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

```
"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"}}

      }
```
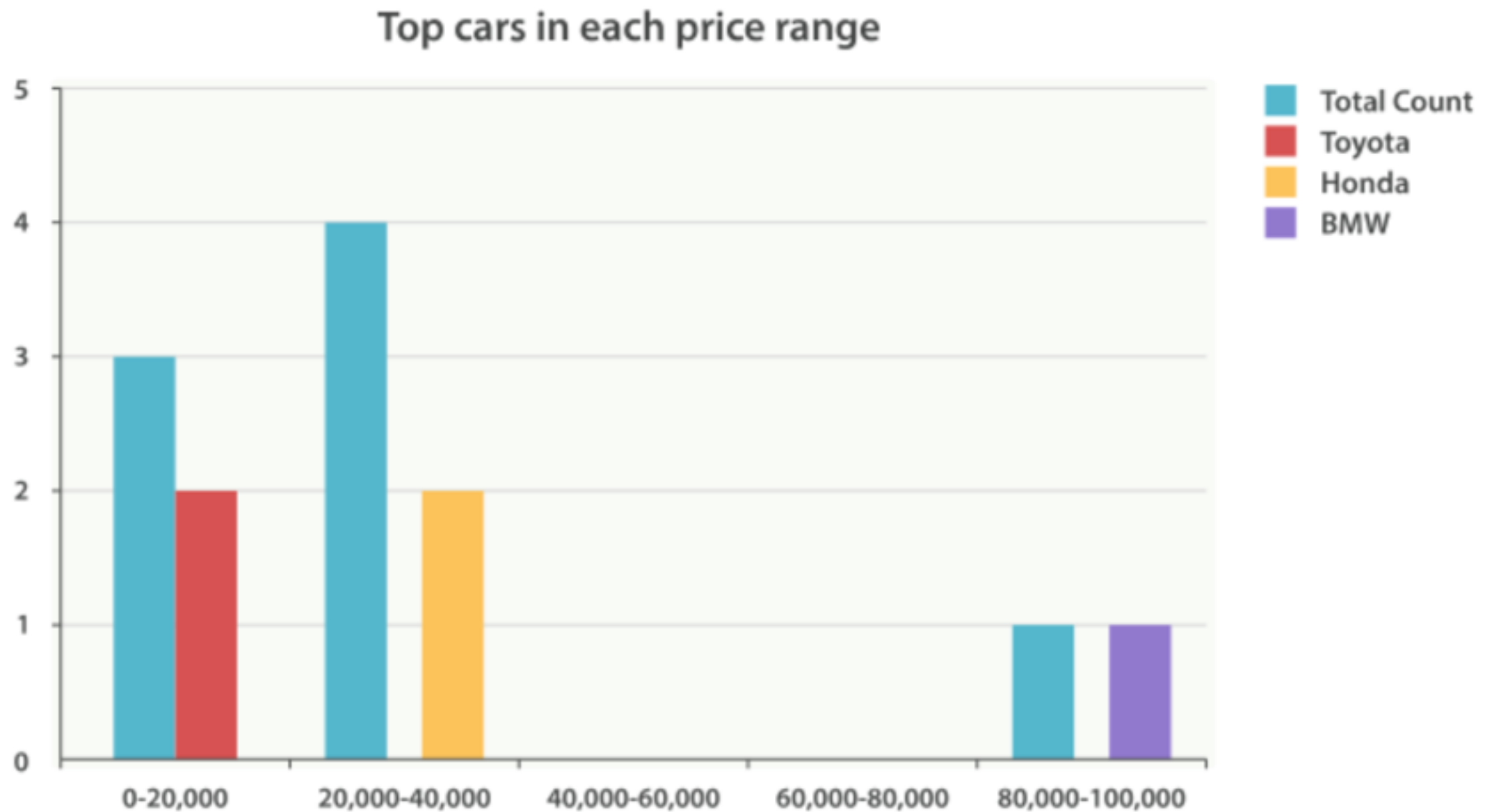
Result

```
"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
               }
            },
```
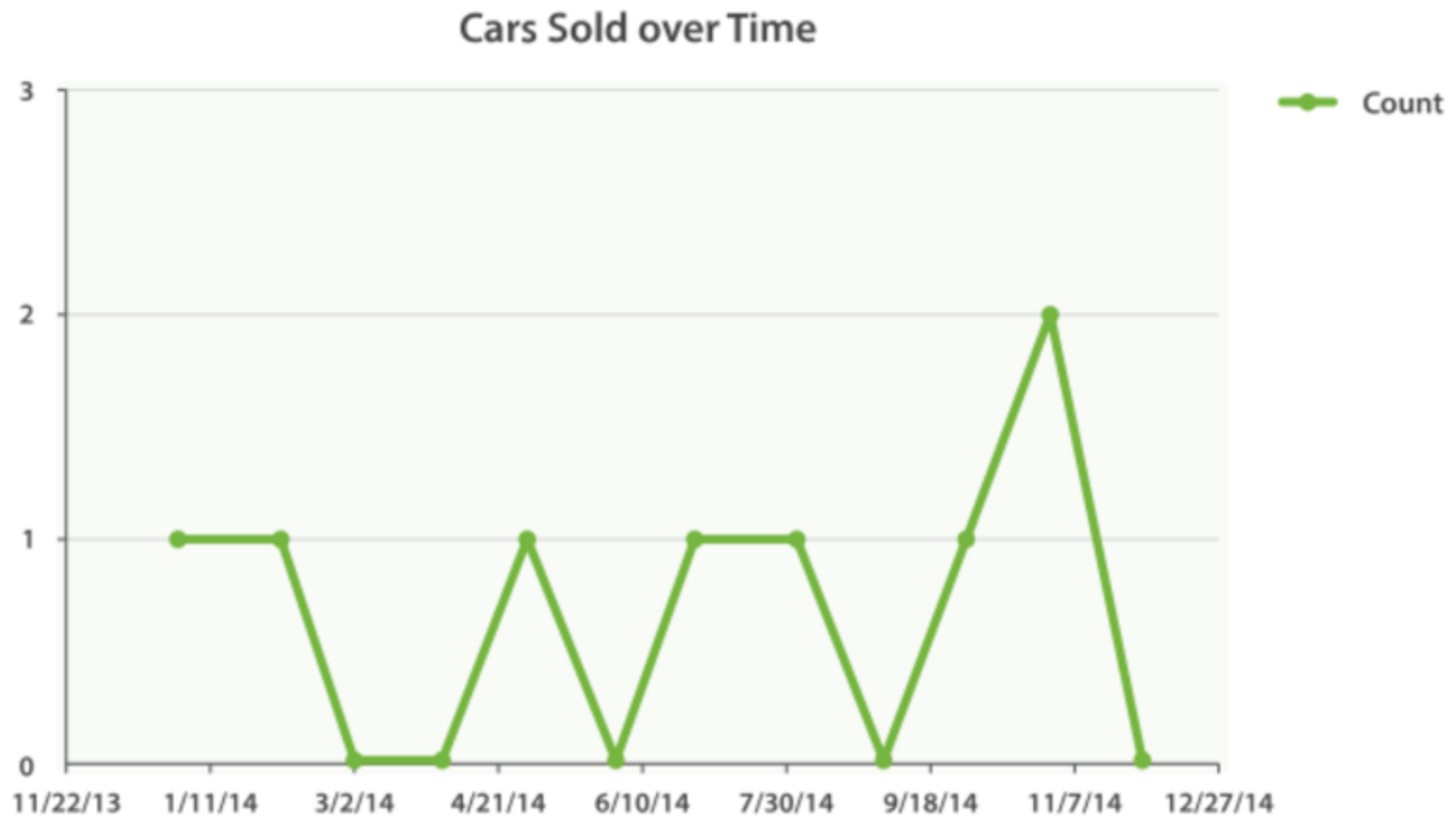
Workshop

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

```json
"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"
       }
     }}}}
```