SpectoLabs

Matching

Agenda

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- Introduction to Matching

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- Introduction to Matching
- Exercise: Simulating Multiple Requests

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- Introduction to Matching
- Exercise: Simulating Multiple Requests
- Looser Matching

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- Exercise: Simplifying our Simulation with Loose Matching

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- Scoring

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```json
{
  "data": {
    "pairs": [
      {
        "request": {
          "path": {
            "exactMatch": "/api/v1/flights"
          },
          "method": {
            "exactMatch": "GET"
          },
          "destination": {
            "exactMatch": "localhost:8081"
          },
          "scheme": {
            "exactMatch": "http"
          },
          "query": {
            "exactMatch": "plusDays=1"
          },
          "body": {
            "exactMatch": ""
          }
        },
        "response": {
          "status": 200,
          "body": "[{\"origin\":\"Berlin\",\"destination\":\"Bangkok\",\"cost\":\"2344.38\",\"when\":\"19:44\"},{\"orig
          "encodedBody": false,
          "headers": {
            "Content-Type": [
              "application/json;charset=UTF-8"
            ]
          }
        }
      },
      {
        "request": {
          "path": {
            "exactMatch": "/api/v1/flights"
          },
          "method": {
            "exactMatch": "GET"
```

Matching

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Request Matchers			

Matching

Request Matchers			
Method	Destination	Path	Query

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo

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Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo

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Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo

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Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo

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Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo
✓			

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo
✔	✔		

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo
✔️	✔️	❌	

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo
✓	✓	❌	✓

Matching

Request Matchers

Method	Destination	Path	Query	
GET	www.foo.com	/miss	?token=foo	✖
GET	www.foo.com	/login	?token=foo	

Request

Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo
✔	✔	✖	✔

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo
✓			

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo
✓	✓		

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=foo
✓	✓	✓	

Matching

Request Matchers

Method	Destination	Path	Query	
GET	www.foo.com	/miss	?token=foo	❌
GET	www.foo.com	/login	?token=foo	

Request

Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo
✓	✓	✓	✓

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo	❌
GET	www.foo.com	/login	?token=foo	✔
Request			
GET	www.foo.com	/login	?token=foo
✔	✔	✔	✔

Matching

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✓

Matching

✓

```
curl 'localhost:8081/api/v1/flights?plusDays=2' --proxy localhost:8500 | jq
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   150  100   150    0     0   18007      0 --:--:-- --:--:-- --:--:-- 18750
[
  {
    "origin": "Paris",
    "destination": "Dubai",
    "cost": "1030.49",
    "when": "03:53"
  },
  {
    "origin": "Paris",
    "destination": "New York",
    "cost": "1220.73",
    "when": "04:51"
  }
]
```

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Request Matchers			
Method	Destination	Path	Query

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Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo

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Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo

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Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo

Matching

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Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo
✓			

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo
✓	✓		

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo
✔	✔	❌	

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo
✓	✓	✗	✓

Matching

SpectoLabs

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo ❌
GET	www.foo.com	/login	?token=foo

Request			
GET	www.foo.com	/wrong	?token=foo
✓	✓	❌	✓

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo
✓			

Matching

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Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo

Request			
GET	www.foo.com	/wrong	?token=foo
✓	✓		

Matching

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Request Matchers				
Method	Destination	Path	Query	
GET	www.foo.com	/miss	?token=foo	❌
GET	www.foo.com	/login	?token=foo	

Request			
GET	www.foo.com	/wrong	?token=foo
✔	✔	❌	

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/wrong	?token=foo
✓	✓	✗	✓

Matching

Request Matchers			
Method	Destination	Path	Query
GET	www.foo.com	/miss	?token=foo ❌
GET	www.foo.com	/login	?token=foo ❌
Request			
GET	www.foo.com	/wrong	?token=foo
✓	✓	❌	✓

Matching

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Matching

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```
curl localhost:8081/api/v1/miss --proxy localhost:8500
Hoverfly Error!

There was an error when matching

Got error: Could not find a match for request, create or record a valid matcher first!

The following request was made, but was not matched by Hoverfly:

{
    "Path": "/api/v1/miss",
    "Method": "GET",
    "Destination": "localhost:8081",
    "Scheme": "http",
    "Query": "",
    "Body": "",
    "Headers": {
        "Accept": [
            "*/*"
        ],
        "Proxy-Connection": [
            "Keep-Alive"
        ],
        "User-Agent": [
            "curl/7.54.0"
        ]
    }
}

The matcher which came closest was:
```

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Why Looser Matching?

Why Looser Matching?

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Matcher			
Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo

Request			
GET	www.foo.com	/login	?token=foo

Why Looser Matching?

Matcher			
Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo

Request			
GET	www.foo.com	/login	?token=foo
✓	✓	✓	✓

Why Looser Matching?

Matcher

Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo

Request

Method	Destination	Path	Query
GET	www.foo.com	/login	?token=miss
✓	✓	✓	✗

Why Looser Matching?

Matcher			
Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo

Request			
GET	www.foo.com	/login	???
✓	✓	✓	✗

Field Omission

Field Omission

Matcher			
Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=bar

Field Omission

SpectoLabs

Matcher			
Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=bar
✔			

Field Omission

Matcher			
Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo
Request			
GET	www.foo.com	/login	?token=bar
✓	✓		

Field Omission

Matcher			
Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo

Request			
GET	www.foo.com	/login	?token=bar
✓	✓	✓	

Field Omission

SpectoLabs

Matcher			
Method	Destination	Path	Query
GET	www.foo.com	/login	?token=foo

Request			
GET	www.foo.com	/login	?token=bar
✓	✓	✓	✗

Field Omission

Matcher			
Method	Destination	Path	
GET	www.foo.com	/login	
Request			
GET	www.foo.com	/login	?token=bar
✓	✓	✓	

Regex Matching

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Regex Matching

Matcher		
Method	Destination	Path
GET	www.foo.com	/name/john
Request		
GET	www.foo.com	/name/tim

Regex Matching

Matcher		
Method	Destination	Path
GET	www.foo.com	/name/john
Request		
GET	www.foo.com	/name/tim
✓		

Regex Matching

Matcher		
Method	Destination	Path
GET	www.foo.com	/name/john

Request		
GET	www.foo.com	/name/tim
✓	✓	

Regex Matching

SpectoLabs

Matcher		
Method	Destination	Path
GET	www.foo.com	/name/john

Request		
GET	www.foo.com	/name/tim
✓	✓	✗

Regex Matching

Matcher		
Method	Destination	Path Regex
GET	www.foo.com	name\\\/(.*)
Request		
GET	www.foo.com	/name/tim
✓	✓	✓

JSON Matching

JSON Matching

Matcher
Body
{"foo" : "bar"}
Request
{"foo" :   "bar"}

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Matcher

Body

{"foo" : "bar"}

Request

{"foo" :   "bar"}

JSON Matching

Matcher

Body JSON

{"foo" : "bar"}

Request

{"foo" :   "bar"}

✓

Additional Matchers

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Additional Matchers

- XML (Strict and Loose)

Additional Matchers

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- XML (Strict and Loose)
- JSONPath / XPath

Additional Matchers

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- XML (Strict and Loose)
- JSONPath / XPath
- …Anything

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Scoring

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Scoring

Scoring

SpectoLabs

Request

Scoring

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Request					
GET	www.foo.com	/name/tim	?token=bar		

Scoring

Request				
GET	www.foo.com	/name/tim	?token=bar	
Matchers			Match?	

Scoring

Request				
GET	www.foo.com	/name/tim	?token=bar	

Matchers			Match?	
GET	www.foo.com			

Scoring

Request				
GET	www.foo.com	/name/tim	?token=bar	

Matchers			Match?	
GET	www.foo.com		✅	

Scoring

Request				
GET	www.foo.com	/name/tim	?token=bar	

Matchers			Match?	
GET	www.foo.com			✔
GET	www.foo.com	/name/tim		

Scoring

Request				
GET	www.foo.com	/name/tim	?token=bar	
Matchers			Match?	
GET	www.foo.com		✓	
GET	www.foo.com	/name/tim	✓	

Scoring

Request				
GET	www.foo.com	/name/tim	?token=bar	
Matchers			Match?	
GET	www.foo.com			✓
GET	www.foo.com	/name/tim		✓
GET	www.foo.com	/name/tim	?token=bar	

Scoring

SpectoLabs

		Request		Match?	
GET	www.foo.com	/name/tim	?token=bar		
		Matchers		Match?	
GET	www.foo.com			✔	
GET	www.foo.com	/name/tim		✔	
GET	www.foo.com	/name/tim	?token=bar	✔	

Scoring

Request				
GET	www.foo.com	/name/tim	?token=bar	
Matchers			**Match?**	**Score**
GET	www.foo.com			✅	
GET	www.foo.com	/name/tim		✅	
GET	www.foo.com	/name/tim	?token=bar	✅	

Scoring

Request					
GET	www.foo.com	/name/tim	?token=bar		
Matchers				**Match?**	**Score**
GET	www.foo.com			✓	2
GET	www.foo.com	/name/tim		✓	
GET	www.foo.com	/name/tim	?token=bar	✓	

Scoring

Request					
GET	www.foo.com	/name/tim	?token=bar		
Matchers				**Match?**	**Score**
GET	www.foo.com			✓	2
GET	www.foo.com	/name/tim		✓	3
GET	www.foo.com	/name/tim	?token=bar	✓	

Scoring

SpectoLabs

		Request			
GET	www.foo.com	/name/tim	?token=bar		
		Matchers		**Match?**	**Score**
GET	www.foo.com			✓	2
GET	www.foo.com	/name/tim		✓	3
GET	www.foo.com	/name/tim	?token=bar	✓	4

Scoring

		Request		Match?	Score
GET	www.foo.com	/name/tim	?token=bar		
		Matchers		**Match?**	**Score**
GET	www.foo.com			✓	2
GET	www.foo.com	/name/tim		✓	3
GET	www.foo.com	/name/tim	?token=bar	✓	4

➡️

Debugging

SpectoLabs

Debugging

SpectoLabs

Debugging

SpectoLabs

Request

Debugging

SpectoLabs

	Request					
GET	www.foo.com	/name/tim	?token=bar			

Debugging

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	Request					
GET	www.foo.com	/name/tim	?token=bar			
	Matchers			Score	Match?	Closest?

Debugging

SpectoLabs

	Request					
GET	www.foo.com	/name/tim	?token=bar			
	Matchers			**Score**	**Match?**	**Closest?**
MISS	www.foo.com	miss		1		

Debugging

Request					
GET	www.foo.com	/name/tim	?token=bar		
Matchers				**Score**	**Match?**	**Closest?**
MISS	www.foo.com	miss		1	❌	

Debugging

Request						
GET	www.foo.com	/name/tim	?token=bar			
Matchers				**Score**	**Match?**	**Closest?**
MISS	www.foo.com	miss		1	❌	
MISS	www.foo.com	/name/tim		2		

Debugging

SpectoLabs

Request						
GET	www.foo.com	/name/tim	?token=bar			
Matchers				**Score**	**Match?**	**Closest?**
MISS	www.foo.com	miss		1	❌	
MISS	www.foo.com	/name/tim		2	❌	

Debugging

Request						
GET	www.foo.com	/name/tim	?token=bar			

Matchers				Score	Match?	Closest?
MISS	www.foo.com	miss		1	❌	
MISS	www.foo.com	/name/tim		2	❌	
GET	www.foo.com	/name/tim	miss	3		

Debugging

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	Request					
GET	www.foo.com	/name/tim	?token=bar			
	Matchers			**Score**	**Match?**	**Closest?**
MISS	www.foo.com	miss		1	❌	
MISS	www.foo.com	/name/tim		2	❌	
GET	www.foo.com	/name/tim	miss	3	❌	

Debugging

Request						
GET	www.foo.com	/name/tim	?token=bar			
Matchers				**Score**	**Match?**	**Closest?**
MISS	www.foo.com	miss		1	❌	
MISS	www.foo.com	/name/tim		2	❌	
GET	www.foo.com	/name/tim	miss	3	❌	✔️

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