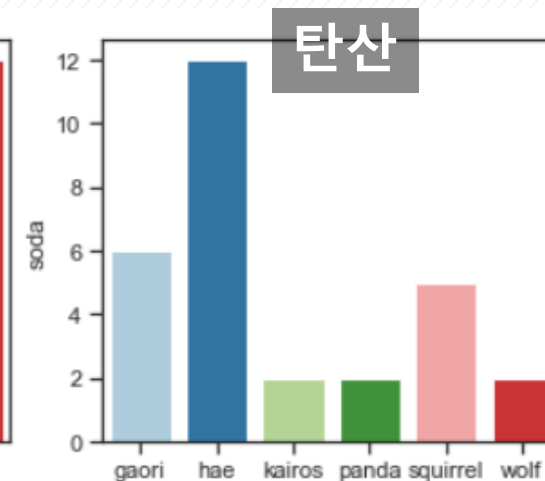
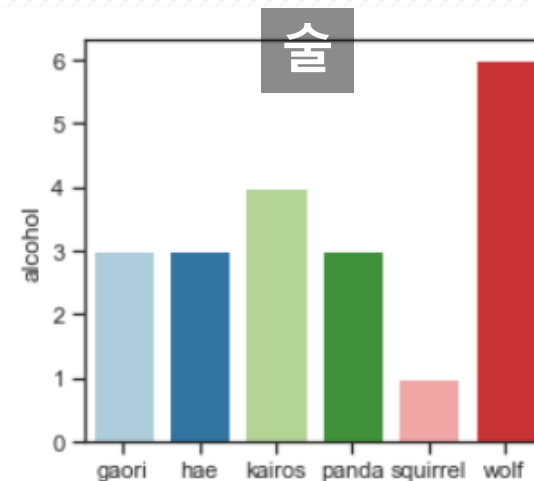
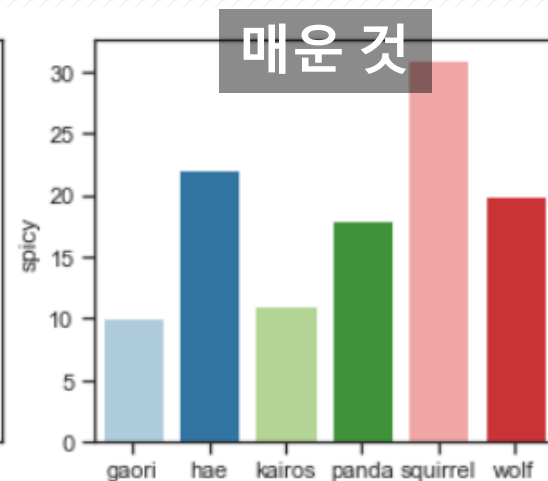
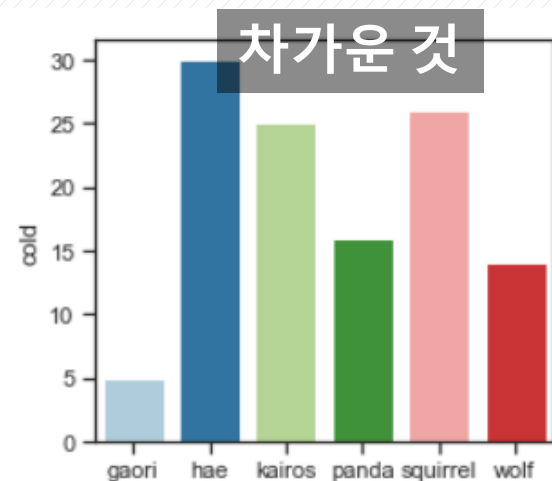
일 평균 1회

개인별 배변 시간(분) 총합

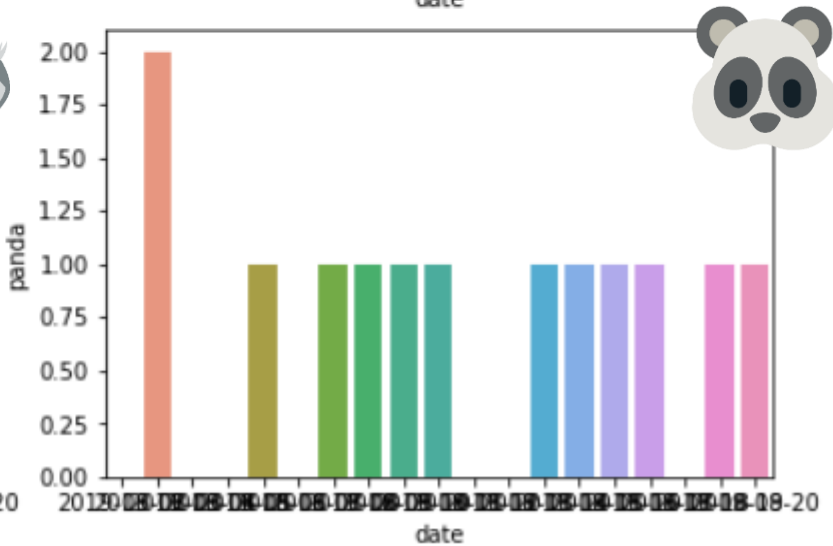
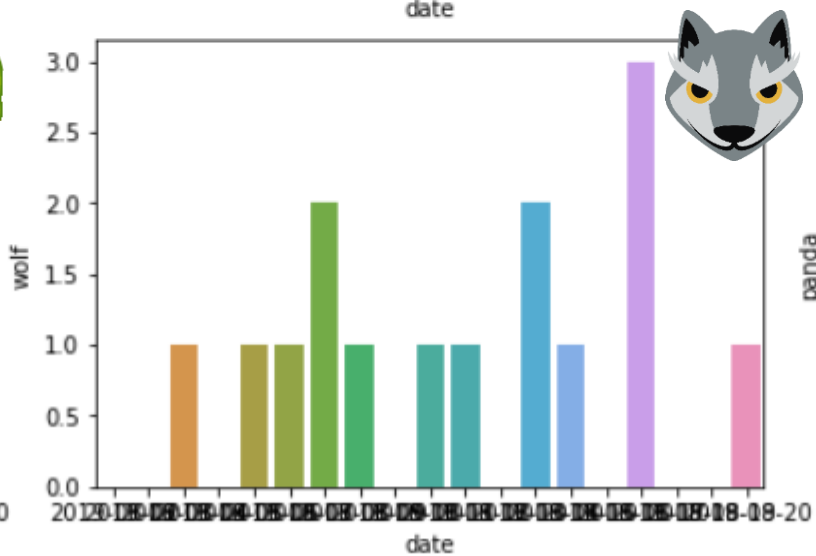
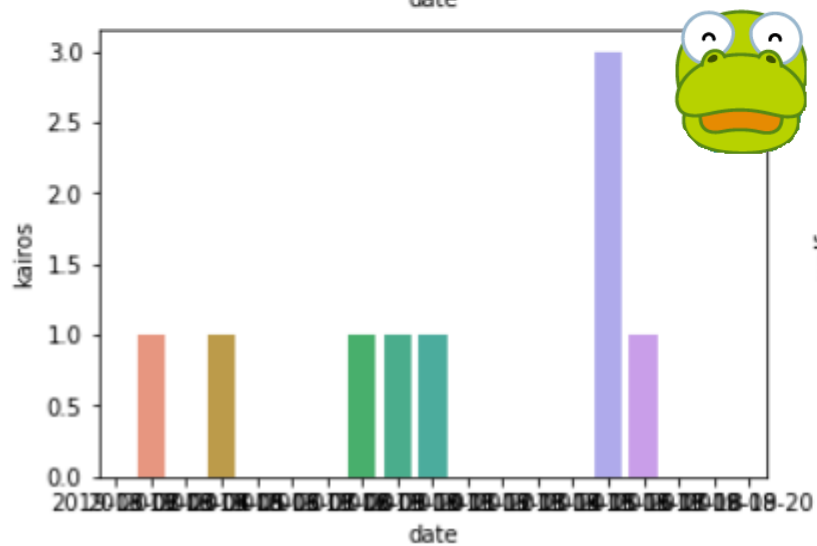
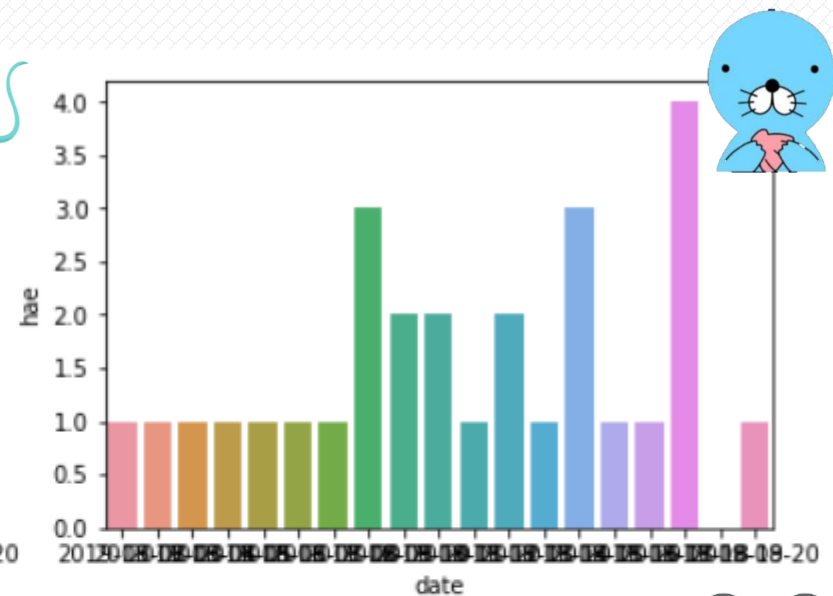
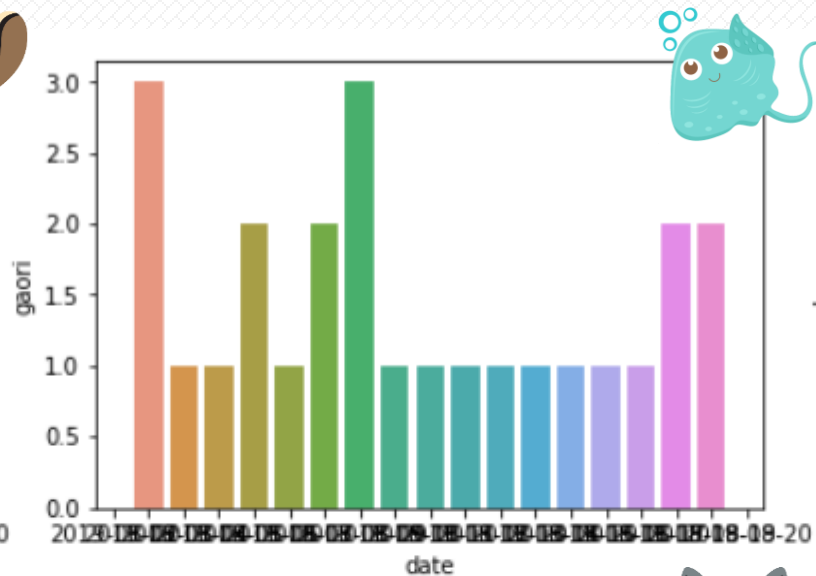
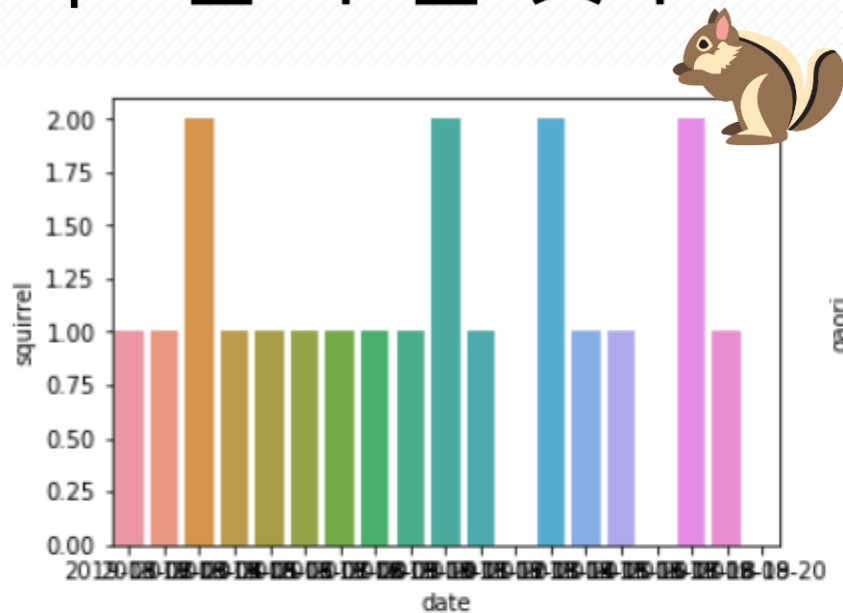


일 평균 5.4분

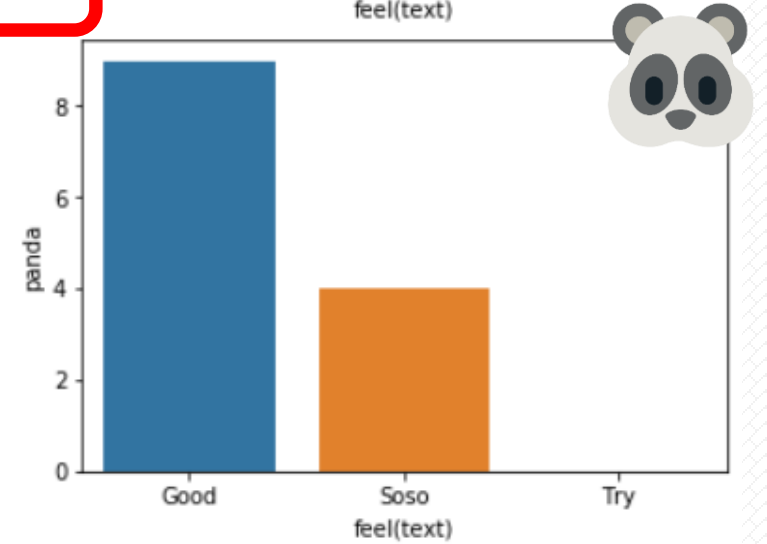
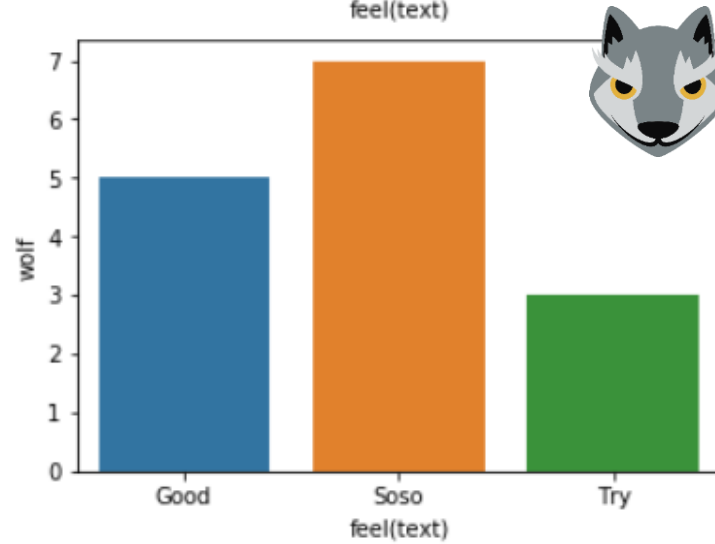
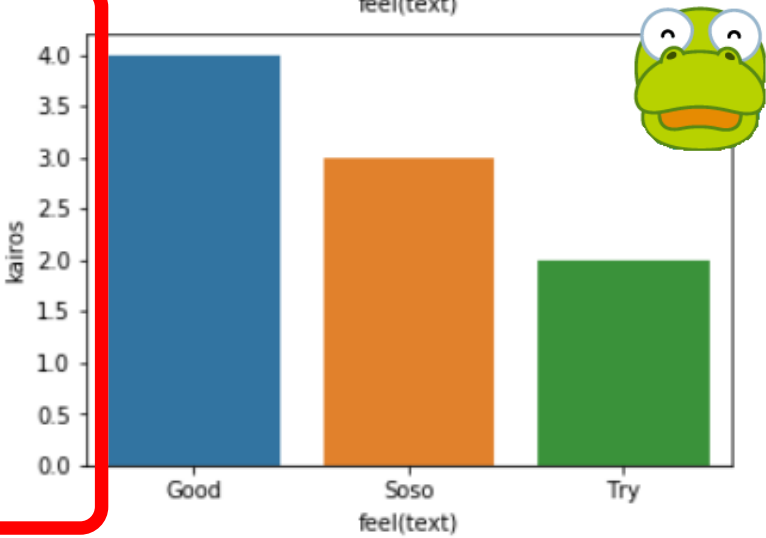
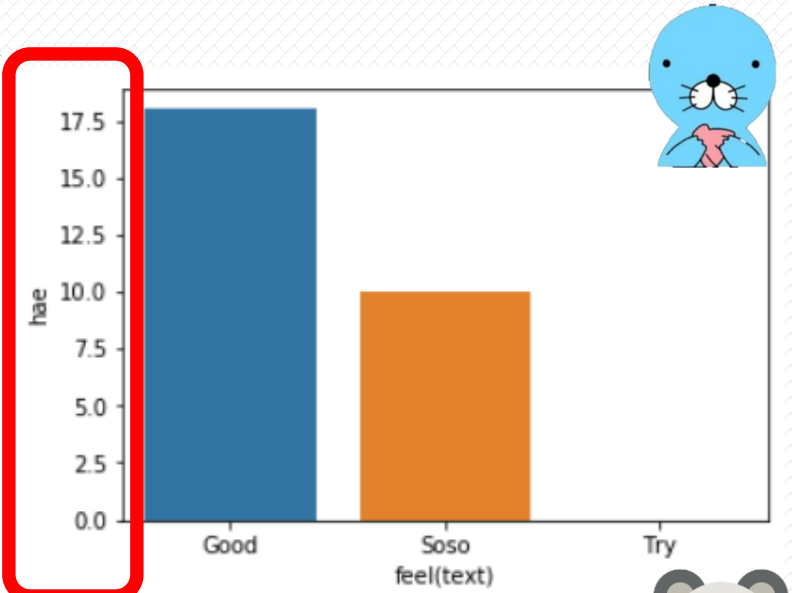
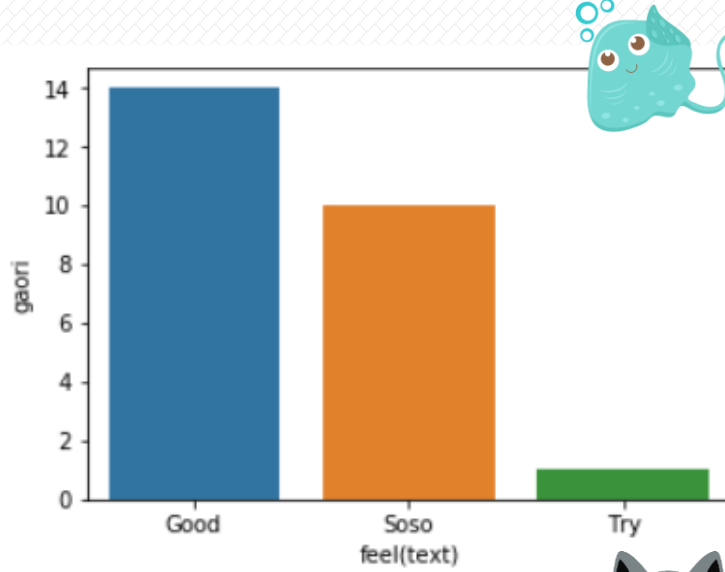
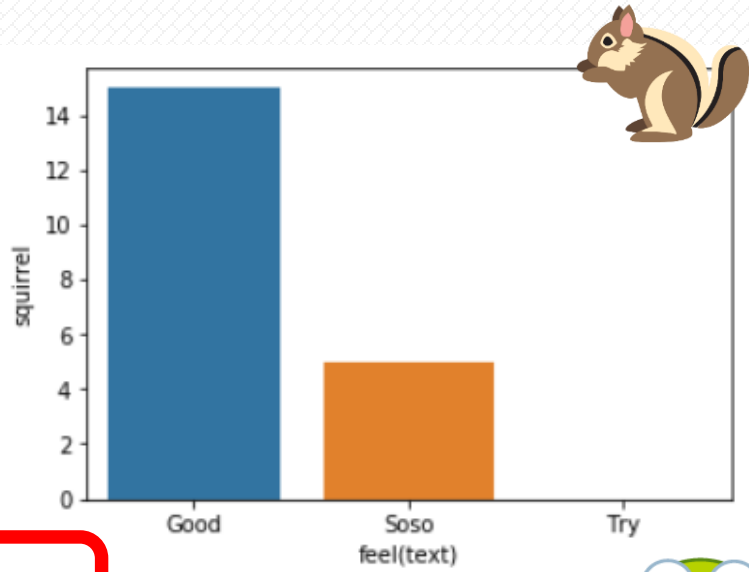
| 음식 별 섭취 빈도 수



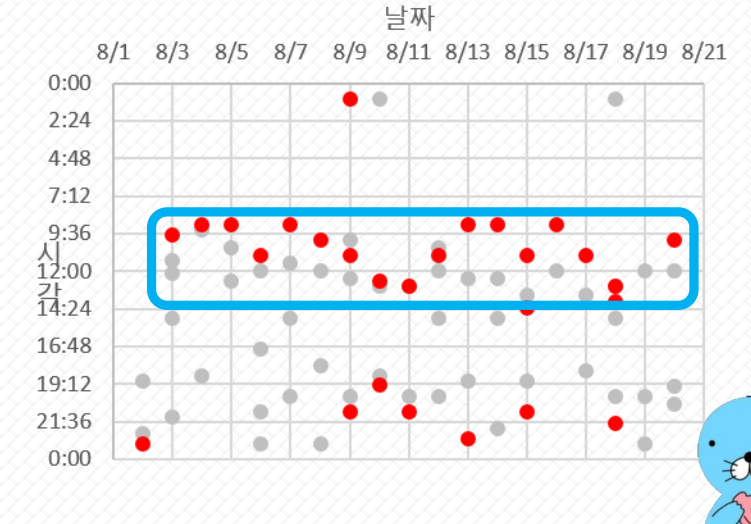
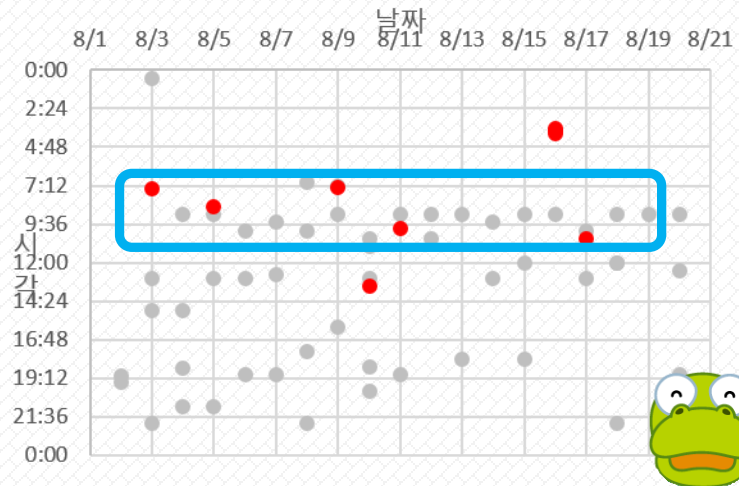
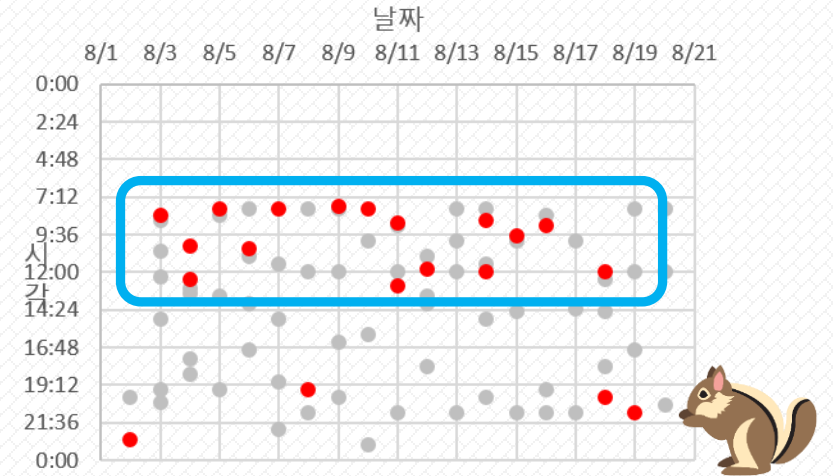
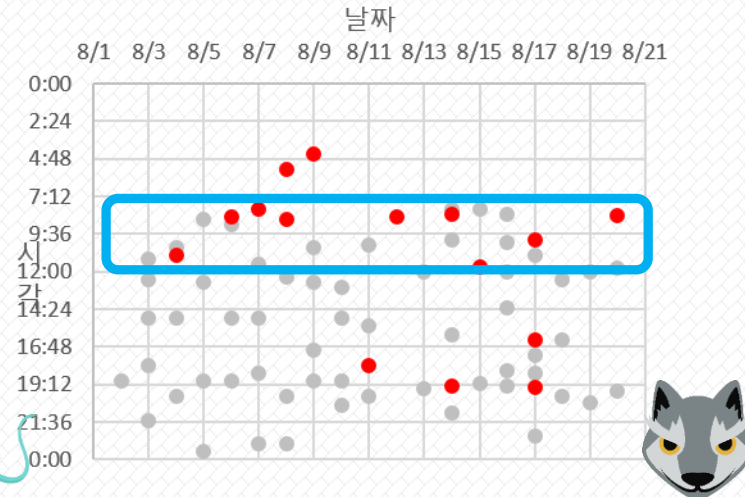
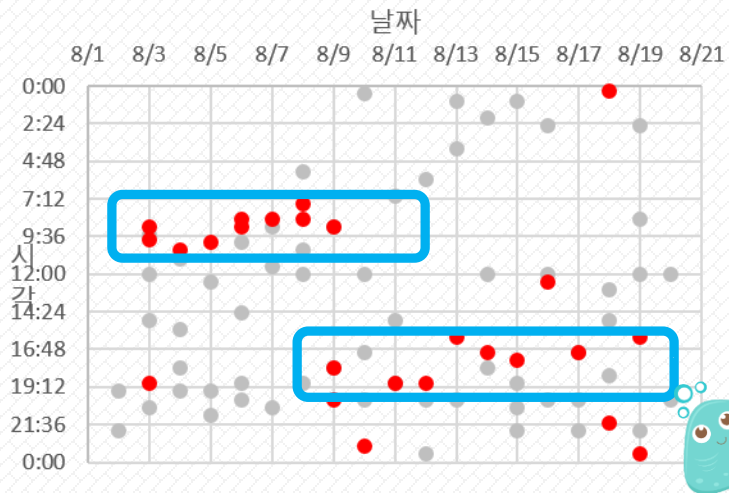
| 날짜 별 횡수



| 개인별 쾌변 지수

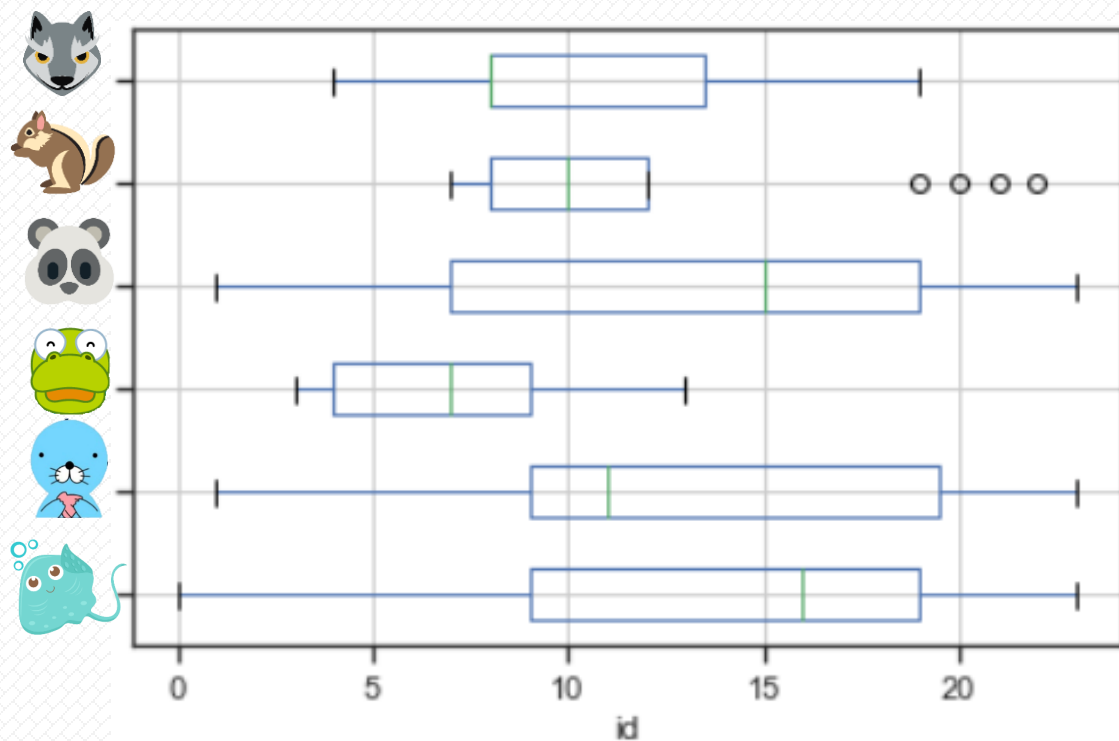


| ScatterPlot

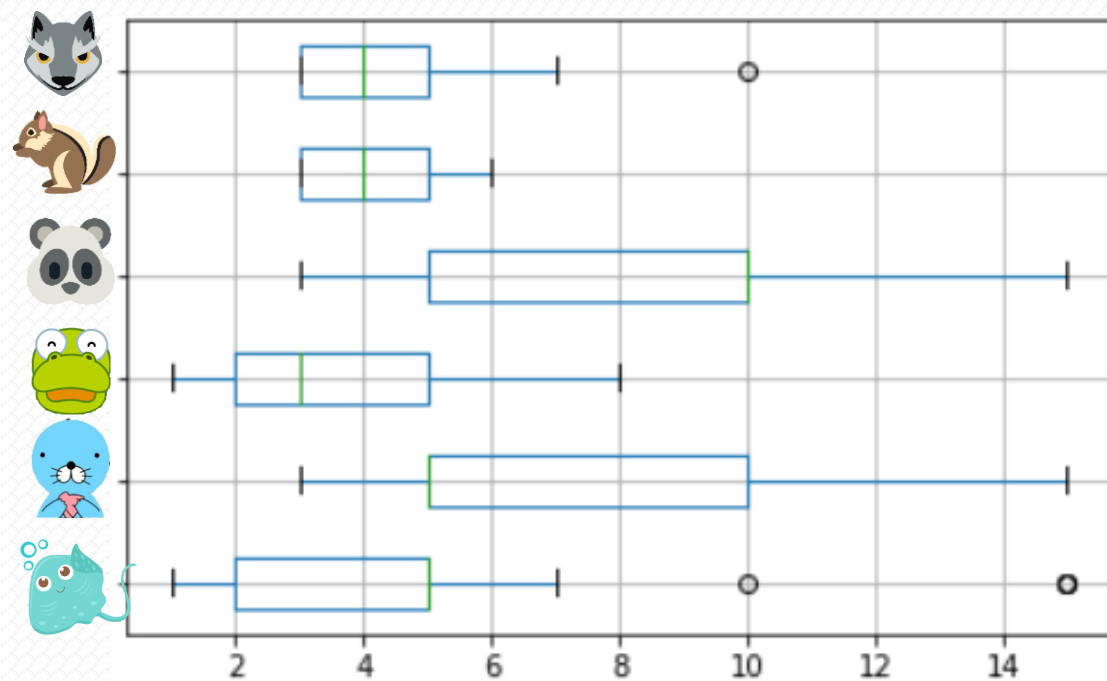


| BoxPlot

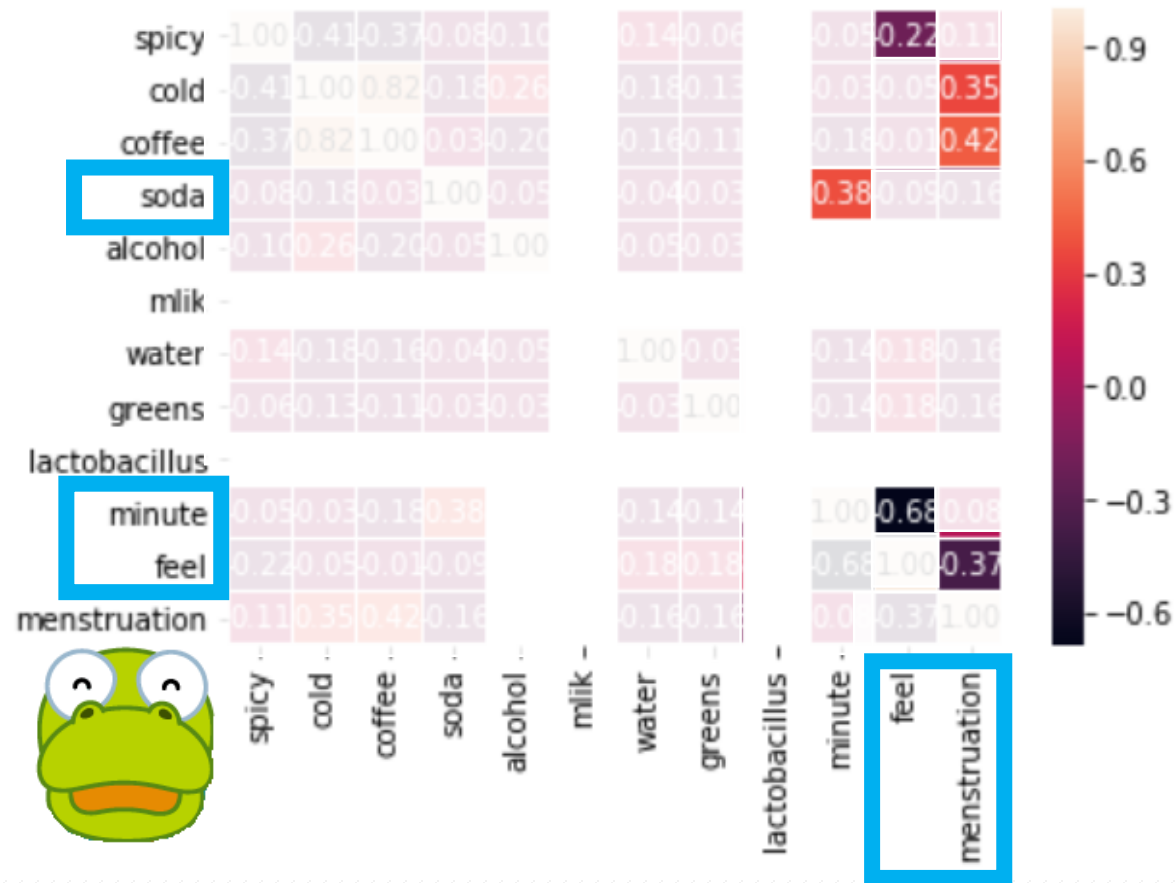
배변 시간대(24시 기준)



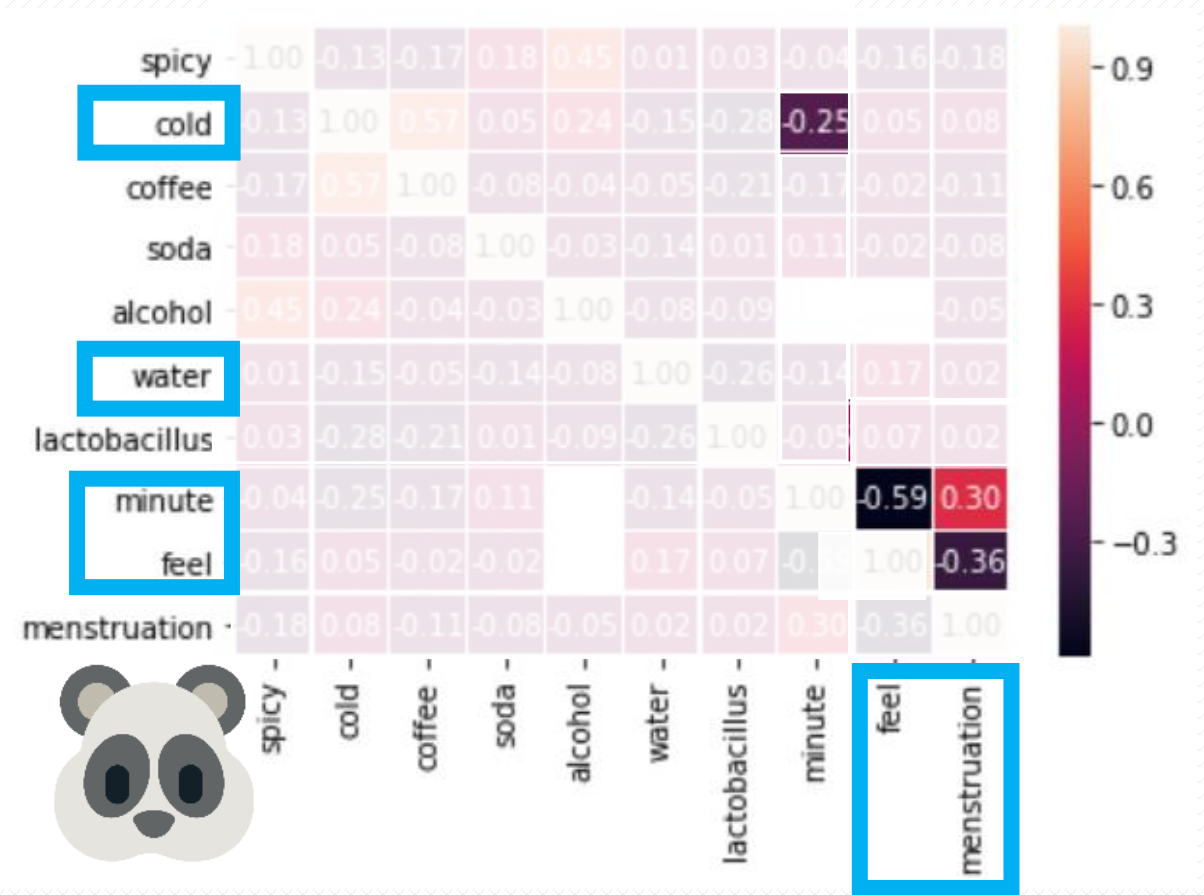
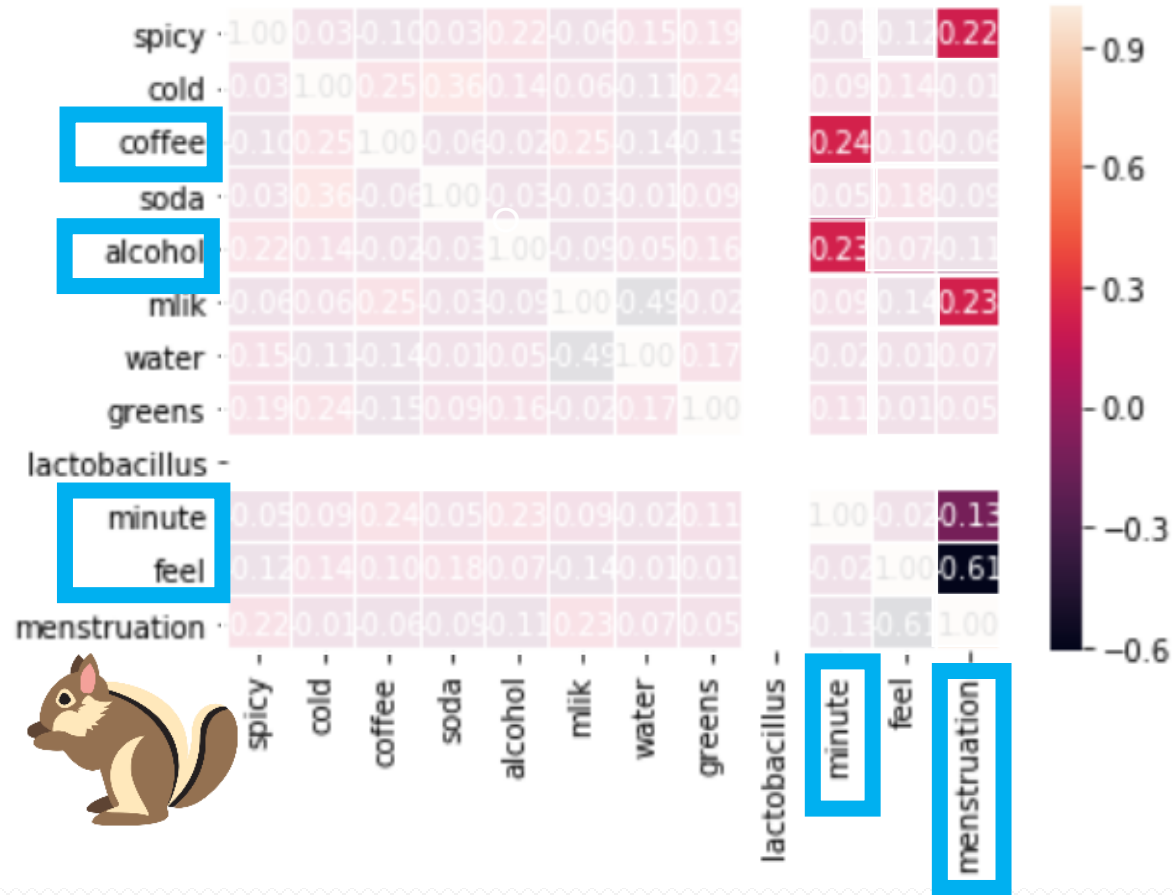
배변에 걸린 시간(분)



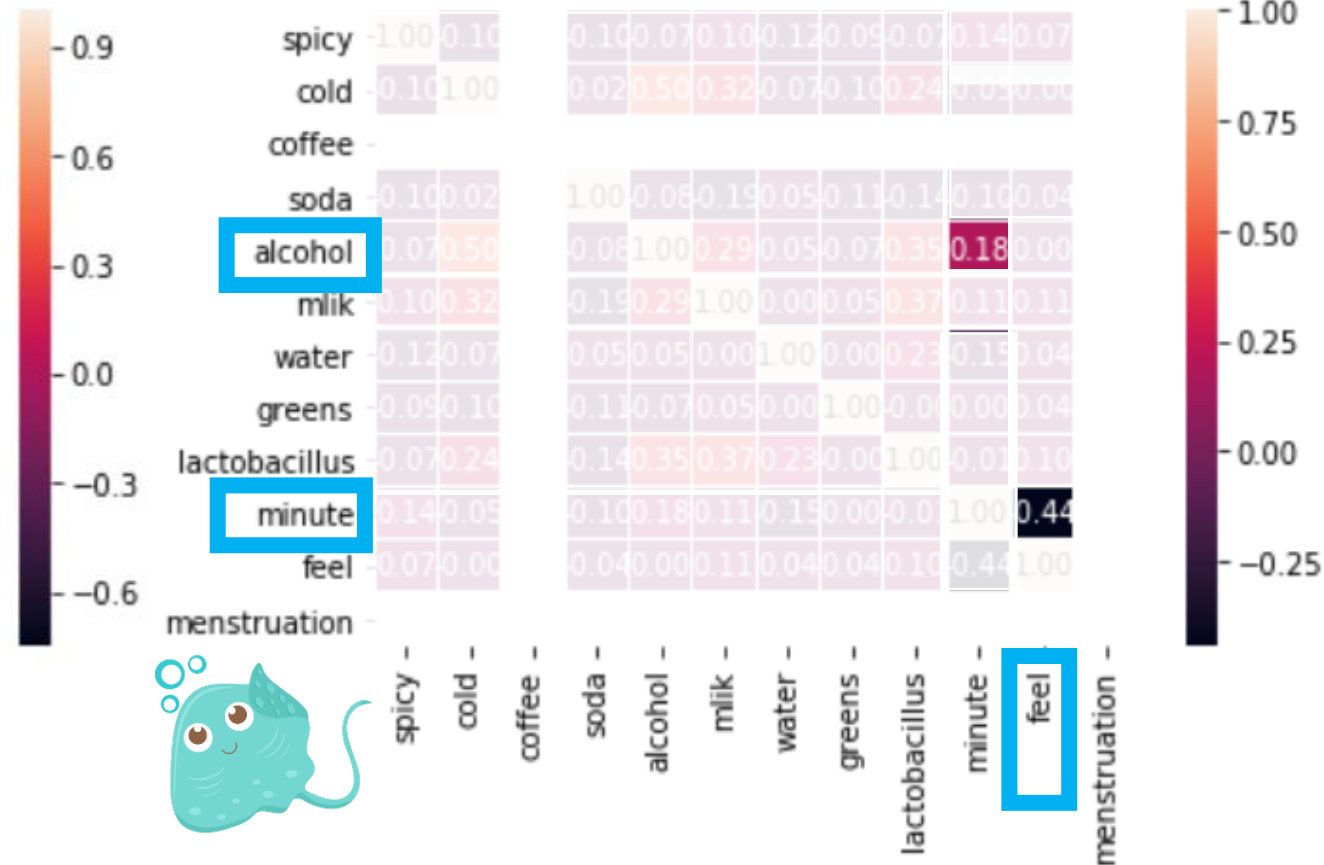
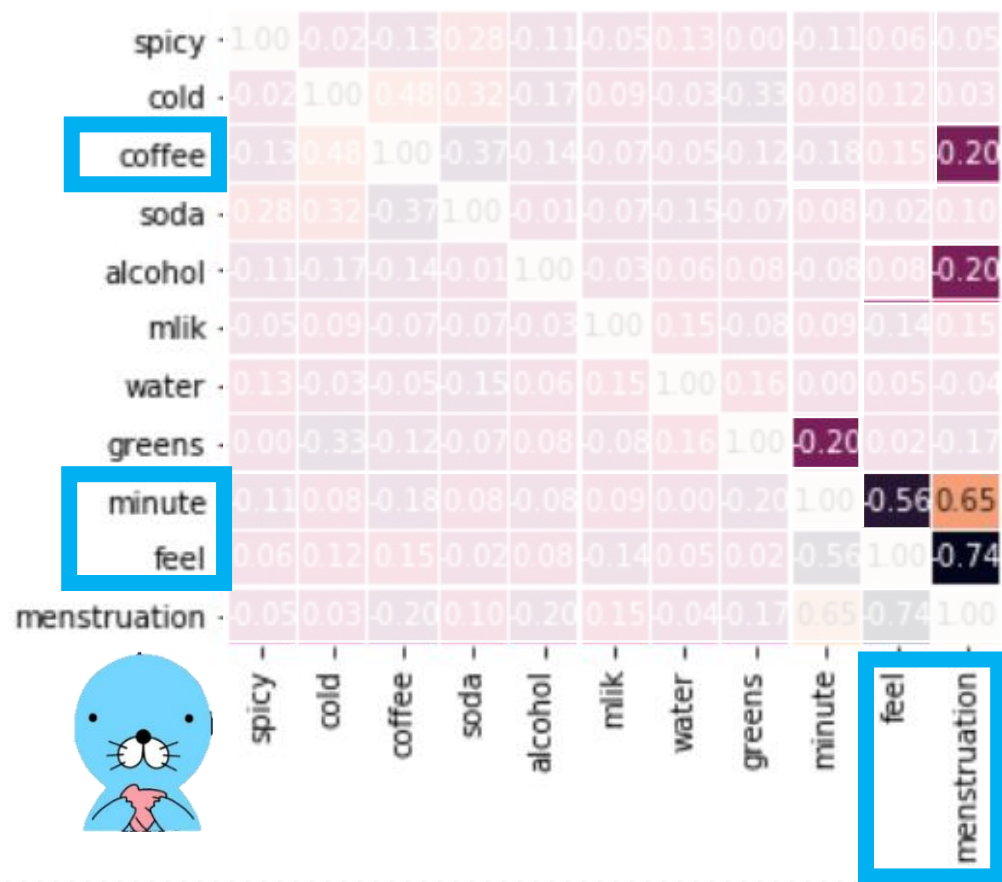
| HeatMap



| HeatMap

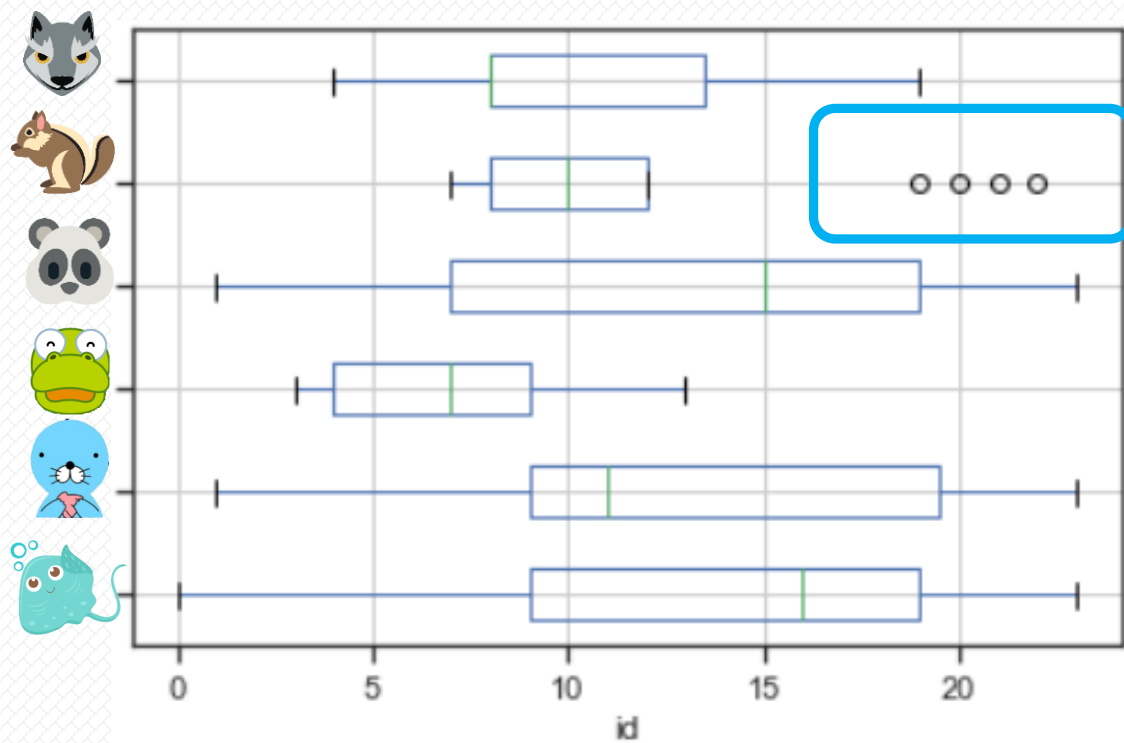


| HeatMap



| 사례 분석 🦊

배변 시간대(24시 기준)



| 사례 분석

```
poop_squirrel = poop[poop['id'] == 'squirrel']  
poop_squirrel[poop_squirrel['time_only'] > 15]['date']
```

```
75    2019-08-02  
82    2019-08-08  
93    2019-08-18  
94    2019-08-19  
Name: date, dtype: object
```

```
eat_squirrel = eat[eat['id'] == 'squirrel']  
temp = eat_squirrel[  
    (eat_squirrel['date'] == '2019-08-07') | (eat_squirrel['date'] == '2019-08-17') | (eat_squirrel['date'] == '2019-08-18')]  
temp.groupby('date')['spicy', 'cold', 'coffee', 'soda', 'alcohol', 'mlik', 'water', 'greens', 'lactobacillus'].sum()
```

	spicy	cold	coffee	soda	alcohol	mlik	water	greens	lactobacillus
date									
2019-08-07	0	2	0	1	0	0	700	2	0
2019-08-17	2	1	0	0	0	0	500	1	0
2019-08-18	0	2	1	0	0	1	0	1	0

| 사례 분석

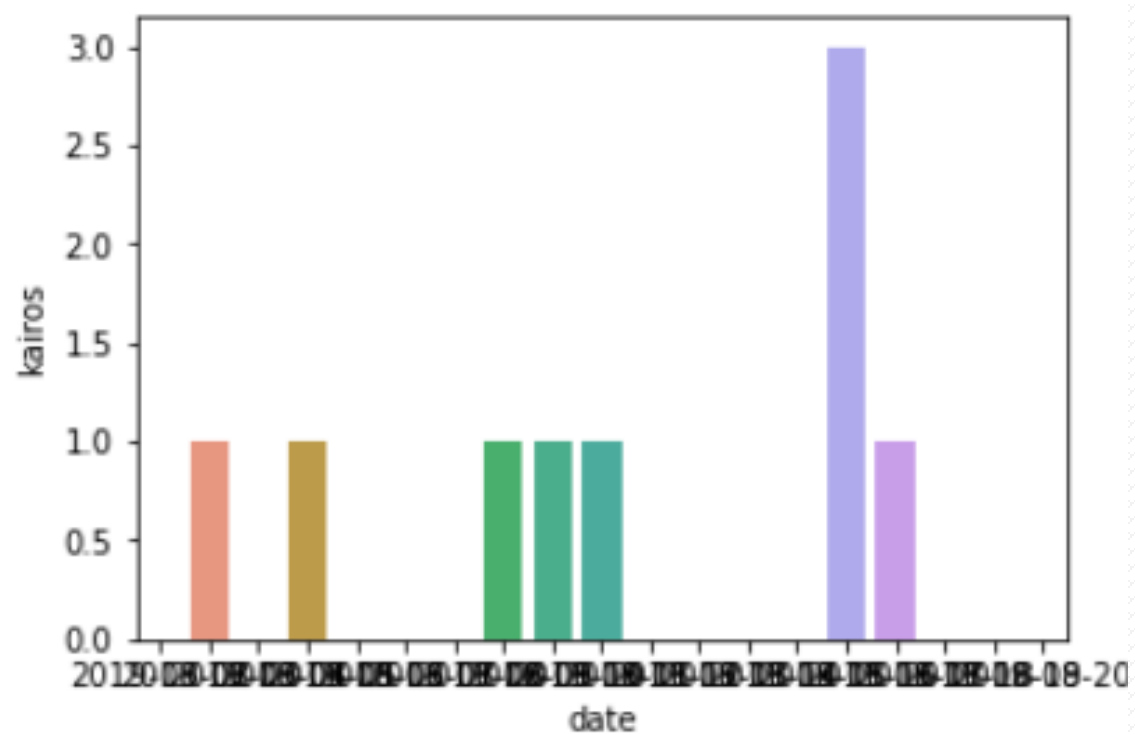
```
eat_count_squirrel = eat_squirrel.groupby('date')[  
    'spicy', 'cold', 'coffee', 'soda', 'alcohol', 'milk', 'water', 'greens', 'lactobacillus'].sum()  
  
# 차가운거 + 채소  
eat_count_squirrel[(eat_count_squirrel['greens'] > 0) & (eat_count_squirrel['cold'] > 0)]
```

	spicy	cold	coffee	soda	alcohol	milk	water	greens	lactobacillus
date									
2019-08-03	4	1	0	0	0	0	800	1	0
2019-08-04	3	3	1	0	1	2	600	1	0
2019-08-05	0	1	0	0	0	1	500	1	0
2019-08-06	1	1	0	1	0	2	400	2	0
2019-08-07	0	2	0	1	0	0	700	2	0
2019-08-08	1	1	0	1	0	2	500	2	0
2019-08-09	1	2	1	0	0	2	200	1	0
2019-08-11	3	3	0	1	0	1	800	1	0
2019-08-12	0	1	0	0	0	2	700	1	0
2019-08-14	2	1	0	0	0	2	500	2	0
2019-08-15	4	2	0	0	0	2	300	2	0
2019-08-17	2	1	0	0	0	0	500	1	0

| 사례 분석



일 배변 횟수



| 사례 분석

```
poop_count_kairos = poop_count[poop_count['id'] == 'kairos']  
poop_count_kairos[poop_count_kairos['feel'] == 3]
```

	id	date	feel	day_only
40	kairos	2019-08-16	3	16

```
eat_kairos = eat[eat['id'] == 'kairos']  
temp = eat_kairos[(eat_kairos['date'] == '2019-08-15')]  
  
temp.groupby('date')['spicy', 'cold', 'coffee', 'soda', 'alcohol', 'mlik', 'water', 'greens', 'lactobacillus'].sum()
```

	spicy	cold	coffee	soda	alcohol	mlik	water	greens	lactobacillus
date									
2019-08-15	0	3	2	0	1	0	0	0	0

| 사례 분석

```
eat_count_kairos = eat_kairos.groupby('date')[  
    'spicy', 'cold', 'coffee', 'soda', 'alcohol', 'milk', 'water', 'greens', 'lactobacillus'].sum()
```

술 + 커피 + 차가운거

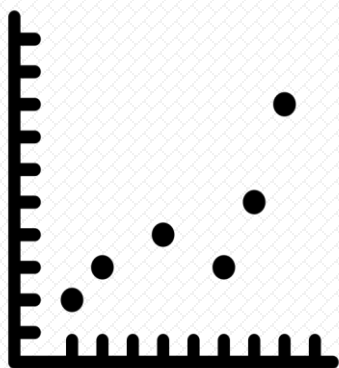
```
eat_count_kairos[(eat_count_kairos['alcohol'] > 0) & (eat_count_kairos['coffee'] > 0) & (eat_count_kairos['cold'] > 0)]
```

	spicy	cold	coffee	soda	alcohol	milk	water	greens	lactobacillus
date									
2019-08-08	1	2	1	0	1	0	0	0	0
2019-08-15	0	3	2	0	1	0	0	0	0

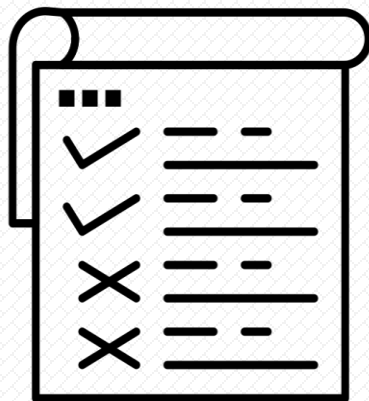
```
poop_count_kairos[(poop_count_kairos['date'] == '2019-08-09') | (poop_count_kairos['date'] == '2019-08-16')][['id', 'date', 'feel']]
```

	id	date	feel
37	kairos	2019-08-09	1
40	kairos	2019-08-16	3

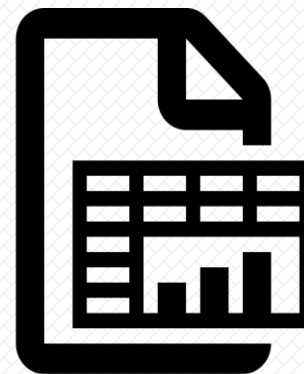
| 결과



패턴 확인

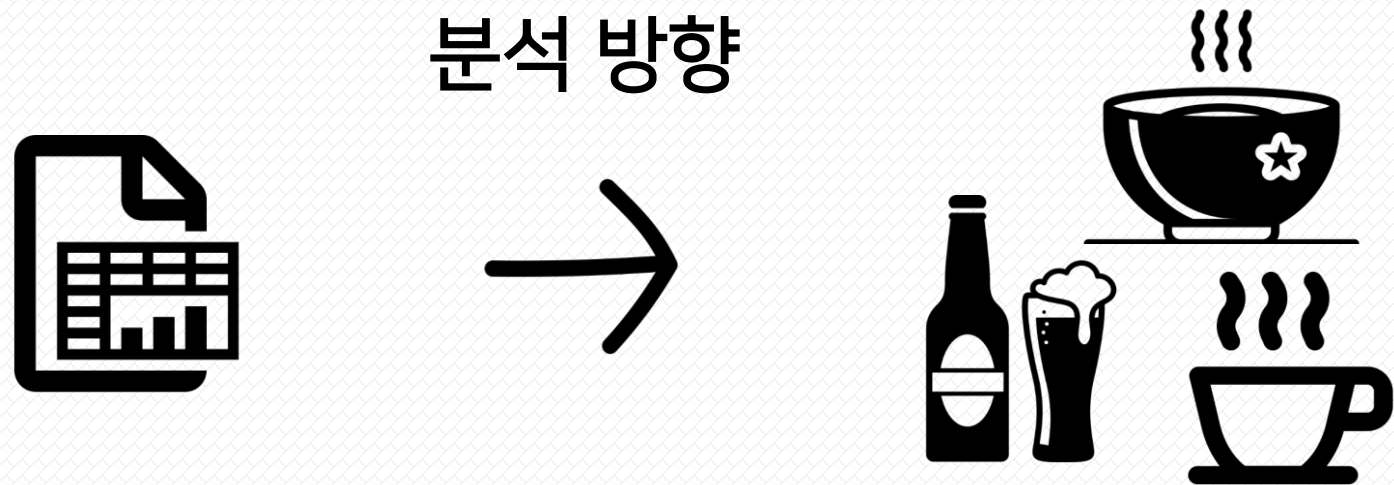


가설 검증 어려움



자료 부족

| 시행착오



데이터를 통해 원인을 추적

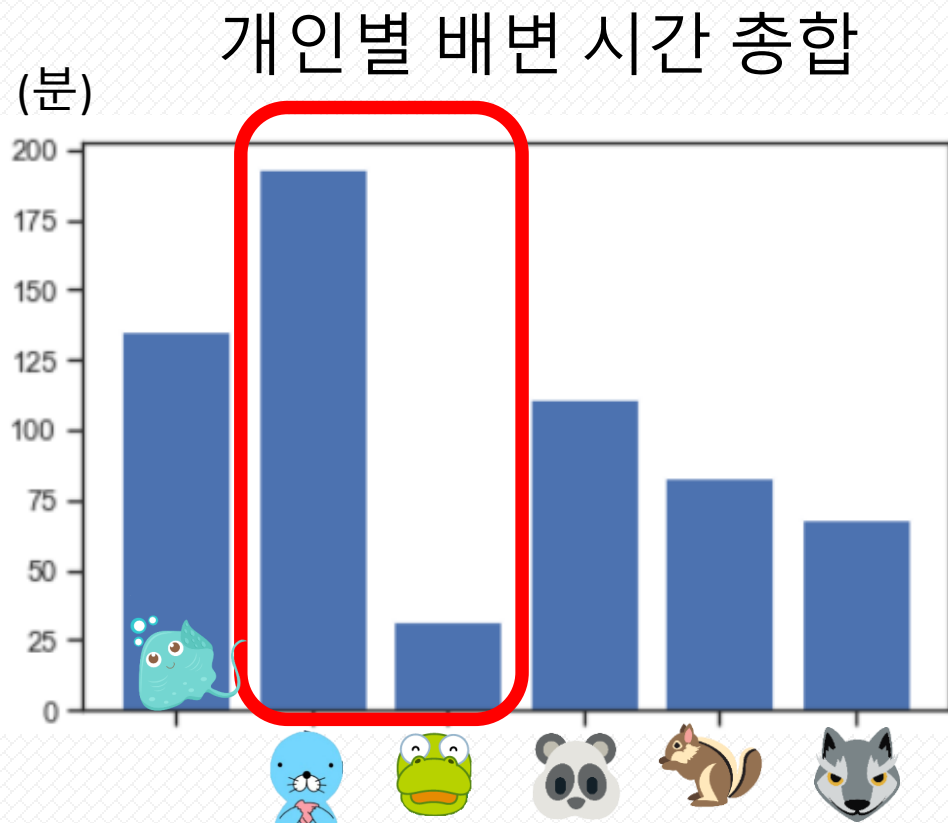
| 미래 예측



앞으로 남은 인생의 얼마를
화장실에서 보내게 될까?

| 미래 예측

앞으로 50년 동안 화장실에서 보내는 시간



- 10.7분 /일
- $10.7 * 365 * 50$
= 136일



- 2.9분 /일
- $2.9 * 365 * 50$
= 36일

100일 차이 발생

| 앞으로 해볼 것



식단 변화



기존 연구 사례

Q & A