



Escuela Técnica Superior de Ingenierías Informática y de Telecomunicación
Máster Profesional en Ingeniería Informática

Curso 2020/2021

PRÁCTICA 4

Gestión de Información en la Web

Breve descripción

Evaluación de Redes en Twitter

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Propiedad Intelectual

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RESUMEN

Esta práctica consiste en realizar una serie de consultas a una base de datos documental en “*MongoDB*”. Se envía adjunto el código “*Python*” solución.

Los datos de origen son:

https://raw.githubusercontent.com/manuparra/MasterCyberSec_Practice/master/dataset/mongodb/SacramentocrimeJanuary2006.csv

Para realizar la práctica es necesario instalar “*MongoDB*”, cargar el conjunto de datos en “*MongoDB*” y luego realizar las consultas siguientes:

1. **Totalizar el número de delitos por cada tipo**
2. **Franja horaria (o franjas) con más número de delitos**

Se envía adjunto el código “*Python*” solución.



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1 EJERCICIO 1

Para totalizar el número de delitos por cada tipo he realizado la siguiente operación:

```
def count_different_crimes():
    print("\nTotalizar el número de delitos por cada tipo")
    collection = login()
    result = collection.aggregate(
        [{"$group": {"_id": "$crimedescr", "count": {"$sum": 1}}, {"$sort": {"count": 1}}])
    for res in result:
        print(res)
```

Ilustración 1 - Código para el segundo ejercicio

Básicamente lo que hago es agrupar los delitos por su tipo con un agregado y contar cuantos hay de cada uno.

1.1 Solución

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{'_id': '484G(B) PC ACCESS CARD FRAUD', 'count': 66}
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{'_id': '484 PETTY THEFT-SHOPLIFT', 'count': 86}
{'_id': 'NON INJ HR/MAIL OUT REPORT', 'count': 88}
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{'_id': '211 PC ROBBERY UNSPECIFIED', 'count': 99}
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{'_id': '459 PC BURGLARY BUSINESS', 'count': 135}
{'_id': 'TRAFFIC-ACCIDENT-NON INJURY', 'count': 175}
{'_id': 'TRAFFIC-ACCIDENT INJURY', 'count': 180}
{'_id': '594(B)(2)(A) VANDALISM/ -\$400', 'count': 195}
{'_id': '10851 VC AUTO THEFT LOCATE', 'count': 223}
{'_id': 'MISSING PERSON', 'count': 268}
{'_id': '459 PC BURGLARY RESIDENCE', 'count': 356}
{'_id': 'TOWED/STORED VEHICLE', 'count': 429}
{'_id': 'TOWED/STORED VEH-14602.6', 'count': 453}
{'_id': '459 PC BURGLARY VEHICLE', 'count': 461}
{'_id': '10851(A)VC TAKE VEH W/O OWNER', 'count': 652}

2 EJERCICIO 2

Para mostrar las franjas horarias con más delitos he hecho lo siguiente:

```
def most_crime_time():
    print("\nFranja horaria (o franjas) con más número de delitos")
    collection = login()
    result = collection.aggregate(
        [{"$group": {"_id": "$datetime", "count": {"$sum": 1}}}, {"$sort": {"count": 1}}])
    for res in result:
        print(res)
```

Ilustración 2 – Código para el primer ejercicio

He almacenado solo la hora por lo que fácilmente podemos repetir el procedimiento de antes utilizando solo el dígito de la hora. Si un delito se realizó entre las 00:00 y las 00:59 se almacenará en base de datos como 0, si se realizó entre las 01:00 y las 01:59 se almacenará como 1, y así hasta las 23:59.

2.1 Solución

```
{'_id': '5', 'count': 73}
{'_id': '4', 'count': 91}
{'_id': '6', 'count': 114}
{'_id': '3', 'count': 122}
{'_id': '2', 'count': 171}
{'_id': '1', 'count': 187}
{'_id': '7', 'count': 219}
{'_id': '23', 'count': 304}
{'_id': '10', 'count': 306}
{'_id': '9', 'count': 326}
{'_id': '11', 'count': 338}
{'_id': '13', 'count': 353}
{'_id': '19', 'count': 358}
{'_id': '21', 'count': 358}
{'_id': '20', 'count': 362}
{'_id': '8', 'count': 380}
{'_id': '22', 'count': 384}
{'_id': '14', 'count': 385}
{'_id': '12', 'count': 399}
{'_id': '15', 'count': 417}
```


{'_id': '18', 'count': 430}

{'_id': '17', 'count': 458}

{'_id': '16', 'count': 471}

{'_id': '0', 'count': 578}