elasticsearch
for developer

Aggregation Test Drive

car.txt

Data for test drive

Transaction ของการขายรถ

Manufacturer	Color	Price	Sold Date
Honda	Red	10000	2014-10-28
Ford	Green	30000	2014-05-18

Requirement

สีของรถที่ขายดีที่สุด ?

Count by color

```
GET /cars/_search?search_type=count
{
  "aggs": {
    "colors": {
      "terms": {
        "field": "color"

      }

    }

  }

}
```

Result

```json
"aggregations": {
    "colors": {
        "doc_count_error_upper_bound": 0,
        "sum_other_doc_count": 0,
        "buckets": [
            {
                "key": "red",
                "doc_count": 4
            },
            {
                "key": "blue",
                "doc_count": 2
            },
            {
                "key": "green",
                "doc_count": 2
            }
        ]
    }
}
```

Requirement

ราคาเฉลี่ยของรถแต่ละสี ?

Average price by color

```
GET /cars/_search?search_type=count
{
  "aggs": {
    "colors": {
      "terms": {
        "field": "color"
      },
      "aggs": {
        "avg_price": {
          "avg": {
            "field": "price"
          }
        }}}}}
```

Sub-aggregattion

Result

```
"aggregations": {
    "colors": {
        "doc_count_error_upper_bound": 0,
        "sum_other_doc_count": 0,
        "buckets": [
            {
                "key": "red",
                "doc_count": 4,
                "avg_price": {
                    "value": 32500
                }
            },
            {
                "key": "blue",
                "doc_count": 2,
                "avg_price": {
                    "value": 20000
                }
            },
            {
                "key": "green",
                "doc_count": 2,
                "avg_price": {
                    "value": 21000
                }
            }
        ]
    }
```

Requirement

ต้องการเห็นว่าในแต่ละสีรถยี่ห้ออะไรบ้าง ?

Add make

GET /cars/_search?**search_type=count**

```
…
 "aggs": {
      "avg_price": {
        "avg": {
          "field": "price"

        }

      },

      "make": {

        "terms": {

          "field": "make"

        }

}}
```

Result

```json
"buckets": [
  {
    "key": "red",
    "doc_count": 4,
    "avg_price": {
      "value": 32500
    },
    "make": {
      "doc_count_error_upper_bound": 0,
      "sum_other_doc_count": 0,
      "buckets": [
        {
          "key": "honda",
          "doc_count": 3
        },
        {
          "key": "bmw",
          "doc_count": 1
        }
      ]
    }
  },
```

Requirement

ต้องการราคาสูงและต่ำสุดของแต่ละยี่ห้อ ?

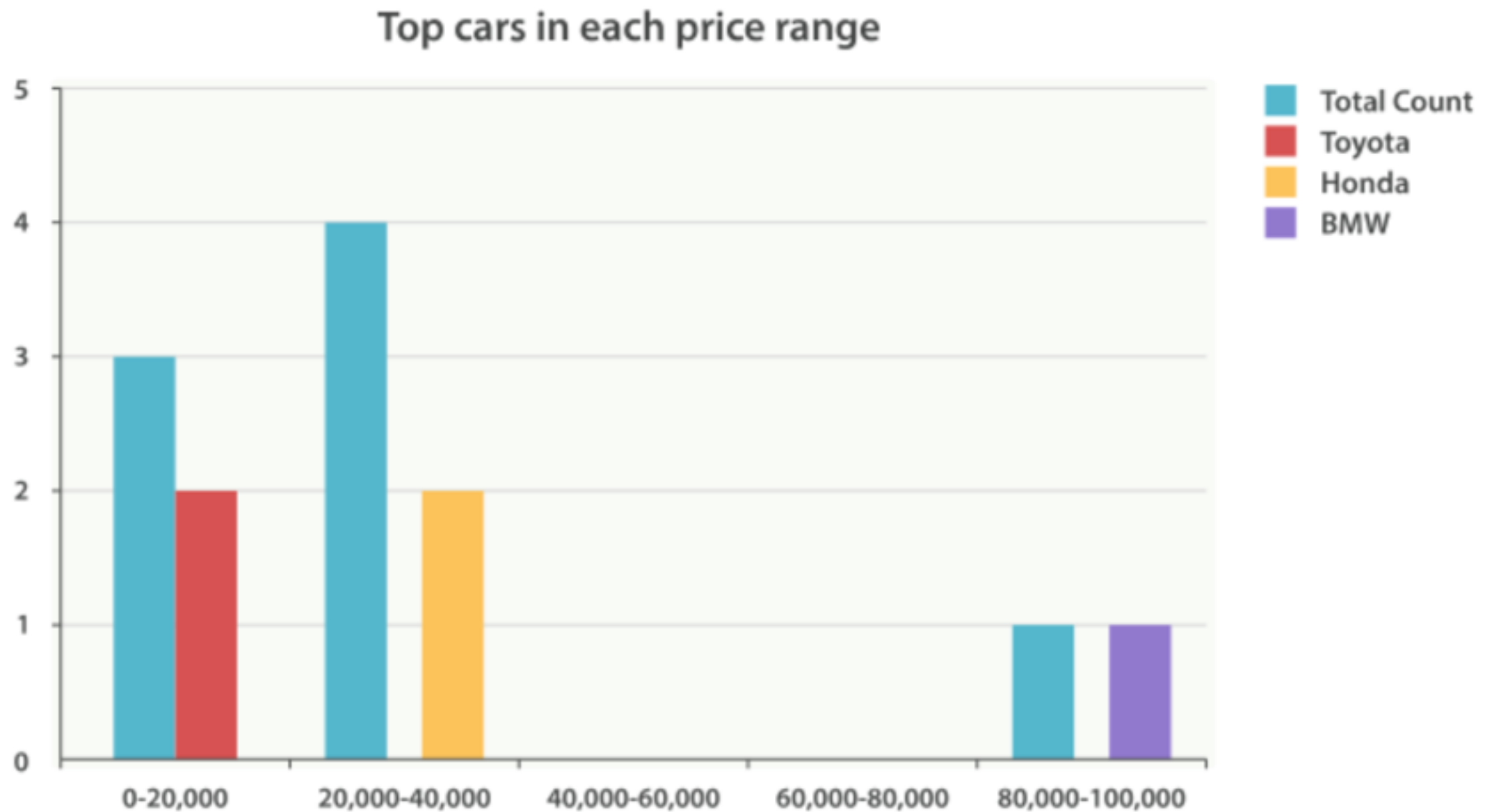# Min/Max price by make

GET /cars/_search?**search_type=count**

...

"make": {

    "terms": {

     "field": "make"

    },

    "**aggs**": {

    "**min_price**": {

     "min": { "field": "price"}},

    "**max_price**" : {

     "max": { "field": "price"}}

}

Result

```json
"buckets": [
    {
        "key": "red",
        "doc_count": 4,
        "avg_price": {
            "value": 32500
        },
        "make": {
            "doc_count_error_upper_bound": 0,
            "sum_other_doc_count": 0,
            "buckets": [
                {
                    "key": "honda",
                    "doc_count": 3,
                    "max_price": {
                        "value": 20000
                    },
                    "min_price": {
                        "value": 10000
                    }
                },
```
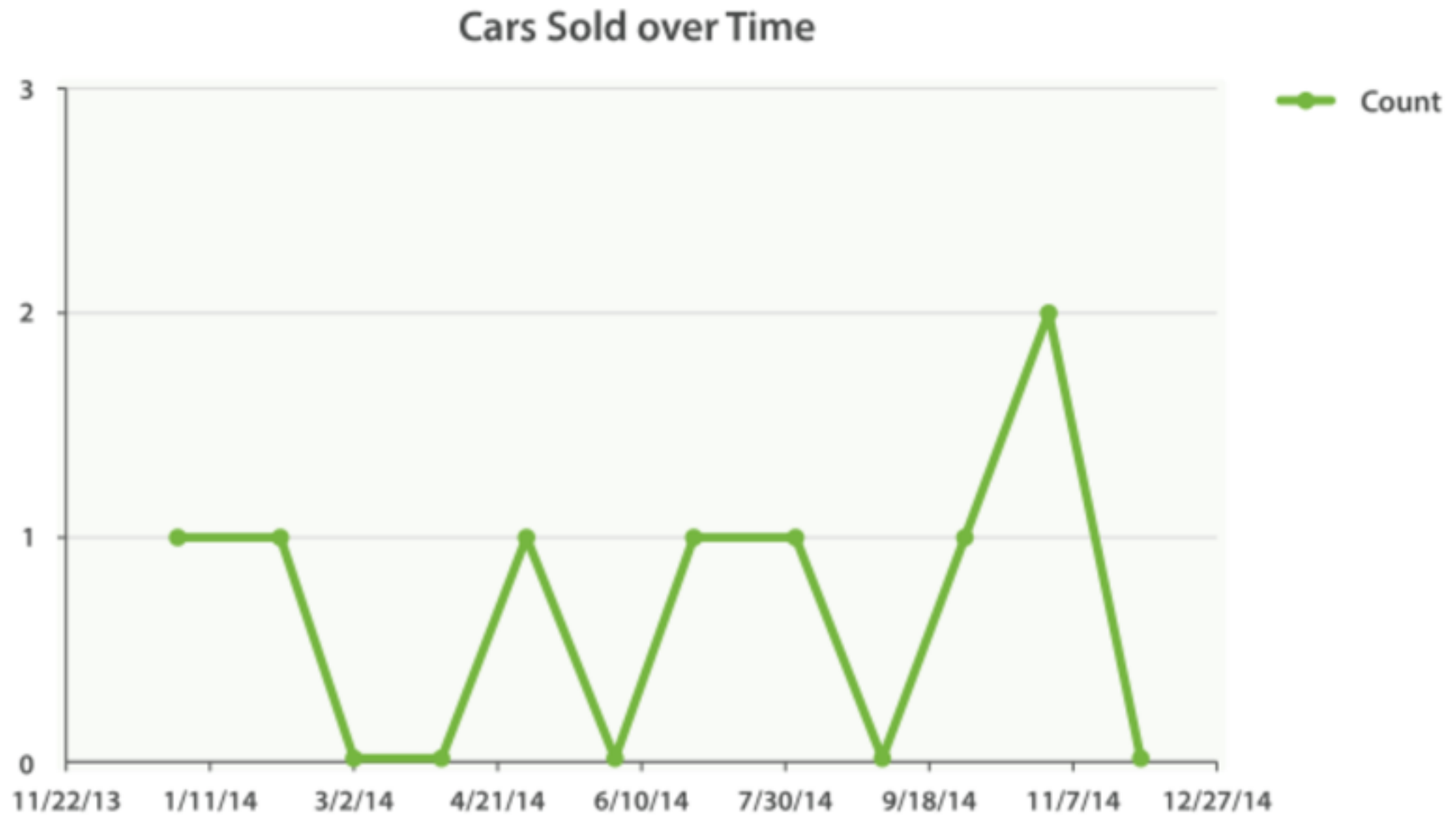
Workshop

ต้องการแสดงกราฟแบบนี้ล่ะ ?

Top cars in each price range

Workshop

ต้องการแสดงกราฟแบบนี้ล่ะ ?

Cars Sold over Time

Date histogram

```
GET /cars/_search?search_type=count
{
  "aggs": {
    "sold": {
      "date_histogram": {
        "field": "sold",
        "interval": "month"
      }
    }
  }
}
```

Problem ?

```
"aggregations": {
    "sold": {
        "buckets": [
            {
                "key_as_string": "2014-01-01",
                "key": 1388534400000,
                "doc_count": 1
            },
            {
                "key_as_string": "2014-02-01",
                "key": 1391212800000,
                "doc_count": 1
            },
            {
                "key_as_string": "2014-05-01",
                "key": 1398902400000,
                "doc_count": 1
            },
            {
                "key_as_string": "2014-07-01",
                "key": 1404172800000,
                "doc_count": 1
            },
```

Problem ?

```
"aggregations": {
    "sold": {
        "buckets": [
            {
                "key_as_string": "2014-01-01",
                "key": 1388534400000,
                "doc_count": 1
            },
            {
                "key_as_string": "2014-02-01",
                "key": 1391212800000,
                "doc_count": 1
            },
            {
                "key_as_string": "2014-05-01",
                "key": 1398902400000,
                "doc_count": 1
            },
            {
                "key_as_string": "2014-07-01",
                "key": 1404172800000,
                "doc_count": 1
            },
```

Return empty bucket

```
GET /cars/_search?search_type=count
{
  "aggs": {
    "sold": {
      "date_histogram": {
        "field": "sold",
        "interval": "month",
        "format": "yyyy-MM-dd",
        "min_doc_count": 0
      }
}}}
```

Result

```
"buckets": [
    {
        "key_as_string": "2014-01-01",
        "key": 1388534400000,
        "doc_count": 1
    },
    {
        "key_as_string": "2014-02-01",
        "key": 1391212800000,
        "doc_count": 1
    },
    {
        "key_as_string": "2014-03-01",
        "key": 1393632000000,
        "doc_count": 0
    },
    {
        "key_as_string": "2014-04-01",
        "key": 1396310400000,
        "doc_count": 0
    },
    {
        "key_as_string": "2014-05-01",
        "key": 1398902400000,
        "doc_count": 1
    },
```

Requirement

ถ้าอยากได้ข้อมูลทุกเดือนล่ะ ?

Return 12 months

```
GET /cars/_search?search_type=count
{
  "aggs": {
    "sold": {
      "date_histogram": {
        "field": "sold",
        "interval": "month",
        "format": "yyyy-MM-dd",
        "min_doc_count": 0,
        "extended_bounds" : {
          "min" : "2014-01-01",
          "max" : "2014-12-31"
        }
      }}}}
```