**Function\_score**

Function\_score allows us to modify the score of documents that are retrieved by a query.

**Create an index & add data:**

POST /listings/\_bulk

{ "index": {}}

{ "address": "1 Smith St Melbourne Vic 3000", "product": "highlight", "price": 820 }

{ "index": {}}

{ "address": "12 Smith St Sydney NSW 2000", "product": "highlight", "price": 950 }

{ "index": {}}

{ "address": "44 Smith St Brisbane QLD 4000", "product": "premier", "price": 900 }

{ "index": {}}

{ "address": "121 Smith St Perth WA 6000", "product": "premier", "price": 460 }

{ "index": {}}

{ "address": "3 Smith St Hobart TAS 7000", "product": "standard", "price": 650 }

{ "index": {}}

{ "address": "454 Smith St Adelaide SA 5000", "product": "standard", "price": 930 }

**Get Data:**

GET /listings/\_search

{

"query": {

"function\_score": {

"query": {

"match\_all": {}

},

"functions": [

{

"filter": {"match": { "product": "premier" }},

"weight": 3

},

{

"filter": {"match": { "product": "highlight" }},

"weight": 2

}

]

}

}

}

**Response:**

{

"took": 3,

"timed\_out": false,

"\_shards": {

"total": 1,

"successful": 1,

"skipped": 0,

"failed": 0

},

"hits": {

"total": {

"value": 6,

"relation": "eq"

},

"max\_score": 3,

"hits": [

{

"\_index": "listings",

"\_id": "2G\_kP4MBZXbOFjDL1aPd",

"\_score": 3,

"\_source": {

"address": "44 Smith St Brisbane QLD 4000",

"product": "premier",

"price": 900

}

},

{

"\_index": "listings",

"\_id": "2W\_kP4MBZXbOFjDL1aPd",

"\_score": 3,

"\_source": {

"address": "121 Smith St Perth WA 6000",

"product": "premier",

"price": 460

}

},

{

"\_index": "listings",

"\_id": "1m\_kP4MBZXbOFjDL1aPd",

"\_score": 2,

"\_source": {

"address": "1 Smith St Melbourne Vic 3000",

"product": "highlight",

"price": 820

}

},

{

"\_index": "listings",

"\_id": "12\_kP4MBZXbOFjDL1aPd",

"\_score": 2,

"\_source": {

"address": "12 Smith St Sydney NSW 2000",

"product": "highlight",

"price": 950

}

},

{

"\_index": "listings",

"\_id": "2m\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "3 Smith St Hobart TAS 7000",

"product": "standard",

"price": 650

}

},

{

"\_index": "listings",

"\_id": "22\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "454 Smith St Adelaide SA 5000",

"product": "standard",

"price": 930

}

}

]

}

}

**Sort range by price:**

GET listings/\_search

{

"query": {

"function\_score": {

"query": {

"match\_all": {}

},

"functions": [

{

"filter": {"match": {"product":"premier"}},

"weight": 3

},

{

"filter": {"match":{"product":"highlights"}},

"weight": 2

}

]

}

},

"sort": [

{

"\_score": {

"order": "desc"

}

},

{

"price": "asc"

}

]

}

**Response:**

{

"took": 1,

"timed\_out": false,

"\_shards": {

"total": 1,

"successful": 1,

"skipped": 0,

"failed": 0

},

"hits": {

"total": {

"value": 6,

"relation": "eq"

},

"max\_score": null,

"hits": [

{

"\_index": "listings",

"\_id": "2W\_kP4MBZXbOFjDL1aPd",

"\_score": 3,

"\_source": {

"address": "121 Smith St Perth WA 6000",

"product": "premier",

"price": 460

},

"sort": [

3,

460

]

},

{

"\_index": "listings",

"\_id": "2G\_kP4MBZXbOFjDL1aPd",

"\_score": 3,

"\_source": {

"address": "44 Smith St Brisbane QLD 4000",

"product": "premier",

"price": 900

},

"sort": [

3,

900

]

},

{

"\_index": "listings",

"\_id": "2m\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "3 Smith St Hobart TAS 7000",

"product": "standard",

"price": 650

},

"sort": [

1,

650

]

},

{

"\_index": "listings",

"\_id": "1m\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "1 Smith St Melbourne Vic 3000",

"product": "highlight",

"price": 820

},

"sort": [

1,

820

]

},

{

"\_index": "listings",

"\_id": "22\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "454 Smith St Adelaide SA 5000",

"product": "standard",

"price": 930

},

"sort": [

1,

930

]

},

{

"\_index": "listings",

"\_id": "12\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "12 Smith St Sydney NSW 2000",

"product": "highlight",

"price": 950

},

"sort": [

1,

950

]

}

]

}

}

**Rank premier in Brisbane above all else.**

GET /listings/\_search

{

"query": {

"function\_score": {

"query": {

"match\_all": {}

},

"functions": [

{

"filter": {"match":{"product":"premier"}},

"weight": 3

},

{

"filter": {"match":{"address":"Brisbane"}},

"weight": 2

}

]

}

}

}

**Response:**

{

"took": 5,

"timed\_out": false,

"\_shards": {

"total": 1,

"successful": 1,

"skipped": 0,

"failed": 0

},

"hits": {

"total": {

"value": 6,

"relation": "eq"

},

"max\_score": 6,

"hits": [

{

"\_index": "listings",

"\_id": "2G\_kP4MBZXbOFjDL1aPd",

"\_score": 6,

"\_source": {

"address": "44 Smith St Brisbane QLD 4000",

"product": "premier",

"price": 900

}

},

{

"\_index": "listings",

"\_id": "2W\_kP4MBZXbOFjDL1aPd",

"\_score": 3,

"\_source": {

"address": "121 Smith St Perth WA 6000",

"product": "premier",

"price": 460

}

},

{

"\_index": "listings",

"\_id": "1m\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "1 Smith St Melbourne Vic 3000",

"product": "highlight",

"price": 820

}

},

{

"\_index": "listings",

"\_id": "12\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "12 Smith St Sydney NSW 2000",

"product": "highlight",

"price": 950

}

},

{

"\_index": "listings",

"\_id": "2m\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "3 Smith St Hobart TAS 7000",

"product": "standard",

"price": 650

}

},

{

"\_index": "listings",

"\_id": "22\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "454 Smith St Adelaide SA 5000",

"product": "standard",

"price": 930

}

}

]

}

}

**# Note that, by default, the function score query multiplies the scores together**

GET /listings/\_search

{

"query": {

"function\_score": {

"query": {

"match\_all": {}

},

"functions": [

{

"filter": {"match": { "product": "premier" }},

"weight": 3

},

{

"filter": {"match": { "address": "Brisbane" }},

"weight": 2

}

]

}

}

}

**Response:**

{

"took": 0,

"timed\_out": false,

"\_shards": {

"total": 1,

"successful": 1,

"skipped": 0,

"failed": 0

},

"hits": {

"total": {

"value": 6,

"relation": "eq"

},

"max\_score": 6,

"hits": [

{

"\_index": "listings",

"\_id": "2G\_kP4MBZXbOFjDL1aPd",

"\_score": 6,

"\_source": {

"address": "44 Smith St Brisbane QLD 4000",

"product": "premier",

"price": 900

}

},

{

"\_index": "listings",

"\_id": "2W\_kP4MBZXbOFjDL1aPd",

"\_score": 3,

"\_source": {

"address": "121 Smith St Perth WA 6000",

"product": "premier",

"price": 460

}

},

{

"\_index": "listings",

"\_id": "1m\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "1 Smith St Melbourne Vic 3000",

"product": "highlight",

"price": 820

}

},

{

"\_index": "listings",

"\_id": "12\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "12 Smith St Sydney NSW 2000",

"product": "highlight",

"price": 950

}

},

{

"\_index": "listings",

"\_id": "2m\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "3 Smith St Hobart TAS 7000",

"product": "standard",

"price": 650

}

},

{

"\_index": "listings",

"\_id": "22\_kP4MBZXbOFjDL1aPd",

"\_score": 1,

"\_source": {

"address": "454 Smith St Adelaide SA 5000",

"product": "standard",

"price": 930

}

}

]

}

}

**List all the properties ranked how close the price is to 800.**

GET /listings/\_search

{

"query": {

"function\_score": {

"query": {

"match\_all": {}

},

"functions": [

{

"linear": {

"price": {

"origin": "800",

"scale": "1000",

"decay": 0.5

}

}

}

]

}

}

}

**Response:**

{

"took": 12,

"timed\_out": false,

"\_shards": {

"total": 1,

"successful": 1,

"skipped": 0,

"failed": 0

},

"hits": {

"total": {

"value": 6,

"relation": "eq"

},

"max\_score": 0.99,

"hits": [

{

"\_index": "listings",

"\_id": "1m\_kP4MBZXbOFjDL1aPd",

"\_score": 0.99,

"\_source": {

"address": "1 Smith St Melbourne Vic 3000",

"product": "highlight",

"price": 820

}

},

{

"\_index": "listings",

"\_id": "2G\_kP4MBZXbOFjDL1aPd",

"\_score": 0.95,

"\_source": {

"address": "44 Smith St Brisbane QLD 4000",

"product": "premier",

"price": 900

}

},

{

"\_index": "listings",

"\_id": "22\_kP4MBZXbOFjDL1aPd",

"\_score": 0.935,

"\_source": {

"address": "454 Smith St Adelaide SA 5000",

"product": "standard",

"price": 930

}

},

{

"\_index": "listings",

"\_id": "12\_kP4MBZXbOFjDL1aPd",

"\_score": 0.925,

"\_source": {

"address": "12 Smith St Sydney NSW 2000",

"product": "highlight",

"price": 950

}

},

{

"\_index": "listings",

"\_id": "2m\_kP4MBZXbOFjDL1aPd",

"\_score": 0.925,

"\_source": {

"address": "3 Smith St Hobart TAS 7000",

"product": "standard",

"price": 650

}

},

{

"\_index": "listings",

"\_id": "2W\_kP4MBZXbOFjDL1aPd",

"\_score": 0.83,

"\_source": {

"address": "121 Smith St Perth WA 6000",

"product": "premier",

"price": 460

}

}

]

}

}