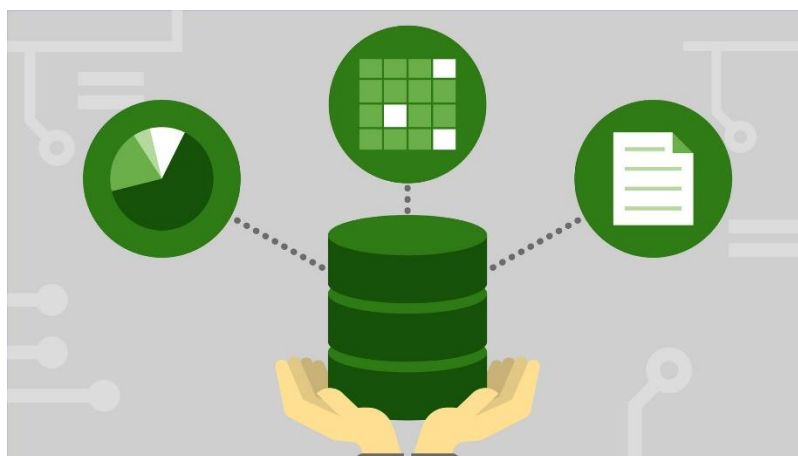


به نام خدا



دانشگاه تهران  
پردیس دانشکده‌های فنی  
دانشکده برق و کامپیوتر



## آزمایشگاه پایگاه داده

دستورکار شماره ۷

شماره دانشجویی

۸۱۰۱۹۶۴۴۳

اردیبهشت ۱۴۰۰

هومان چمنی

## گزارش فعالیت‌های انجام شده

بخش اول (مطالب سایت):

ورود داده:

بخش اول و دوم:

```

1 PUT /movies/_doc/1
2 {
3   "title": "The Godfather",
4   "director": "Francis Ford Coppola",
5   "year": 1972
6 }

```

```

1 {
2   "_index": "movies",
3   "_type": "_doc",
4   "_id": "1",
5   "_version": 2,
6   "result": "updated",
7   "_shards": {
8     "total": 2,
9     "successful": 1,
10    "failed": 0
11  },
12  "_seq_no": 1,
13  "_primary_term": 1
14 }
15

```

بخش سوم:

```

1 POST /movies/_doc
2 {
3   "title": "The Godfather",
4   "director": "Francis Ford Coppola",
5   "year": 1972
6 }

```

```

1 {
2   "_index": "movies",
3   "_type": "_doc",
4   "_id": "OU47ZnkB317mISao8w9y",
5   "_version": 1,
6   "result": "created",
7   "_shards": {
8     "total": 2,
9     "successful": 1,
10    "failed": 0
11  },
12  "_seq_no": 2,
13  "_primary_term": 1
14 }
15

```

بخش چهارم:

```

13 "genres": ["Crime", "Drama", "Mystery"]
14 }
15 PUT movies/_doc/4
16 {
17   "title": "Apocalypse Now",
18   "director": "Francis Ford Coppola",
19   "year": 1979,
20   "genres": ["Drama", "War"]
21 }
22 PUT movies/_doc/5
23 {
24   "title": "Kill Bill: Vol. 1",
25   "director": "Quentin Tarantino",
26   "year": 2003,
27   "genres": ["Action", "Crime", "Thriller"]
28 }
29 PUT movies/_doc/6
30 {
31   "title": "The Assassination of Jesse James by the Coward Robert Ford",
32   "director": "Andrew Dominik",
33   "year": 2007,
34   "genres": ["Biography", "Crime", "Drama"]
35 }

```

```

1 {
2   "_index": "movies",
3   "_type": "_doc",
4   "_id": "6",
5   "_version": 1,
6   "result": "created",
7   "_shards": {
8     "total": 2,
9     "successful": 1,
10    "failed": 0
11  },
12  "_seq_no": 7,
13  "_primary_term": 1
14 }
15

```

## جستجو و بازیابی اطلاعات:

```
Console Search Profiler Grok Debugger Painless Lab BETA

History Settings Help

1 GET /movies/_doc/1 200 - OK 14 ms

1 {
  "_index" : "movies",
  "_type" : "_doc",
  "_id" : "1",
  "_version" : 2,
  "_seq_no" : 1,
  "_primary_term" : 1,
  "found" : true,
  "_source" : {
    "title" : "The Godfather",
    "director" : "Francis Ford Coppola",
    "year" : 1972
  }
}
```

در صورت موجود نبودن آیدی مورد نظر:

```
Console Search Profiler Grok Debugger Painless Lab BETA

History Settings Help

1 GET /movies/_doc/12 404 - Not Found 27 ms

1 {
  "_index" : "movies",
  "_type" : "_doc",
  "_id" : "12",
  "found" : false
}
```

جستجو به کمک query\_string:

```
1 POST movies/movie/_search
2 {
3   "query": {
4     "query_string": {
5       "query": "kill"
6     }
7   }
8 }
```

```

1 1 #! [types removal] Specifying types in search requests is deprecated.
2 {
3   "took" : 0,
4   "timed_out" : false,
5   "_shards" : {
6     "total" : 1,
7     "successful" : 1,
8     "skipped" : 0,
9     "failed" : 0
10  },
11  "hits" : {
12    "total" : {
13      "value" : 2,
14      "relation" : "eq"
15    },
16    "max_score" : 1.1457903,
17    "hits" : [
18      {
19        "_index" : "movies",
20        "_type" : "movie",
21        "_id" : "3",
22        "_score" : 1.1457903,
23        "_source" : {
24          "title" : "To Kill a Mockingbird",
25          "director" : "Robert Mulligan",
26          "year" : 1962,
27          "genres" : [
28            "Crime",
29            "Drama",
30            "Mystery"
31          ]
32        }
33      },
34      {
35        "_index" : "movies",
36        "_type" : "movie",
37        "_id" : "5",
38        "_score" : 1.1457903,
39        "_source" : {
40          "title" : "Kill Bill: Vol. 1",
41          "director" : "Quentin Tarantino",
42          "year" : 2003,
43          "genres" : [
44            "Action",
45            "Crime",
46            "Thriller"
47          ]
48        }
49      }
50    ]
51  }
52 }
53

```

```

1  POST /_search
2  {
3    "query": {
4      "query_string": {
5        "query": "ford",
6        "fields": ["title"]
7      }
8    }
9  }

```

```

1  #| this request accesses system indices: [.apm-agent-configuration, .apm-custom-link, .kibana_7.12.0_001, .kibana_task_manager_7.12.0_001, .tasks], but in a
   future major version, direct access to system indices will be prevented by default
2  {
3    "took" : 521,
4    "timed_out" : false,
5    "shards" : {
6      "total" : 8,
7      "successful" : 8,
8      "skipped" : 0,
9      "failed" : 0
10   },
11   "hits" : {
12     "total" : {
13       "value" : 2,
14       "relation" : "eq"
15     },
16     "max_score" : 1.3950763,
17     "hits" : [
18       {
19         "_index" : "movies",
20         "_type" : "movie",
21         "_id" : "7",
22         "_score" : 1.3950763,
23         "_source" : {
24           "title" : "Ford versus Ferrari",
25           "director" : "Akbar Allstart",
26           "year" : 2017,
27           "genres" : [
28             "Adventure",
29             "Racing",
30             "Drama"
31           ]
32         }
33       },
34       {
35         "_index" : "movies",
36         "_type" : "movie",
37         "_id" : "6",
38         "_score" : 0.76163626,
39         "_source" : {
40           "title" : "The Assassination of Jesse James by the Coward Robert Ford",
41           "director" : "Andrew Dominik",
42           "year" : 2007,
43           "genres" : [
44             "Biography",
45             "Crime",
46             "Drama"
47           ]
48         }
49       }
50     ]
51   }
52 }

```

مدل خلاصه شده‌ی کووری بالا :

```

1  POST /_search
2  {
3    "query": {
4      "query_string" : {"query" : "title:ford"}
5    }
6  }

```

```

1  #! this request accesses system indices: [.apm-agent-configuration, .apm-custom-link, .kibana_7.12.0_001, .kibana_task_manager_7.12.0_001, .tasks], but in a
   future major version, direct access to system indices will be prevented by default
2  {
3    "took" : 1,
4    "timed_out" : false,
5    "_shards" : {
6      "total" : 8,
7      "successful" : 8,
8      "skipped" : 0,
9      "failed" : 0
10   },
11   "hits" : {
12     "total" : {
13       "value" : 2,
14       "relation" : "eq"
15     },
16     "max_score" : 1.3950763,
17     "hits" : [
18       {
19         "_index" : "movies",
20         "_type" : "movie",
21         "_id" : "7",
22         "_score" : 1.3950763,
23         "_source" : {
24           "title" : "Ford versus Ferrari",
25           "director" : "Akbar Allstart",
26           "year" : 2017,
27           "genres" : [
28             "Adventure",
29             "Racing",
30             "Drama"
31           ]
32         }
33       },
34       {
35         "_index" : "movies",
36         "_type" : "movie",
37         "_id" : "6",
38         "_score" : 0.76163626,
39         "_source" : {
40           "title" : "The Assassination of Jesse James by the Coward Robert Ford",
41           "director" : "Andrew Dominik",
42           "year" : 2007,
43           "genres" : [
44             "Biography",
45             "Crime",
46             "Drama"
47           ]
48         }
49       }
50     ]
51   }
52 }
53

```

```

10  POST /_search
11  {
12    "query": {
13      "query_string" : {"query" : "title:ford OR kill"}
14    }
15  }

```

```

1 | This request accesses system indices: [.apm-agent-configuration, .apm-custom-link, .kibana_7.12.0_001, .kibana_task_manager_7.12.0_001, .tasks], but in a future major version, direct access to
  | system indices will be prevented by default
2 {
3   "took": 14,
4   "timed_out": false,
5   "shards": {
6     "total": 8,
7     "successful": 8,
8     "skipped": 0,
9     "failed": 0
10  },
11  "hits": {
12    "total": {
13      "value": 4,
14      "relation": "eq"
15    },
16    "max_score": 1.3950763,
17    "hits": [
18      {
19        "_index": "movies",
20        "_type": "movie",
21        "_id": "7",
22        "_score": 1.3950763,
23        "_source": {
24          "title": "Ford versus Ferrari",
25          "director": "Akbar Allstart",
26          "year": 2017,
27          "genres": [
28            "Adventure",
29            "Racing",
30            "Drama"
31          ]
32        },
33      },
34      {
35        "_index": "movies",
36        "_type": "movie",
37        "_id": "3",
38        "_score": 1.2469268,
39        "_source": {
40          "title": "To Kill a Mockingbird",
41          "director": "Robert Mulligan",
42          "year": 1962,
43          "genres": [
44            "Crime",
45            "Drama",
46            "Mystery"
47          ]
48        },
49      },
50      {
51        "_index": "movies",
52        "_type": "movie",
53        "_id": "5",
54        "_score": 1.2469268,
55        "_source": {
56          "title": "Kill Bill: Vol. 1",
57          "director": "Quentin Tarantino",
58          "year": 2003,
59          "genres": [
60            "Action",
61            "Crime",
62            "Thriller"
63          ]
64        },
65      },
66      {
67        "_index": "movies",
68        "_type": "movie",
69        "_id": "6",
70        "_score": 0.76163626,
71        "_source": {
72          "title": "The Assassination of Jesse James by the Coward Robert Ford",
73          "director": "Andrew Dominik",
74          "year": 2007,
75          "genres": [
76            "Biography",
77            "Crime",
78            "Drama"
79          ]
80        },
81      },
82    ]
83  }
84 }
85

```

```

8 POST /_search
9 {
10   "query": {
11     "query_string": {"query": "(title:kill) AND (director:Tarantino)"}
12   }
13 }

```

```

1  #! this request accesses system indices: [.apm-agent-configuration, .apm-custom-link, .kibana_7.12.0_001, .kibana_task_manager_7.12.0_001, .tasks], but in a
   future major version, direct access to system indices will be prevented by default
2  {
3    "took" : 388,
4    "timed_out" : false,
5    "_shards" : {
6      "total" : 8,
7      "successful" : 8,
8      "skipped" : 0,
9      "failed" : 0
10   },
11   "hits" : {
12     "total" : {
13       "value" : 2,
14       "relation" : "eq"
15     },
16     "max_score" : 2.4974928,
17     "hits" : [
18       {
19         "_index" : "movies",
20         "_type" : "movie",
21         "_id" : "5",
22         "_score" : 2.4974928,
23         "_source" : {
24           "title" : "Kill Bill: Vol. 1",
25           "director" : "Quentin Tarantino",
26           "year" : 2003,
27           "genres" : [
28             "Action",
29             "Crime",
30             "Thriller"
31           ]
32         }
33       },
34       {
35         "_index" : "movies",
36         "_type" : "movie",
37         "_id" : "8",
38         "_score" : 2.4974928,
39         "_source" : {
40           "title" : "Kill Bill: Vol. 2",
41           "director" : "Quentin Tarantino",
42           "year" : 2010,
43           "genres" : [
44             "Action",
45             "Crime",
46             "Thriller"
47           ]
48         }
49       }
50     ]
51   }
52 }
53

```

```

3  POST /_search
4  {
5    "query": {
6      "query_string" : {"query" : "(genres:Drama) AND (year:1962)"}
7    }
8  }

```



```

1  #! this request accesses system indices: [.apm-agent-configuration, .apm-custom-link, .kibana_7.12.0_001, .kibana_task_manager_7.12.0_001, .tasks], but in a
   future major version, direct access to system indices will be prevented by default
2  {
3    "took" : 2,
4    "timed_out" : false,
5    "_shards" : {
6      "total" : 8,
7      "successful" : 8,
8      "skipped" : 0,
9      "failed" : 0
10   },
11   "hits" : {
12     "total" : {
13       "value" : 2,
14       "relation" : "eq"
15     },
16     "max_score" : 1.367183,
17     "hits" : [
18       {
19         "_index" : "movies",
20         "_type" : "movie",
21         "_id" : "2",
22         "_score" : 1.367183,
23         "_source" : {
24           "title" : "Lawrence of Arabia",
25           "director" : "David Lean",
26           "year" : 1962,
27           "genres" : [
28             "Adventure",
29             "Biography",
30             "Drama"
31           ]
32         }
33       },
34       {
35         "_index" : "movies",
36         "_type" : "movie",
37         "_id" : "3",
38         "_score" : 1.367183,
39         "_source" : {
40           "title" : "To Kill a Mockingbird",
41           "director" : "Robert Mulligan",
42           "year" : 1962,
43           "genres" : [
44             "Crime",
45             "Drama",
46             "Mystery"
47           ]
48         }
49       }
50     ]
51   }
52 }

```

```

1  POST /_search
2  {
3    "query": {
4      "query_string" : {"query" : "(genres:Drama) AND (year:[* TO 2005] )"}
5    }
6  }

```

```

200 - OK 19 ms
1 #! this request accesses system indices: [.apm-agent-configuration, .apm-custom-link, .kibana_7.12.0_001, .kibana_task_manager_7.12.0_001, .tasks], but in a
future major version, direct access to system indices will be prevented by default
2 {
3   "took" : 2,
4   "timed_out" : false,
5   "shards" : {
6     "total" : 8,
7     "successful" : 8,
8     "skipped" : 0,
9     "failed" : 0
10  },
11  "hits" : {
12    "total" : {
13      "value" : 3,
14      "relation" : "eq"
15    },
16    "max_score" : 1.4271117,
17    "hits" : [
18      {
19        "_index" : "movies",
20        "_type" : "movie",
21        "_id" : "4",
22        "_score" : 1.4271117,
23        "_source" : {
24          "title" : "Apocalypse Now",
25          "director" : "Francis Ford Coppola",
26          "year" : 1979,
27          "genres" : [
28            "Drama",
29            "War"
30          ]
31        }
32      },
33      {
34        "_index" : "movies",
35        "_type" : "movie",
36        "_id" : "2",
37        "_score" : 1.367183,
38        "_source" : {
39          "title" : "Lawrence of Arabia",
40          "director" : "David Lean",
41          "year" : 1962,
42          "genres" : [
43            "Adventure",
44            "Biography",
45            "Drama"
46          ]
47        }
48      },
49      {
50        "_index" : "movies",
51        "_type" : "movie",
52        "_id" : "3",
53        "_score" : 1.367183,
54        "_source" : {
55          "title" : "To Kill a Mockingbird",
56          "director" : "Robert Mulligan",
57          "year" : 1962,
58          "genres" : [
59            "Crime",
60            "Drama",
61            "Mystery"
62          ]
63        }
64      }
65    ]
66  }
67 }

```

```

3 POST /_search
9 {
0   "query": {
1     "query_string" : {"query" : "(genres:Drama) OR (title:kill)"}
2   }
3 }

```

```

200 - OK 22 ms
1 #! this request accesses system indices: [.apm-agent-configuration, .apm-custom-link, .kibana_7.12.0_001, .kibana_task_manager_7.12.0_001, .tasks], but in
  a future major version, direct access to system indices will be prevented by default
2 {
3   "took" : 1,
4   "timed_out" : false,
5   "shards" : {
6     "total" : 8,
7     "successful" : 8,
8     "skipped" : 0,
9     "failed" : 0
10  },
11  "hits" : {
12    "total" : {
13      "value" : 7,
14      "relation" : "eq"
15    },
16    "max_score" : 1.3923354,
17    "hits" : [
18      {
19        "_index" : "movies",
20        "_type" : "movie",
21        "_id" : "3",
22        "_score" : 1.3923354,
23        "_source" : {
24          "title" : "To Kill a Mockingbird",
25          "director" : "Robert Mulligan",
26          "year" : 1962,
27          "genres" : [
28            "Crime",
29            "Drama",
30            "Mystery"
31          ]
32        }
33      },
34      {
35        "_index" : "movies",
36        "_type" : "movie",
37        "_id" : "5",
38        "_score" : 1.0251526,
39        "_source" : {
40          "title" : "Kill Bill: Vol. 1",
41          "director" : "Quentin Tarantino",
42          "year" : 2003,
43          "genres" : [
44            "Action",
45            "Crime",
46            "Thriller"
47          ]
48        }
49      },
50      {
51        "_index" : "movies",
52        "_type" : "movie",
53        "_id" : "8",
54        "_score" : 1.0251526,
55        "_source" : {
56          "title" : "Kill Bill: Vol. 2",
57          "director" : "Quentin Tarantino",
58          "year" : 2010,
59          "genres" : [
60            "Action",
61            "Crime",
62            "Thriller"
63          ]
64        }
65      },
66      {
67        "_index" : "movies",
68        "_type" : "movie"
69      }
70    ]
71  }
72 }

```

POST /\_search

```

{
  "query": {
    "query_string" : {"query" : "(genres:Drama) OR (title:kill^2)"}
  }
}

```

```

200 - OK 22 ms
#! this request accesses system indices: [.apm-agent-configuration, .apm-custom-link, .kibana_7.12.0_001, .kibana_task_manager_7.12.0_001, .tasks], but in
a future major version, direct access to system indices will be prevented by default
{
  "took": 2,
  "timed_out": false,
  "_shards": {
    "total": 8,
    "successful": 8,
    "skipped": 0,
    "failed": 0
  },
  "hits": {
    "total": {
      "value": 7,
      "relation": "eq"
    },
    "max_score": 2.417488,
    "hits": [
      {
        "_index": "movies",
        "_type": "movie",
        "_id": "3",
        "_score": 2.417488,
        "_source": {
          "title": "To Kill a Mockingbird",
          "director": "Robert Mulligan",
          "year": 1962,
          "genres": [
            "Crime",
            "Drama",
            "Mystery"
          ]
        }
      },
      {
        "_index": "movies",
        "_type": "movie",
        "_id": "5",
        "_score": 2.0503051,
        "_source": {
          "title": "Kill Bill: Vol. 1",
          "director": "Quentin Tarantino",
          "year": 2003,
          "genres": [
            "Action",
            "Crime",
            "Thriller"
          ]
        }
      },
      {
        "_index": "movies",
        "_type": "movie",
        "_id": "8",
        "_score": 2.0503051,
        "_source": {
          "title": "Kill Bill: Vol. 2",
          "director": "Quentin Tarantino",
          "year": 2010,
          "genres": [
            "Action",
            "Crime",
            "Thriller"
          ]
        }
      },
      {
        "_index": "movies",
        "_type": "movie"
      }
    ]
  }
}

```

ساخت یک درخت جستجو:

```

17
18 POST /movies/movie/_search
19 {
20   "query": {
21     "match": {
22       "genres": "drama"
23     }
24   }
25 }

```

```

1  #! [types removal] Specifying types in search requests is deprecated.
2  {
3    "took": 1,
4    "timed_out": false,
5    "_shards": {
6      "total": 1,
7      "successful": 1,
8      "skipped": 0,
9      "failed": 0
10   },
11   "hits": {
12     "total": {
13       "value": 5,
14       "relation": "eq"
15     },
16     "max_score": 0.42711172,
17     "hits": [
18       {
19         "_index": "movies",
20         "_type": "movie",
21         "_id": "4",
22         "_score": 0.42711172,
23         "_source": {
24           "title": "Apocalypse Now",
25           "director": "Francis Ford Coppola",
26           "year": 1979,
27           "genres": [
28             "Drama",
29             "War"
30           ]
31         }
32       },
33       {
34         "_index": "movies",
35         "_type": "movie",
36         "_id": "2",
37         "_score": 0.3671829,
38         "_source": {
39           "title": "Lawrence of Arabia",
40           "director": "David Lean",
41           "year": 1962,
42           "genres": [
43             "Adventure",
44             "Biography",
45             "Drama"
46           ]
47         }
48       },
49       {
50         "_index": "movies",
51         "_type": "movie",
52         "_id": "3",
53         "_score": 0.3671829,
54         "_source": {
55           "title": "To Kill a Mockingbird",
56           "director": "Robert Mulligan",
57           "year": 1962,
58           "genres": [
59             "Crime",
60             "Drama",
61             "Mystery"
62           ]
63         }
64       },
65       {
66         "_index": "movies",
67         "_type": "movie",
68         "_id": "6",
69         "_score": 0.3671829

```

```

18  POST /movies/_search
19  {
20    "query": {
21      "match": {
22        "genres": {
23          "query": "drama"
24        }
25      }
26    }
27  }

```

```

1 {
2   "took" : 0,
3   "timed_out" : false,
4   "shards" : {
5     "total" : 1,
6     "successful" : 1,
7     "skipped" : 0,
8     "failed" : 0
9   },
10  "hits" : {
11    "total" : {
12      "value" : 5,
13      "relation" : "eq"
14    },
15    "max_score" : 0.42711172,
16    "hits" : [
17      {
18        "_index" : "movies",
19        "_type" : "movie",
20        "_id" : "4",
21        "_score" : 0.42711172,
22        "_source" : {
23          "title" : "Apocalypse Now",
24          "director" : "Francis Ford Coppola",
25          "year" : 1979,
26          "genres" : [
27            "Drama",
28            "War"
29          ]
30        }
31      },
32      {
33        "_index" : "movies",
34        "_type" : "movie",
35        "_id" : "2",
36        "_score" : 0.3671829,
37        "_source" : {
38          "title" : "Lawrence of Arabia",
39          "director" : "David Lean",
40          "year" : 1962,
41          "genres" : [
42            "Adventure",
43            "Biography",
44            "Drama"
45          ]
46        }
47      },
48      {
49        "_index" : "movies",
50        "_type" : "movie",
51        "_id" : "3",
52        "_score" : 0.3671829,
53        "_source" : {
54          "title" : "To Kill a Mockingbird",
55          "director" : "Robert Mulligan",
56          "year" : 1962,
57          "genres" : [
58            "Crime",
59            "Drama",
60            "Mystery"
61          ]
62        }
63      },
64      {
65        "_index" : "movies",
66        "_type" : "movie",
67        "_id" : "6",
68        "_score" : 0.3671829,
69        "_source" : {

```

```

17
18 POST movies/_search
19 {
20   "query": {
21     "match": {
22       "title": {
23         "query": "Kill Bill",
24         "operator": "or"
25       }
26     }
27   }
28 }

```

```

1 {
2   "took" : 1,
3   "timed_out" : false,
4   "_shards" : {
5     "total" : 1,
6     "successful" : 1,
7     "skipped" : 0,
8     "failed" : 0
9   },
10  "hits" : {
11    "total" : {
12      "value" : 3,
13      "relation" : "eq"
14    },
15    "max_score" : 2.3788707,
16    "hits" : [
17      {
18        "_index" : "movies",
19        "_type" : "movie",
20        "_id" : "5",
21        "_score" : 2.3788707,
22        "_source" : {
23          "title" : "Kill Bill: Vol. 1",
24          "director" : "Quentin Tarantino",
25          "year" : 2003,
26          "genres" : [
27            "Action",
28            "Crime",
29            "Thriller"
30          ]
31        }
32      },
33      {
34        "_index" : "movies",
35        "_type" : "movie",
36        "_id" : "8",
37        "_score" : 2.3788707,
38        "_source" : {
39          "title" : "Kill Bill: Vol. 2",
40          "director" : "Quentin Tarantino",
41          "year" : 2010,
42          "genres" : [
43            "Action",
44            "Crime",
45            "Thriller"
46          ]
47        }
48      },
49      {
50        "_index" : "movies",
51        "_type" : "movie",
52        "_id" : "3",
53        "_score" : 1.0251526,
54        "_source" : {
55          "title" : "To Kill a Mockingbird",
56          "director" : "Robert Mulligan",
57          "year" : 1962,
58          "genres" : [
59            "Crime",
60            "Drama",
61            "Mystery"
62          ]
63        }
64      }
65    ]
66  }
67 }
68

```

```

17
18 POST /movies/_search
19 {
20   "query": {
21     "multi_match": {
22       "query": "ford",
23       "fields": [
24         "title^3",
25         "director"
26       ]
27     }
28   }
29 }

```

```

1 {
2   "took" : 1,
3   "timed_out" : false,
4   "_shards" : {
5     "total" : 1,
6     "successful" : 1,
7     "skipped" : 0,
8     "failed" : 0
9   },
10  "hits" : {
11    "total" : {
12      "value" : 5,
13      "relation" : "eq"
14    },
15    "max_score" : 4.541379,
16    "hits" : [
17      {
18        "_index" : "movies",
19        "_type" : "movie",
20        "_id" : "7",
21        "_score" : 4.541379,
22        "_source" : {
23          "title" : "Ford versus Ferrari",
24          "director" : "Akbar Allstart",
25          "year" : 2017,
26          "genres" : [
27            "Adventure",
28            "Racing",
29            "Drama"
30          ]
31        }
32      },
33      {
34        "_index" : "movies",
35        "_type" : "movie",
36        "_id" : "6",
37        "_score" : 2.4847002,
38        "_source" : {
39          "title" : "The Assassination of Jesse James by the Coward Robert Ford",
40          "director" : "Andrew Dominik",
41          "year" : 2007,
42          "genres" : [
43            "Biography",
44            "Crime",
45            "Drama"
46          ]
47        }
48      },
49      {
50        "_index" : "movies",
51        "_type" : "movie",
52        "_id" : "1",
53        "_score" : 0.939957,
54        "_source" : {
55          "title" : "The Godfather",
56          "director" : "Francis Ford Coppola",
57          "year" : 1972
58        }
59      },
60      {
61        "_index" : "movies",
62        "_type" : "movie",
63        "_id" : "OU47Znk8317mI5ao8w9y",
64        "_score" : 0.939957,
65        "_source" : {
66          "title" : "The Godfather",
67          "director" : "Francis Ford Coppola",
68          "year" : 1972
69        }
70      }
71    ]
72  }
73 }

```

```

26 POST /movies/_search
27 {
28   "query": {
29     "bool": {
30       "must": [
31         {
32           "match": {
33             "genres": "drama"
34           }
35         },
36         {
37           "match": {
38             "title": {
39               "query": "kill",
40               "boost": 3
41             }
42           }
43         }
44       ]
45     }
46   }
47 }

```



```

1- {
2   "took" : 721,
3   "timed_out" : false,
4-  "_shards" : {
5     "total" : 1,
6     "successful" : 1,
7     "skipped" : 0,
8     "failed" : 0
9-  },
10-  "hits" : {
11-    "total" : {
12-      "value" : 2,
13-      "relation" : "eq"
14-    },
15-    "max_score" : 3.2261317,
16-    "hits" : [
17-      {
18-        "_index" : "movies",
19-        "_type" : "movie",
20-        "_id" : "9",
21-        "_score" : 3.2261317,
22-        "_source" : {
23-          "title" : "Kill my friend",
24-          "director" : "Steven Taylor",
25-          "year" : 2011,
26-          "genres" : [
27-            "Drama",
28-            "Crime",
29-            "Action"
30-          ]
31-        }
32-      },
33-      {
34-        "_index" : "movies",
35-        "_type" : "movie",
36-        "_id" : "3",
37-        "_score" : 2.915102,
38-        "_source" : {
39-          "title" : "To Kill a Mockingbird",
40-          "director" : "Robert Mulligan",
41-          "year" : 1962,
42-          "genres" : [
43-            "Crime",
44-            "Drama",
45-            "Mystery"
46-          ]
47-        }
48-      }
49-    ]
50-  }
51- }

```

```

--
26 POST /movies/_search
27 {
28   "query": {
29     "bool": {
30       "must": {
31         "bool": {
32           "should": [
33             {
34               "match": {
35                 "title": "ford"
36               }
37             },
38             {
39               "match": {
40                 "title": "kill"
41               }
42             }
43           ]
44         }
45       },
46       "must_not": {
47         "match": {
48           "genres": "Mystery"
49         }
50       }
51     }
52   }
53 }

```

```

1 {
2   "took" : 1,
3   "timed_out" : false,
4   "_shards" : {
5     "total" : 1,
6     "successful" : 1,
7     "skipped" : 0,
8     "failed" : 0
9   },
10  "hits" : {
11    "total" : {
12      "value" : 5,
13      "relation" : "eq"
14    },
15    "max_score" : 1.6058937,
16    "hits" : [
17      {
18        "_index" : "movies",
19        "_type" : "movie",
20        "_id" : "7",
21        "_score" : 1.6058937,
22        "_source" : {
23          "title" : "Ford versus Ferrari",
24          "director" : "Akbar Allstart",
25          "year" : 2017,
26          "genres" : [
27            "Adventure",
28            "Racing",
29            "Drama"
30          ]
31        },
32        "type" : "movie",
33      },
34      {
35        "_index" : "movies",
36        "_type" : "movie",
37        "_id" : "9",
38        "_score" : 0.9687987,
39        "_source" : {
40          "title" : "Kill my friend",
41          "director" : "Steven Taylor",
42          "year" : 2011,
43          "genres" : [
44            "Drama",
45            "Crime",
46            "Action"
47          ]
48        },
49      },
50      {
51        "_index" : "movies",
52        "_type" : "movie",
53        "_id" : "6",
54        "_score" : 0.8732991,
55        "_source" : {
56          "title" : "The Assassination of Jesse James by the Coward Robert Ford",
57          "director" : "Andrew Dominik",
58          "year" : 2007,
59          "genres" : [
60            "Biography",
61            "Crime",
62            "Drama"
63          ]
64        },
65      },
66      {
67        "_index" : "movies",
68        "_type" : "movie",
69        "_id" : "5",
70        "_score" : 0.8651222
71      }
72    ]
73  }
74 }

```

جستجوی فیلدهای غیرمتنی:

```

4 GET /_search
5 {
6   "query": {
7     "term": {
8       "year": {
9         "value": "2003",
10        "boost": 1.0
11      }
12    }
13  }
14 }

```

```

200 - OK 173 ms
1 #! this request accesses system indices: [.apm-agent-configuration, .apm-custom-link, .kibana_7.12.0_001, .kibana_task_manager_7.12.0_001, .tasks], but in a
future major version, direct access to system indices will be prevented by default
2 {
3   "took" : 160,
4   "timed_out" : false,
5   "shards" : {
6     "total" : 8,
7     "successful" : 8,
8     "skipped" : 0,
9     "failed" : 0
10  },
11  "hits" : {
12    "total" : {
13      "value" : 2,
14      "relation" : "eq"
15    },
16    "max_score" : 1.0,
17    "hits" : [
18      {
19        "_index" : "movies",
20        "_type" : "movie",
21        "_id" : "5",
22        "_score" : 1.0,
23        "_source" : {
24          "title" : "Kill Bill: Vol. 1",
25          "director" : "Quentin Tarantino",
26          "year" : 2003,
27          "genres" : [
28            "Action",
29            "Crime",
30            "Thriller"
31          ]
32        }
33      },
34      {
35        "_index" : "movies",
36        "_type" : "movie",
37        "_id" : "10",
38        "_score" : 1.0,
39        "_source" : {
40          "title" : "Lord of the Rings",
41          "director" : "Asghar Tyler",
42          "year" : 2003,
43          "genres" : [
44            "History",
45            "Adventure",
46            "Action"
47          ]
48        }
49      }
50    ]
51  }
52 }

```

اعمال فیلتر در جستجو:

```

34 POST /movies/movie/_search
35 {
36   "query": {
37     "bool": {
38       "must": [
39         {
40           "match": {
41             "title": "kill"
42           }
43         }
44       ],
45       "filter": {
46         "bool": {
47           "must": [
48             {
49               "range": {
50                 "year": {
51                   "gte": 1960
52                 }
53             }
54           ],
55           "term": {
56             "genres": {
57               "value": "drama"
58             }
59           }
60         }
61       ]
62     }
63   }
64 }
65 }
66 }
67 }

```

```

1  #! [types removal] Specifying types in search requests is deprecated.
2  {
3    "took" : 1,
4    "timed_out" : false,
5    "_shards" : {
6      "total" : 1,
7      "successful" : 1,
8      "skipped" : 0,
9      "failed" : 0
10   },
11   "hits" : {
12     "total" : {
13       "value" : 2,
14       "relation" : "eq"
15     },
16     "max_score" : 1.0659131,
17     "hits" : [
18       {
19         "_index" : "movies",
20         "_type" : "movie",
21         "_id" : "9",
22         "_score" : 1.0659131,
23         "_source" : {
24           "title" : "Kill my friend",
25           "director" : "Steven Taylor",
26           "year" : 2011,
27           "genres" : [
28             "Drama",
29             "Crime",
30             "Action"
31           ]
32         }
33       },
34       {
35         "_index" : "movies",
36         "_type" : "movie",
37         "_id" : "3",
38         "_score" : 0.95232296,
39         "_source" : {
40           "title" : "To Kill a Mockingbird",
41           "director" : "Robert Mulligan",
42           "year" : 1962,
43           "genres" : [
44             "Crime",
45             "Drama",
46             "Mystery"
47           ]
48         }
49       }
50     ]
51   }
52 }

```

```

33
34 POST /movies/_search
35 {
36   "query": {
37     "bool": {
38       "must": [
39         {
40           "match": {
41             "title": "kill"
42           }
43         },
44         {
45           "range": {
46             "year": {
47               "gte": 1960
48             }
49           }
50         },
51         {
52           "term": {
53             "genres": {
54               "value": "drama"
55             }
56           }
57         }
58       ]
59     }
60   }
61 }

```

```

1- {
2   "took" : 1,
3   "timed_out" : false,
4   "_shards" : {
5     "total" : 1,
6     "successful" : 1,
7     "skipped" : 0,
8     "failed" : 0
9   },
10  "hits" : {
11    "total" : {
12      "value" : 2,
13      "relation" : "eq"
14    },
15    "max_score" : 2.490023,
16    "hits" : [
17      {
18        "_index" : "movies",
19        "_type" : "movie",
20        "_id" : "9",
21        "_score" : 2.490023,
22        "_source" : {
23          "title" : "Kill my friend",
24          "director" : "Steven Taylor",
25          "year" : 2011,
26          "genres" : [
27            "Drama",
28            "Crime",
29            "Action"
30          ]
31        }
32      },
33      {
34        "_index" : "movies",
35        "_type" : "movie",
36        "_id" : "3",
37        "_score" : 2.376433,
38        "_source" : {
39          "title" : "To Kill a Mockingbird",
40          "director" : "Robert Mulligan",
41          "year" : 1962,
42          "genres" : [
43            "Crime",
44            "Drama",
45            "Mystery"
46          ]
47        }
48      }
49    ]
50  }
51 }

```

```

34 POST movies/_search
35 {
36   "query": {
37     "bool": {
38       "must": [
39         {
40           "range": {
41             "year": {
42               "gte": 2000
43             }
44           },
45         },
46         {
47           "term": {
48             "genres": {
49               "value": "drama"
50             }
51           }
52         }
53       ]
54     }
55   }
56 }

```

```

1- {
2   "took" : 0,
3   "timed_out" : false,
4   "_shards" : {
5     "total" : 1,
6     "successful" : 1,
7     "skipped" : 0,
8     "failed" : 0
9   },
10  "hits" : {
11    "total" : {
12      "value" : 3,
13      "relation" : "eq"
14    },
15    "max_score" : 1.4241099,
16    "hits" : [
17      {
18        "_index" : "movies",
19        "_type" : "movie",
20        "_id" : "6",
21        "_score" : 1.4241099,
22        "_source" : {
23          "title" : "The Assassination of Jesse James by the Coward Robert Ford",
24          "director" : "Andrew Dominik",
25          "year" : 2007,
26          "genres" : [
27            "Biography",
28            "Crime",
29            "Drama"
30          ]
31        },
32      },
33      {
34        "_index" : "movies",
35        "_type" : "movie",
36        "_id" : "7",
37        "_score" : 1.4241099,
38        "_source" : {
39          "title" : "Ford versus Ferrari",
40          "director" : "Akbar Allstart",
41          "year" : 2017,
42          "genres" : [
43            "Adventure",
44            "Racing",
45            "Drama"
46          ]
47        },
48      },
49      {
50        "_index" : "movies",
51        "_type" : "movie",
52        "_id" : "9",
53        "_score" : 1.4241099,
54        "_source" : {
55          "title" : "Kill my friend",
56          "director" : "Steven Taylor",
57          "year" : 2011,
58          "genres" : [
59            "Drama",
60            "Crime",
61            "Action"
62          ]
63        },
64      }
65    ]
66  }
67 }

```

چند دستور کاربردی:

```

POST /movies/_search
{
  "query": {
    "match": {
      "title": {
        "query": "godfater",
        "fuzziness": "AUTO"
      }
    }
  }
}

```

```

1- {
2   "took" : 26,
3   "timed_out" : false,
4-  "shards" : {
5     "total" : 1,
6     "successful" : 1,
7     "skipped" : 0,
8     "failed" : 0
9-  },
10-  "hits" : {
11-    "total" : {
12-      "value" : 2,
13-      "relation" : "eq"
14-    },
15-    "max_score" : 1.6936116,
16-    "hits" : [
17-      {
18-        "_index" : "movies",
19-        "_type" : "movie",
20-        "_id" : "1",
21-        "_score" : 1.6936116,
22-        "_source" : {
23-          "title" : "The Godfather",
24-          "director" : "Francis Ford Coppola",
25-          "year" : 1972
26-        }
27-      },
28-      {
29-        "_index" : "movies",
30-        "_type" : "movie",
31-        "_id" : "OU47ZnkB317mISao8w9y",
32-        "_score" : 1.6936116,
33-        "_source" : {
34-          "title" : "The Godfather",
35-          "director" : "Francis Ford Coppola",
36-          "year" : 1972
37-        }
38-      }
39-    ]
40-  }
41- }

```

```

POST /movies/_search
{
  "query": {
    "match_phrase": {
      "title": {
        "query": "Kill Bill",
        "slop": 2
      }
    }
  }
}

```

```

1 {
2   "took" : 5,
3   "timed_out" : false,
4   "_shards" : {
5     "total" : 1,
6     "successful" : 1,
7     "skipped" : 0,
8     "failed" : 0
9   },
10  "hits" : {
11    "total" : {
12      "value" : 2,
13      "relation" : "eq"
14    },
15    "max_score" : 2.4753494,
16    "hits" : [
17      {
18        "_index" : "movies",
19        "_type" : "movie",
20        "_id" : "5",
21        "_score" : 2.4753494,
22        "_source" : {
23          "title" : "Kill Bill: Vol. 1",
24          "director" : "Quentin Tarantino",
25          "year" : 2003,
26          "genres" : [
27            "Action",
28            "Crime",
29            "Thriller"
30          ]
31        },
32      },
33      {
34        "_index" : "movies",
35        "_type" : "movie",
36        "_id" : "8",
37        "_score" : 2.4753494,
38        "_source" : {
39          "title" : "Kill Bill: Vol. 2",
40          "director" : "Quentin Tarantino",
41          "year" : 2010,
42          "genres" : [
43            "Action",
44            "Crime",
45            "Thriller"
46          ]
47        },
48      }
49    ]
50  }
51 }
52

```

یک اشکال رایج:

```

34 POST movies/movie/_search
35 {
36   "query": {
37     "term": {
38       "director": {
39         "value": "Francis Ford Coppola"
40       }
41     }
42   }
43 }

```



```

200 - OK 18 ms
#! [types removal] Specifying types in search requests is deprecated.
{
  "took" : 0,
  "timed_out" : false,
  "_shards" : {
    "total" : 1,
    "successful" : 1,
    "skipped" : 0,
    "failed" : 0
  },
  "hits" : {
    "total" : {
      "value" : 0,
      "relation" : "eq"
    },
    "max_score" : null,
    "hits" : [ ]
  }
}

```

```

34 PUT /movies/_mapping
35 {
36   "movie": {
37     "properties": {
38       "director": {
39         "type": "text",
40         "fields": {
41           "original": {
42             "type": "keyword"
43           }
44         }
45       }
46     }
47   }
48 }

```

200 - OK 84 ms

```

1 {
2   "acknowledged" : true
3 }
4

```

```
34 GET movies/_search
35 {
36   "query": {
37     "term": {
38       "director.keyword": "Francis Ford Coppola"
39     }
40   }
41 }
```

```
15 "max_score" : 1.2321435,
16 "hits" : [
17   {
18     "_index" : "movies",
19     "_type" : "movie",
20     "_id" : "1",
21     "_score" : 1.2321435,
22     "_source" : {
23       "title" : "The Godfather",
24       "director" : "Francis Ford Coppola",
25       "year" : 1972
26     }
27   },
28   {
29     "_index" : "movies",
30     "_type" : "movie",
31     "_id" : "OU47ZnkB317mISao8w9y",
32     "_score" : 1.2321435,
33     "_source" : {
34       "title" : "The Godfather",
35       "director" : "Francis Ford Coppola",
36       "year" : 1972
37     }
38   },
39   {
40     "_index" : "movies",
41     "_type" : "movie",
42     "_id" : "4",
43     "_score" : 1.2321435,
44     "_source" : {
45       "title" : "Apocalypse Now",
46       "director" : "Francis Ford Coppola",
47       "year" : 1979,
48       "genres" : [
49         "Drama",
50         "War"
51       ]
52     }
53   }
54 ]
```

200 - OK 18 ms

Lab 7 report - Word

## بخش دوم - توییت:

برای جمع‌آوری داده‌ها نیز از نسخه ادیت شده‌ی کدی که در صورت پروژه وجود داشت استفاده شد:

```
In [8]: res = 0
while res < total:
    response = requests.request('GET', url, headers={'User-Agent': 'Chrome/61'})
    if response.status_code == requests.codes.ok:
        data = response.json()['items']
        for d in data:
            d['hashtags'] = find_hashtags(d['content'])
            store_record(elastic_object=es, index_name='twitter', record=d)
            res = es.search(index='twitter', body={'query':{'match_all':{'}}})['hits']['total']['value']
        else:
            print("Response code error: " + str(response.status_code))
            print('Fetched and inserted {} tweets so far'.format(res))
            print('Waiting for {} seconds...'.format(api_sleep))
            time.sleep(api_sleep)

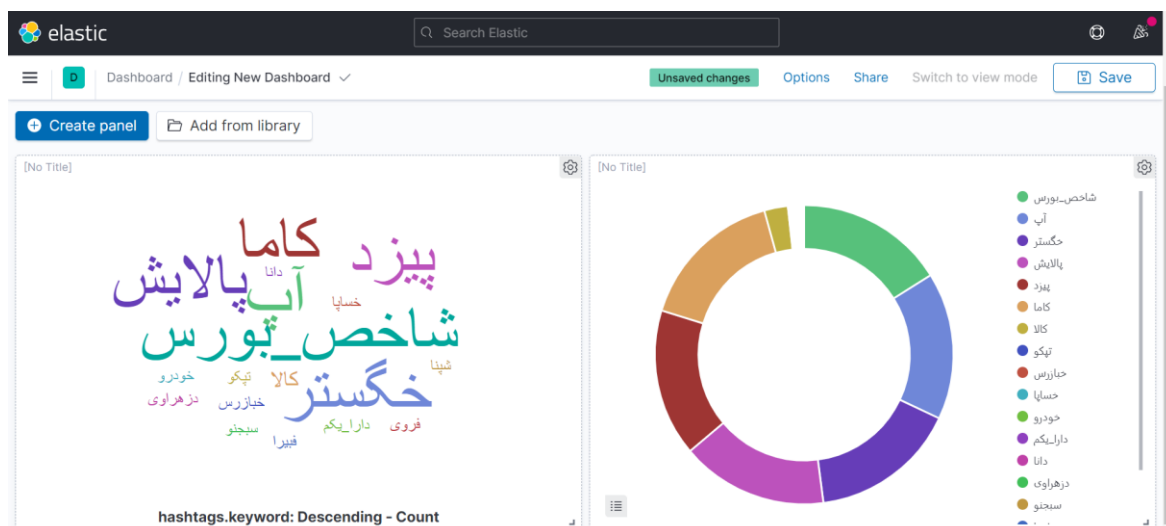
Fetched and inserted 914 tweets so far
Waiting for 1 seconds...
Fetched and inserted 928 tweets so far
Waiting for 1 seconds...
```

پس از ساختن index pattern صفحه زیر قابل مشاهده است :

The screenshot shows the Kibana Index Patterns page for the 'twitter' index. The left sidebar contains navigation links for Ingest, Data, Alerts and Insights, and Kibana. The main content area shows the 'twitter' index pattern with a search bar and a table of fields.

Name	Type	Format	Searchable	Aggregatable	Excluded
_id	string		●	●	
_index	string		●	●	
_score	number				
source	source				

سپس دو داشبورد مد نظر را از روی داده‌ها ساختیم. لازم به ذکر است که چون عمل جمع‌آوری داده‌ها در صبح زود انجام شده است داده‌ها خیلی پراکنده و متنوع نمی‌باشند :



## مشکلات و توضیحات تکمیلی

تعدادی مشکل سر تفاوت ورژن‌های الستیک در مطالب سایت و الستیک کنونی رخ داد که با بروزرسانی مطالب سایت طبق آپدیت‌های منتشر شده قابل حل می‌باشد. همچنین کدی که برای جمع‌آوری داده‌ها از توئیتر داده شده بود می‌توانست بهتر بوده تا بدون نیاز به دیباگ صرفاً آنرا اجرا کرد.

## آنچه آموختم

کلیات دیتابیس Elasticsearch و نحوه کار با آن

زدن کووری در Kibana interface

ساختن داشبورد با کیبانا و الستیک