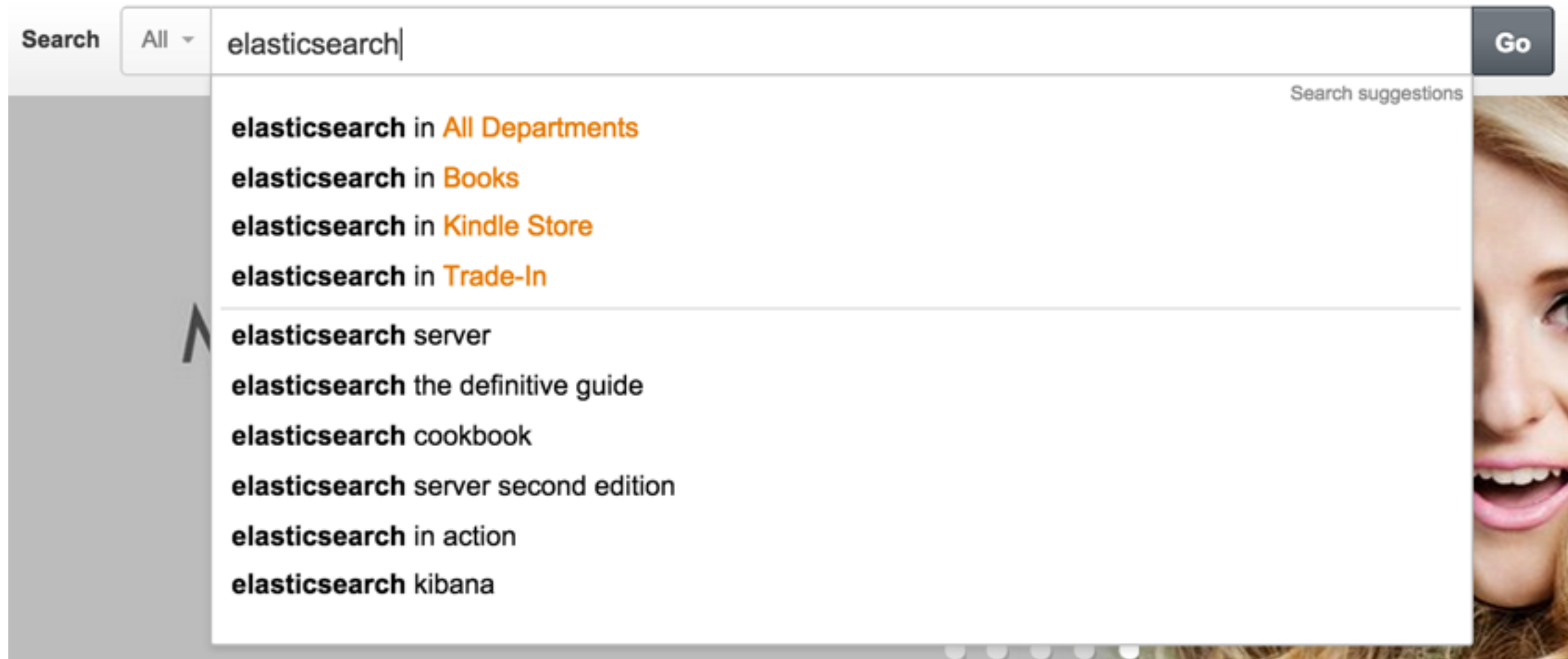




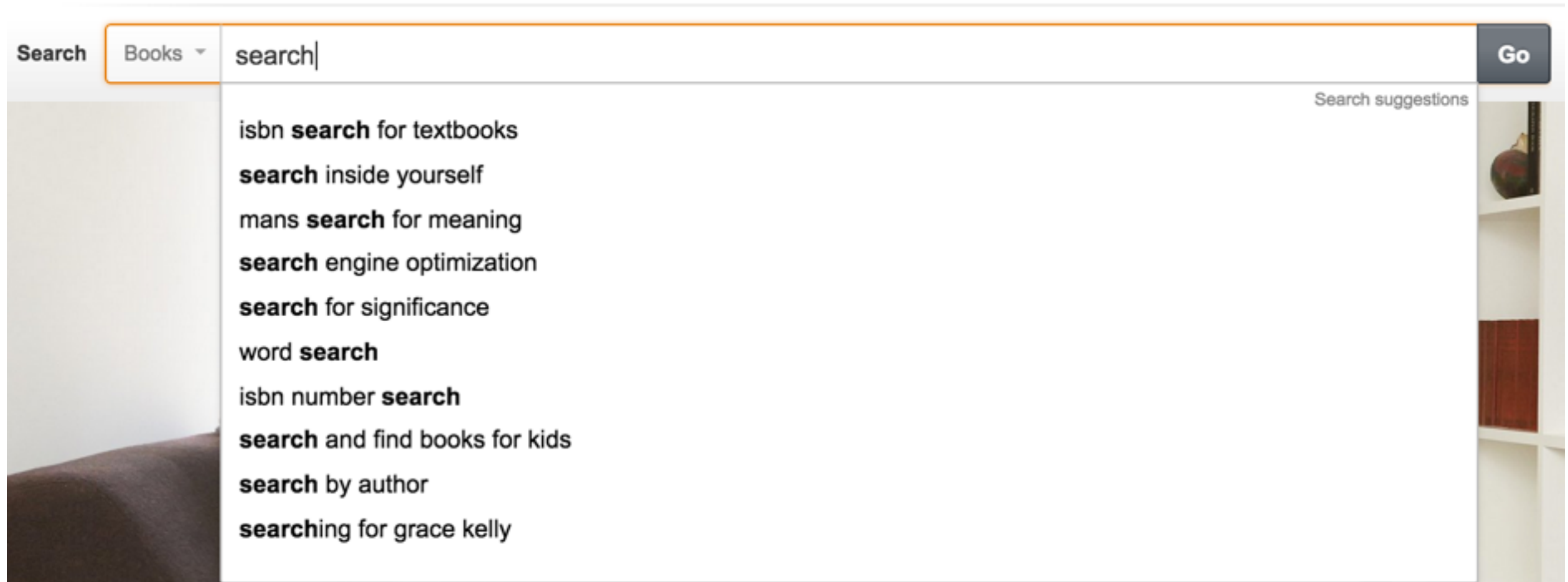
Auto-Suggestion

book_08_suggestion.txt

Auto-suggestion with Elasticsearch



Auto-suggestion with Elasticsearch

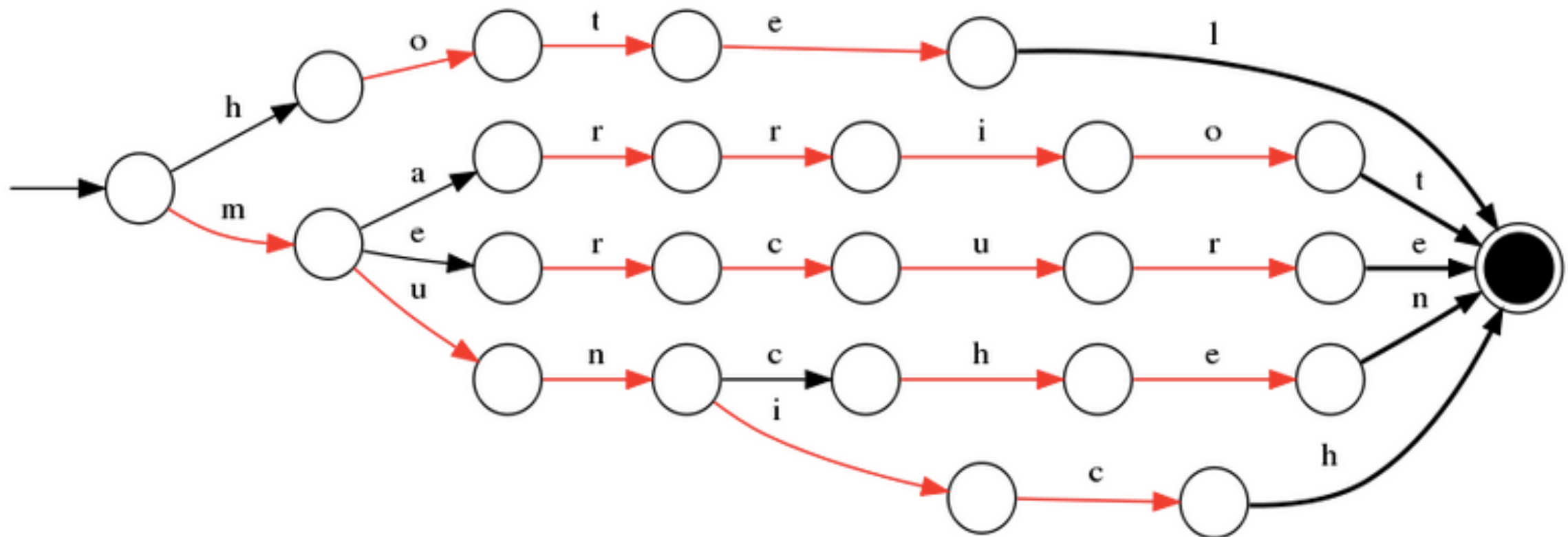


Suggestion

- Completion suggestion
- Ngram

Completion suggestion

Finite State Transducers (FST)



<http://www.elasticsearch.org/blog/you-complete-me/>

<http://www.elasticsearch.org/guide/en/elasticsearch/reference/current/search-suggesters-completion.html>

Example

How to add data to suggest ?

Elasticsearch book 1
Elasticsearch book 2
Elasticsearch book 3

Create new index

PUT /suggestion

{

 "mappings": {

 "book": {

 "properties": {

 "title": {

 "type": "string"

 },

"title_suggest": {

"type": "completion"

}

 }}}}}

Create document

```
PUT /suggestion/book/1
```

```
{
```

```
  "title" : "Elasticsearch book one",
```

```
  "title_suggest" : "Elasticsearch book one"
```

```
}
```


Try with “elas”

POST /suggestion/_suggest

```
{  
  "title" : {  
    "text" : "elas",  
    "completion" : {  
      "field" : "title_suggest",  
      "size" : 10  
    }  
  }  
}
```

Result

```
"title": [  
  {  
    "text": "elas",  
    "offset": 0,  
    "length": 4,  
    "options": [  
      {  
        "text": "Elasticsearch book three",  
        "score": 1  
      },  
      {  
        "text": "Elasticsearch book two",  
        "score": 1  
      },  
      {  
        "text": "Elasticsearch for developer",  
        "score": 1  
      }  
    ]  
  }  
]
```

Try with “book”

```
"title": [  
  {  
    "text": "book",  
    "offset": 0,  
    "length": 4,  
    "options": []  
  }  
]
```

Problem ?

Elasticsearch book 1
Elasticsearch book 2
Elasticsearch book 3

Elas

→ Found **3** documents

Book

→ Data not found

Multiple inputs

```
PUT /suggestion/book/1
{
  "title": "Elasticsearch book one",
  "title_suggest": {
    "input": [
      "Elasticsearch book one",
      "Book elasticsearch"
    ]
  }
}
```

Try with “book” again

```
    "title": [  
      {  
        "text": "book",  
        "offset": 0,  
        "length": 4,  
        "options": [  
          {  
            "text": "Book elasticsearch",  
            "score": 1  
          }  
        ]  
      }  
    ]  
  ]
```

Problem ?

```
    "title": [  
      {  
        "text": "book",  
        "offset": 0,  
        "length": 4,  
        "options": [  
          {  
            "text": "Book elasticsearch",  
            "score": 1  
          }  
        ]  
      }  
    ]  
  ]
```

Multiple inputs again

PUT /suggestion/book/1

```
{  
  "title": "Elasticsearch book one",  
  "title_suggest": {  
    "input": [  
      "Elasticsearch book one",  
      "Book elasticsearch",  
      "buy now ...",  
    ]  
  }  
}
```


Try with “book” again

```
    "title": [  
      {  
        "text": "b",  
        "offset": 0,  
        "length": 1,  
        "options": [  
          {  
            "text": "Book elasticsearch",  
            "score": 1  
          },  
          {  
            "text": "buy now .... ",  
            "score": 1  
          }  
        ]  
      }  
    ]  
  ]
```

Problem ?

```
,"title": [  
  {  
    "text": "b",  
    "offset": 0,  
    "length": 1,  
    "options": [  
      {  
        "text": "Book elasticsearch",  
        "score": 1  
      },  
      {  
        "text": "buy now .... ",  
        "score": 1  
      }  
    ]  
  }  
]
```

Single output

```
PUT /suggestion/book/1
{
  "title": "Elasticsearch book one",
  "title_suggest": {
    "input": [
      "Elasticsearch book one",
      "Book elasticsearch",
      "buy now .... "
    ],
    "output": "Elasticsearch book one"
  }
}
```

Try with “book” again

```
"title": [  
  {  
    "text": "b",  
    "offset": 0,  
    "length": 1,  
    "options": [  
      {  
        "text": "Elasticsearch book one",  
        "score": 1  
      }  
    ]  
  }  
]
```

Promotion for Book two ?

```
"title": [  
  {  
    "text": "e",  
    "offset": 0,  
    "length": 1,  
    "options": [  
      {  
        "text": "Elasticsearch book one",  
        "score": 1  
      },  
      {  
        "text": "Elasticsearch book three",  
        "score": 1  
      },  
      {  
        "text": "Elasticsearch book two",  
        "score": 1  
      }  
    ]  
  }  
]
```

Boost score of book two

```
PUT /suggestion/book/2
{
  "title": "Elasticsearch book two",
  "title_suggest": {
    "input": [
      "Elasticsearch book one", "discount"
    ],
    "output": "Elasticsearch book two",
    "weight": 10
  }
}
```

Try with “elas” again

```
"title": [  
  {  
    "text": "e",  
    "offset": 0,  
    "length": 1,  
    "options": [  
      {  
        "text": "Elasticsearch book two",  
        "score": 10  
      },  
      {  
        "text": "Elasticsearch book one",  
        "score": 1  
      },  
      {  
        "text": "Elasticsearch book three",  
        "score": 1  
      }  
    ]  
  }  
]
```

New use case

ถ้าต้องการ ID ของหนังสือล่ะ ?

Id	Title
1	Elasticsearch Book One
2	Elasticsearch Book Two
3	Elasticsearch Book Three

Mapping

```
{
  "suggestion": {
    "mappings": {
      "book": {
        "properties": {
          "title": {
            "type": "string"
          },
          "title_suggest": {
            "type": "completion",
            "analyzer": "simple",
            "payloads": false,
            "preserve_separators": true,
            "preserve_position_increments": true,
            "max_input_length": 50
          }
        }
      }
    }
  }
}
```

Mapping

```
{
  "suggestion": {
    "mappings": {
      "book": {
        "properties": {
          "title": {
            "type": "string"
          },
          "title_suggest": {
            "type": "completion",
            "analyzer": "simple",
            "payloads": false,
            "preserve_separators": true,
            "preserve_position_increments": true,
            "max_input_length": 50
          }
        }
      }
    }
  }
}
```

Need payloads = true

How to ?

1. ลบ index

2. สร้าง index ด้วย payload=true

Create new index with payloads

PUT /suggestion

```
{  
  "mappings": {  
    "book": {  
      "properties": {  
        "title": {  
          "type": "string"  
        },  
        "title_suggest": {  
          "type": "completion",  
          "payloads": "true"  
        }  
      }  
    }  
  }  
}
```

Create document

```
PUT /suggestion/book/1
{
  "title": "Elasticsearch book one",
  "title_suggest": {
    "input": [
      "Elasticsearch book one"
    ],
    "payload": {
      "product_id": 1
    }
  }
}
```

Try with “elas” again

```
    "title": [  
      {  
        "text": "elas",  
        "offset": 0,  
        "length": 4,  
        "options": [  
          {  
            "text": "Elasticsearch book one",  
            "score": 1,  
            "payload": {  
              "product_id": 1  
            }  
          },  
          {  
            "text": "Elasticsearch book three",  
            "score": 1,  
            "payload": {  
              "product_id": 3  
            }  
          },  
          {  
            "text": "Elasticsearch book two",  
            "score": 1,  
            "payload": {  
              "product_id": 2  
            }  
          }  
        ]  
      }  
    ]  
  }  
]
```