


Azure Search for Your App

Nurul Arif Setiawan

CTO, Dycode

Microsoft Azure

GET /indexes/speakers/docs?search=arif

```
{  
  name: "Nurul Arif Setiawan",  
  twitter: "@ken121f",  
  position: "CTO",  
  company: "Dycode",  
  stack: ["C++", "Javascript"],  
  avatar:   
}
```



What is Search ?



where [field] like '%query%' isn't a search engine

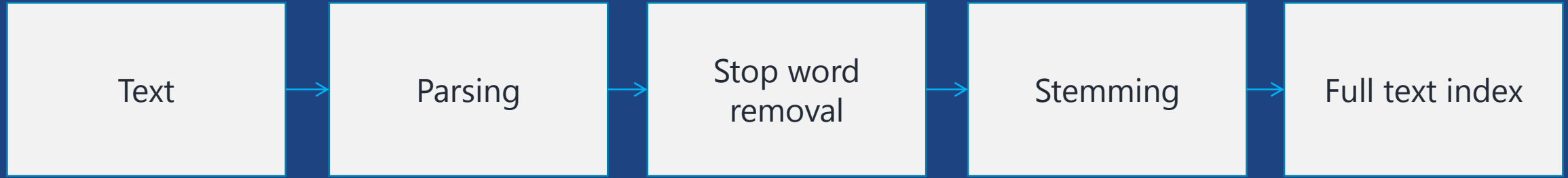
What is Search?



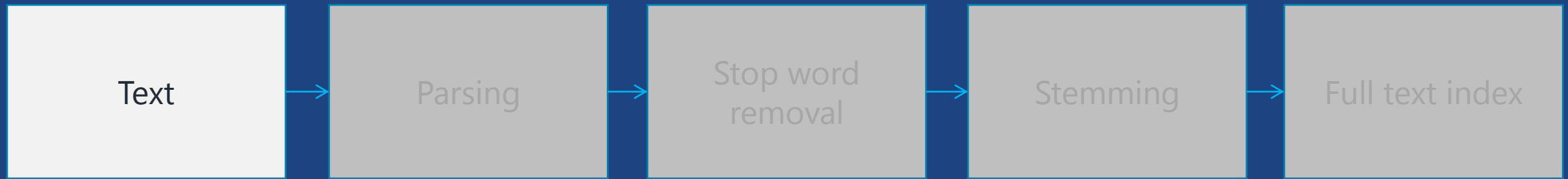
Database index

Full text search index

What is Search?



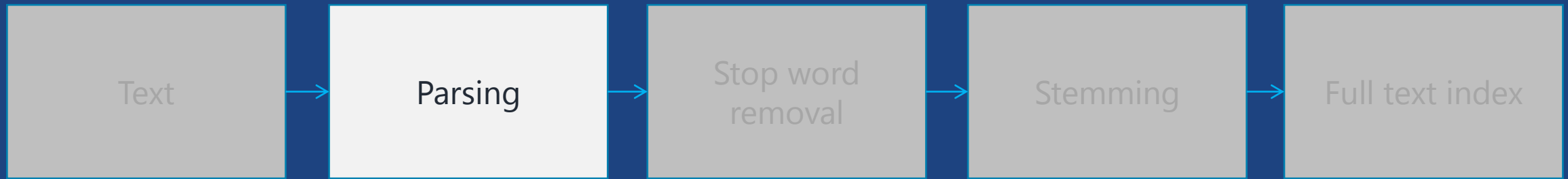
What is Search?



akulah si telaga: berlayarlah di atasnya;
berlayarlah menyibakkan riak-riak kecil
yang menggerakkan bunga-bunga padma;

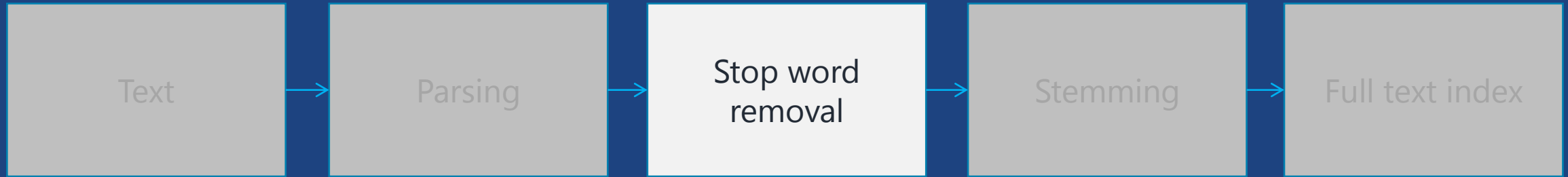
Aku ingin mencintaimu dengan sederhana
dengan kata yang tak sempat diucapkan
kayu kepada api yang menjadikannya abu

What is Search?



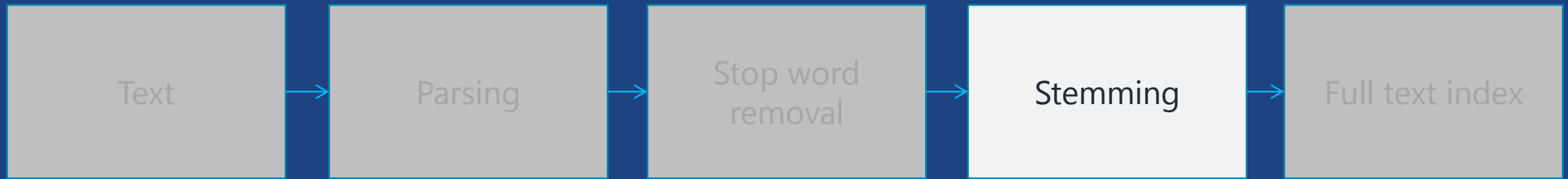
Akulah
si
telaga:
Berlayarlah
di
atasnya;
berlayarlah
Menyibakkan
riak-riak

What is Search?



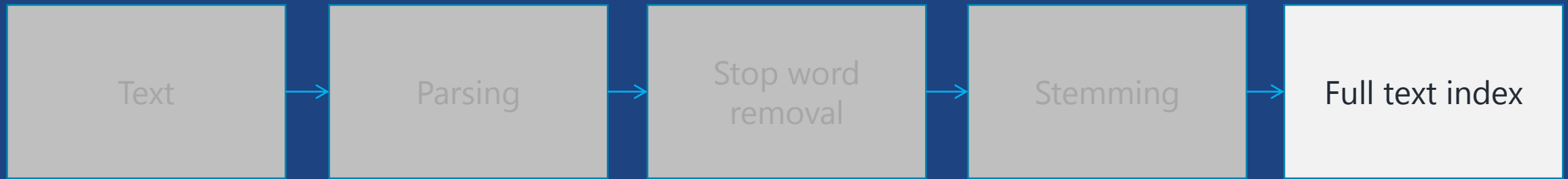
Akulah
telaga:
Berlayarlah
berlayarlah
Menyibakkan
riak-riak

What is Search?



aku
telaga
layar
layar
sibak
riak

What is Search?



id	terms	Document : position
1	aku	1:1, 2:1
2	telaga	1:3
3	layar	1:4, 1:7
12	ingin	2,2
13	cinta	2,3

What is Search?



cinta

Aku ingin mencintaimu dengan sederhana
dengan kata yang tak sempat diucapkan kayu
kepada api yang menjadikannya abu

id	terms	Document : position
1	aku	1:1, 2:1
2	telaga	1:3
3	layar	1:4, 1:7
12	ingin	2:2
13	cinta	2:3

cinta => document no 2



Why Search ?

Search



E-commerce
Booking
Etc



Azure Search

Azure Search

SQL
Database



SQL Server
VM



DocumentDB



Search



HDInsight



Additional
databases



Search-as-a-service for web and mobile app development



Managed

High performance

Horizontally scalable

Elastic Search under the covers

REST API

.NET SDK Available



Simple REST API for creating indexes, pushing documents, searching

Keyword search with user-friendly operators (+, -, *, "", etc.)

Hit highlighting

Faceting (histograms over ranges, typically used in catalog browsing)



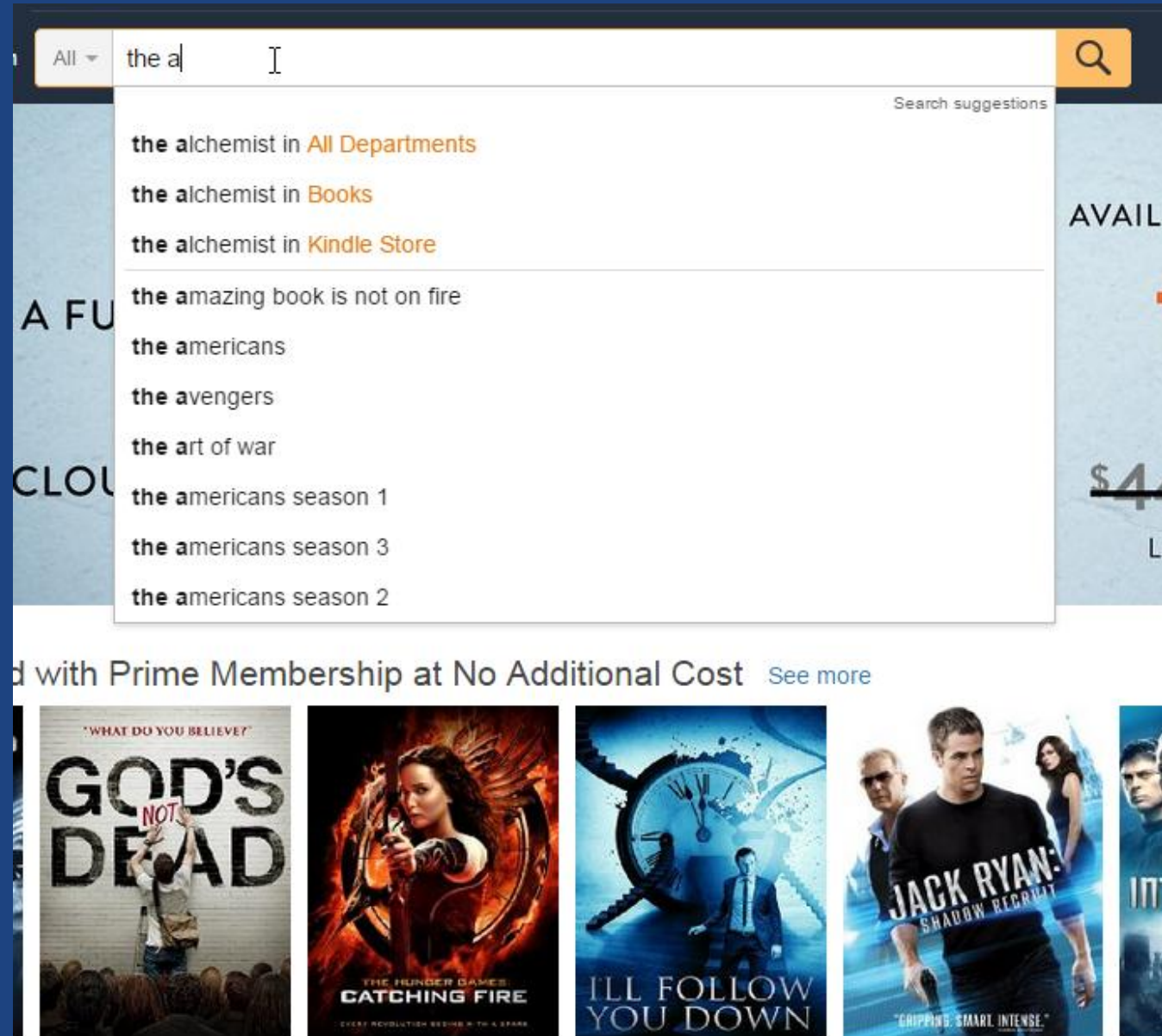
Suggestions (auto-complete)

Rich structured queries (filter, select, sort) that combines with search

Scoring profiles to model search result relevance

Geo-spatial support integrated in filtering, sorting and ranking

Suggestion





MERЕК

Semua Merek

- ☐ ACER (24)
- ☐ APPLE (7)
- ☐ ASUS (59)
- ☐ AXIIOO (4)
- ☐ DELL (21)
- ☐ FUJITSU (5)
- ☐ HP (32)
- ☐ LENOVO (26)

TIPE PROSESOR

- ☐ AMD Dual Core (3)
- ☐ AMD Quad Core (11)
- ☐ Intel Atom (3)
- ☐ Intel Celeron (40)
- ☐ Intel Core i3 (33)
- ☐ Intel Core i5 (47)
- ☐ Intel Core i7 (28)
- ☐ Intel Pentium Quad Core (13)

MEMORI / RAM

- ☐ 2 GB (92)
- ☐ 4 GB (69)
- ☐ 6 GB (1)

*Promosi Bhinneka: Beli notebook ini dan dapatkan harga spesial untuk pembelian Microsoft Office 365 Home Premium (SKU00213900) hanya Rp. 780.000 (dalam 1 invoice)
Informasi Khusus: Free Upgrade Processor to Intel N3540*

☐ Compare ★★★★★ (3)

☐ Compare

Special Deal: Free Carrying Asus

☐ Compare ★★★★★ (1)



HP Notebook 14-r201TX - Red

Notebook / Laptop Consumer Intel Core i5
 - Intel Core i5-5200U
 - 2GB DDR3
 - 500GB HDD

Rp 6,899,000



HP Stream 11-d017TU - Magenta

Notebook / Laptop Consumer Intel Celeron
 - Intel Celeron N2840
 - 2GB DDR3
 - 32GB eMMC

Khusus promo Notebook Festival

~~Rp 2,799,000~~ **Sold out**

Rp 3,099,000



HP Stream 13-c017TU - Magenta

Notebook / Laptop Consumer Intel Celeron
 - Intel Celeron N2840
 - 2GB DDR3
 - 32GB eMMC

~~Rp 3,399,000~~

Rp 3,349,000 **-1%**



Control items relevance in the context of the current search operation

Boosting items score by specific criteria

- Nearest location

- Newest items

- Most popular items

- Promoted items



Azure Search Setup

Create New Search Service



HOME

NOTIFICATIONS

BROWSE

ACTIVE

BILLING

NEW

Create

Browse

Compute

Web + Mobile

Data + Storage

Data Analytics

Networking

Media + CDN

Hybrid integration

Identity

Developer Services

Management

Recent

You haven't created anything recently.

Data + Storage

SQL Database

DocumentDB

Storage

Redis Cache

Search

MongoLab

DataStax Enterprise (production use - BYOL)

Azure Marketplace

Browse 3000+ additional solutions

New Search Service

URL

Enter service name

.search.windows.net

PRICING TIER

Standard

RESOURCE GROUP

Configure required settings

SUBSCRIPTION

Configure required settings

LOCATION

Configure required settings

☒ Add to Startboard

Create

Choose your pricing tier

BROWSE THE AVAILABLE PLANS AND THEIR FEATURES

Please choose a pricing tier for your search service. [Learn more](#)

S Standard		F Free	
15M	Up to 15,000,000 doc...	10K	Up to 10,000 docume...
50	Up to 50 indexes	3	Up to 3 indexes
Up to 300 GB Storage		Up to 50 MB Storage	
Up to 36 search units Scaling		None Scaling	
Dedicated Resources		Shared Resources	
250.00		0.00	
USD/MONTH PER UNIT (ESTIMATED)		USD/MONTH PER UNIT	

Select



Create Index

Add or Update documents

Search



Search Index



Predefined structure

Not dynamic

Field has characteristics

Update index function is limited



In the current service release, there is support for limited index schema updates. Any schema updates that would require re-indexing such as changing field types are not currently supported. Although existing fields cannot be changed or deleted, new fields can be added to an existing index at any time.

Basic Analyzer Suggester

FIELD NAME	TYPE	RETRIEVABLE	FILTERABLE	SORTABLE	FACETABLE	KEY	SEARCHABLE
hotelId	Edm.String	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
baseRate	Edm.Double	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
description	Edm.String	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>
hotelName	Edm.String	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
category	Edm.String	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
tags	Collection(Edm.String)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
parkingIncluded	Edm.Boolean	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
smokingAllowed	Edm.Boolean	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
lastRenovationDate	Edm.DateTimeOffset	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
rating	Edm.Int32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Index Fields



Name

Type

Searchable

Filterable

Sortable

Facetable

Key

Retrievable

Analyzer



Name	Edm.String
Type	Collection(Edm.String)
Searchable	Edm.Int32
Filterable	Edm.Int64
Sortable	Edm.Double
Facetable	Edm.Boolean
Key	Edm.DateTimeOffset
Retrievable	Edm.GeographyPoint
Analyzer	



Name

Full text search-able

Type

Searchable

Edm.String

Filterable

Collection(Edm.String)

Sortable

Facetable

Key

Retrievable

Analyzer



Name

Exact match

Type

Searchable

All types

Filterable

Sortable

Facetable

Key

Retrievable

Analyzer



Name

Sorting result

Type

Default sorted by score

Searchable

Filterable

All except Collection(Edm.String)

Sortable

Facetable

Key

Retrievable

Analyzer



Name

Used to group items

Type

Searchable

All except Edm.GeographyPoint

Filterable

Sortable

Facetable

Key

Retrievable

Analyzer



Name

Required!

Type

Searchable

Only one field for the document

Filterable

Can be used to look up a

Sortable

document directly

Facetable

Update

Key

Delete

Retrievable

Analyzer



Name

Set if field is shown in search result

Type

Searchable

Filterable

Sortable

Facetable

Key

Retrievable

Analyzer



Name

Type

Searchable

Filterable

Sortable

Facetable

Key

Retrievable

Analyzer

Stemming

Stop words

For non-english language

<https://msdn.microsoft.com/en-us/library/azure/dn879793.aspx>



Basic Search API

<https://msdn.microsoft.com/en-us/library/azure/dn798935.aspx>



Create Index

POST [https://\[servicename\].search.windows.net/indexes?api-version=2015-02-28](https://[servicename].search.windows.net/indexes?api-version=2015-02-28)

Content-Type: application/json

api-key: [admin key]



Get Index

GET [https://\[service name\].search.windows.net/indexes/\[index name\]?api-version=2015-02-28](https://[service name].search.windows.net/indexes/[index name]?api-version=2015-02-28)

api-key: [admin key]



Add or Update Documents

POST [https://\[service name\].search.windows.net/indexes/\[index name\]/docs/index?api-version=2015-02-28](https://[service name].search.windows.net/indexes/[index name]/docs/index?api-version=2015-02-28)

Content-Type: application/json

api-key: [admin key]



Search/Query Documents

GET [https://\[service name\].search.windows.net/indexes/\[index name\]/docs?\[query parameters\]&api-version=2015-02-28](https://[service name].search.windows.net/indexes/[index name]/docs?[query parameters]&api-version=2015-02-28)

Accept: application/json

api-key: [admin key]



Search/Query Parameters

search=string

searchFields=[string]

\$orderby=[string]

\$select=[string]

facet=[string]

\$filter=[string]

highlight=[string]

scoringProfile=[string]



Azure Search Pricing

Pricing Tier



	FREE	STANDARD
Storage	50 MB	25 GB / unit
Queries per Second*	N/A	15 / unit
Documents Hosted**	10,000 Documents 3 Index Limit	15 Million / unit 50 Index Limit
Scale Out Limits	N/A	Up to 36 units
Price per Unit per Hour	Free	\$0.336/hr (~\$250/mo)
Data Transfer	Standard Rates Apply	Standard Rates Apply

Scaling

[illegible]



Search unit : Replica + Partition

Replica : More performance. Each replica store copy of index (distributed read)

Partition : More documents (storage), faster ingestion



More Search API



Questions ?



Thank you