

## TP1 Mongo DB Rapport

### Création de la base de données

1. Nouvelle base de données "DBLP"
2. Insertion du premier document dans une collection "publis"
3. Insertion de deux publications of type "Article" from Google Scholar
4. Affichage du contenu de la collection "publis"
5. Importation des données du fichier dblp.json dans MongoDB
- Installation des outils nécessaires pour mongoimport
6. Vérifier que les données ont bien été insérées :

### Requêtes Base de Données DBLP :

1. Afficher toutes les publications de type "Book"
2. Afficher la liste des publications depuis 2012
3. Afficher la liste des publications de type "Book" depuis 2012
4. Afficher la liste des publications de "Michael Schmitz"
5. Récupérer la liste de tous les éditeurs distincts (publisher)
6. Récupérer la liste de tous les auteurs distincts
7. Trier les publications de "Toru Ishida" par titre et page de début
8. Afficher uniquement le titre et le nombre de pages des publications de "Toru Ishida"
9. Compter le nombre de publications de "Toru Ishida"
10. Compter le nombre de publications depuis 2011, groupées par type
11. Compter le nombre de publications par auteur et trier en ordre croissant
12. Compter le nombre de publications par auteur et trier en ordre décroissant

# Création de la base de données

## 1. Nouvelle base de données "DBLP"

on ouvre **MongoDB Shell** en exécutant :

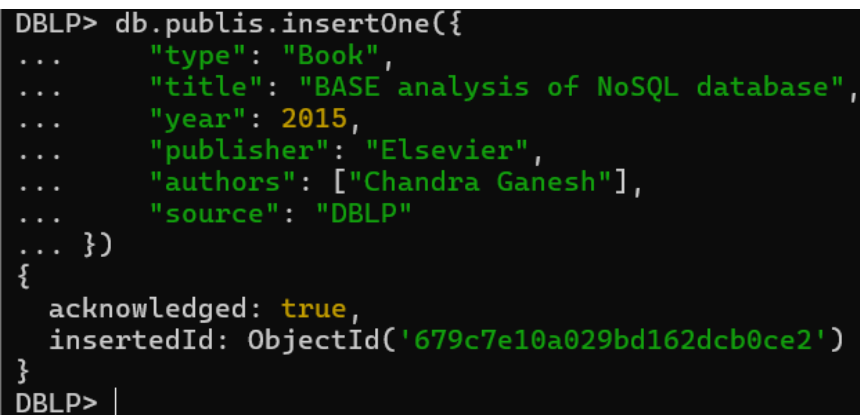
```
mongosh
```

On crée la base de données **DBLP** :

```
use DBLP
```

## 2. Insertion du premier document dans une collection "publis"

```
db.publis.insertOne({
  "type": "Book",
  "title": "BASE analysis of NoSQL database",
  "year": 2015,
  "publisher": "Elsevier",
  "authors": ["Chandra Ganesh"],
  "source": "DBLP"
})
```



```
DBLP> db.publis.insertOne({
...   "type": "Book",
...   "title": "BASE analysis of NoSQL database",
...   "year": 2015,
...   "publisher": "Elsevier",
...   "authors": ["Chandra Ganesh"],
...   "source": "DBLP"
... })
{
  acknowledged: true,
  insertedId: ObjectId('679c7e10a029bd162dcb0ce2')
}
DBLP> |
```

## 3. Insertion de deux publications of type "Article" from Google Scholar

```
db.publis.insertMany([
  {
    "type": "Article",
    "title": "The Role of Big Data Analytics in Revolutionizing Diabetes
Management and Healthcare Decision-Making",
    "year": 2025,
    "publisher": "IEEE Access",
    "authors": [
      "Muhammad Nauman",
      "Ahmad S. Almadhor",
```

```

        "Mohammed Albekairi",
        "Ali R. Ansari",
        "Muhammad A. B. Fayyaz",
        "Raheel Nawaz"
    ],
    "source": "DBLP"
},
{
    "type": "Article",
    "title": "NeuralACT: Accounting Analytics Using Neural Network for
Real-Time Decision Making From Big Data",
    "year": 2025,
    "publisher": "IEEE Access",
    "authors": [
        "Leonidas Theodorakopoulos",
        "Alexandra Theodoropoulou",
        "Georgios Kampiotis",
        "Ioanna Kalliampakou"
    ],
    "source": "DBLP"
}
]
])

```

```

DBLP> db.publis.insertMany([
...   {
...     "type": "Article",
...     "title": "The Role of Big Data Analytics in Revolutionizing Diab
etes Management and Healthcare Decision-Making",
...     "year": 2025,
...     "publisher": "IEEE Access",
...     "authors": [
...       "Muhammad Nauman",
...       "Ahmad S. Almadhor",
...       "Mohammed Albekairi",
...       "Ali R. Ansari",
...       "Muhammad A. B. Fayyaz",
...       "Raheel Nawaz"
...     ],
...     "source": "DBLP"
...   },
...   {
...     "type": "Article",
...     "title": "NeuralACT: Accounting Analytics Using Neural Network f
or Real-Time Decision Making From Big Data",
...     "year": 2025,
...     "publisher": "IEEE Access",
...     "authors": [
...       "Leonidas Theodorakopoulos",
...       "Alexandra Theodoropoulou",
...       "Georgios Kampiotis",
...       "Ioanna Kalliampakou"
...     ],
...     "source": "DBLP"
...   }
... ])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('679c7e58a029bd162dcb0ce3'),
    '1': ObjectId('679c7e58a029bd162dcb0ce4')
  }
}

```

#### 4. Affichage du contenu de la collection “publis”

```
db.publis.find()
```

```
DBLP> db.publis.find()
[
  {
    _id: ObjectId('679c7eb9a029bd162dcb0ce5'),
    type: 'Book',
    title: 'BASE analysis of NoSQL database',
    year: 2015,
    publisher: 'Elsevier',
    authors: [ 'Chandra Ganesh' ],
    source: 'DBLP'
  },
  {
    _id: ObjectId('679c7ecaa029bd162dcb0ce6'),
    type: 'Article',
    title: 'The Role of Big Data Analytics in Revolutionizing Diabetes Management and Healthcare Decision-Making',
    year: 2025,
    publisher: 'IEEE Access',
    authors: [
      'Muhammad Nauman',
      'Ahmad S. Almadhor',
      'Mohammed Albekairi',
      'Ali R. Ansari',
      'Muhammad A. B. Fayyaz',
      'Raheel Nawaz'
    ],
    source: 'DBLP'
  },
  {
    _id: ObjectId('679c7ecaa029bd162dcb0ce7'),
    type: 'Article',
    title: 'NeuralACT: Accounting Analytics Using Neural Network for Real-Time Decision Making From Big Data',
    year: 2025,
    publisher: 'IEEE Access',
    authors: [
      'Leonidas Theodorakopoulos',
      'Alexandra Theodoropoulou',
      'Georgios Kampiotis',
      'Ioanna Kalliampakou'
    ],
    source: 'DBLP'
  }
]
DBLP>
```

## 5. Importation des données du fichier dblp.json dans MongoDB

```
mongoimport --host localhost:27017 --db DBLP --collection publis --jsonArray --type json --file dblp.json
```

### ♦ Explication de la commande:

- `--host localhost:27017` → Se connecte à MongoDB en local
- `--db DBLP` → Spécifie la base de données
- `--collection publis` → Spécifie la collection dans laquelle importer les données
- `--jsonArray` → Indique que le fichier contient un tableau JSON
- `--type json` → Spécifie le format du fichier
- `--file dblp.json` → Indique le fichier à importer

```

PS C:\Users\nolan\Desktop\non_relationnal_database_docker_mongodb> mongoimport --host local
host:27017 --db DBLP --collection publis --jsonArray --type json --file dblp.json
2025-01-31T08:42:59.695+0100    connected to: mongodb://localhost:27017/
2025-01-31T08:43:02.695+0100    [#####.....] DBLP.publis  16.7MB/36.1MB (46.3
%)
2025-01-31T08:43:05.695+0100    [#####.....] DBLP.publis  32.6MB/36.1MB (90.3
%)
2025-01-31T08:43:06.366+0100    [#####.....] DBLP.publis  36.1MB/36.1MB (100.
0%)
2025-01-31T08:43:06.366+0100    118026 document(s) imported successfully. 0 document(s) fai
led to import.
PS C:\Users\nolan\Desktop\non_relationnal_database_docker_mongodb>

```

## Installation des outils nécessaires pour **mongoimport**

Si la commande **mongoimport** ne fonctionne pas, c'est probablement parce que les outils de ligne de commande MongoDB ne sont pas installés. Voici comment les installer et les configurer.

<https://www.mongodb.com/try/download/mongosync>

Télécharger "MongoDB Command Line Database Tools"

## 6. Vérifier que les données ont bien été insérées :

mongosh

use DBLP

db.publis.count() // Nombre total de publications importées

db.publis.findOne() // Vérifie un échantillon des données

```

DBLP> db.publis.count() // Nombre total de publications importées
DeprecationWarning: Collection.count() is deprecated. Use countDocu
ntCount.
118029
DBLP> db.publis.findOne() // Vérifie un échantillon des données
{
  _id: ObjectId('679c7eb9a029bd162dcb0ce5'),
  type: 'Book',
  title: 'BASE analysis of NoSQL database',
  year: 2015,
  publisher: 'Elsevier',
  authors: [ 'Chandra Ganesh' ],
  source: 'DBLP'
}
DBLP>

```

## II. Requêtes Base de Données DBLP :

### 1. Afficher toutes les publications de type "Book"

```
db.publis.find({ type: "Book" })
```

```
DBLP> db.publis.find({ type: "Book" })
[
  {
    _id: ObjectId('679c7eb9a029bd162dcb0ce5'),
    type: 'Book',
    title: 'BASE analysis of NoSQL database',
    year: 2015,
    publisher: 'Elsevier',
    authors: [ 'Chandra Ganesh' ],
    source: 'DBLP'
  },
  {
    _id: 'series/cogtech/364227662',
    type: 'Book',
    editor: 'Tsvi Kuflik',
    title: 'Ubiquitous Display Environments',
    year: 2012,
    publisher: 'Springer',
    series: 'Cognitive Technologies',
    booktitle: 'Ubiquitous Display Environments',
    url: 'db/series/cogtech/364227662.html',
    authors: [],
    isbn: [ '978-3-642-27662-0' ]
  },
  {
    _id: 'series/cogtech/364237376',
    type: 'Book',
    editor: 'Wolfgang Wahlster',
    title: 'SemProM - Foundations of Semantic Product Memories for the Internet of Things',
    year: 2013,
    publisher: 'Springer',
    series: 'Cognitive Technologies',
    booktitle: 'SemProM',
    url: 'db/series/cogtech/364237376.html',
    authors: [],
    isbn: [ '978-3-642-37376-3' ]
  },
  {
    _id: 'series/cogtech/Nugues14',
    type: 'Book',
    title: 'Language Processing with Perl and Prolog - Theories, Implementation, and Application',
    year: 2014,
    pages: { start: 1, end: 574 },
    publisher: 'Springer',
    series: 'Cognitive Technologies',
    authors: [ 'Pierre M. Nugues' ],
    isbn: [ '978-3-642-41463-3', '978-3-642-41464-0' ]
  },
]
```

### 2. Afficher la liste des publications depuis 2012

```
db.publis.find({ year: { $gte: 2012 } })
```

```

DBLP> db.publis.find({ year: { $gte: 2012 } })
[
  {
    _id: ObjectId('679c7eb9a029bd162dcb0ce5'),
    type: 'Book',
    title: 'BASE analysis of NoSQL database',
    year: 2015,
    publisher: 'Elsevier',
    authors: [ 'Chandra Ganesh' ],
    source: 'DBLP'
  },
  {
    _id: ObjectId('679c7ecaa029bd162dcb0ce6'),
    type: 'Article',
    title: 'The Role of Big Data Analytics in Revolutionizing Diabetes Management and Healthcare Decision-Making',
    year: 2025,
    publisher: 'IEEE Access',
    authors: [
      'Muhammad Nauman',
      'Ahmad S. Almadhor',
      'Mohammed Albekairi',
      'Ali R. Ansari',
      'Muhammad A. B. Fayyaz',
      'Raheel Nawaz'
    ],
    source: 'DBLP'
  },
  {
    _id: ObjectId('679c7ecaa029bd162dcb0ce7'),
    type: 'Article',
    title: 'NeuralACT: Accounting Analytics Using Neural Network for Real-Time Decision Making From Big Data',
    year: 2025,
    publisher: 'IEEE Access',
    authors: [
      'Leonidas Theodorakopoulos',
      'Alexandra Theodoropoulou',
      'Georgios Kampiotis',
      'Ioanna Kalliampakou'
    ],
    source: 'DBLP'
  },
  {
    _id: 'series/cogtech/364227662',
    type: 'Book',
    editor: 'Tsvi Kuflik',
    title: 'Ubiquitous Display Environments',
    year: 2012,
  }
]

```

### 3. Afficher la liste des publications de type "Book" depuis 2012

```
db.publis.find({ type: "Book", year: { $gte: 2012 } })
```

```

DBLP> db.publis.find({ type: "Book", year: { $gte: 2012 } })
[
  {
    _id: ObjectId('679c7eb9a029bd162dcb0ce5'),
    type: 'Book',
    title: 'BASE analysis of NoSQL database',
    year: 2015,
    publisher: 'Elsevier',
    authors: [ 'Chandra Ganesh' ],
    source: 'DBLP'
  },
  {
    _id: 'series/cogtech/364227662',
    type: 'Book',
    editor: 'Tsvi Kuflik',
    title: 'Ubiquitous Display Environments',
    year: 2012,
    publisher: 'Springer',
    series: 'Cognitive Technologies',
    booktitle: 'Ubiquitous Display Environments',
    url: 'db/series/cogtech/364227662.html',
    authors: [],
    isbn: [ '978-3-642-27662-0' ]
  },
  {
    _id: 'series/cogtech/364237376',
    type: 'Book',
    editor: 'Wolfgang Wahlster',
    title: 'SemProM - Foundations of Semantic Product Memories for the Internet of Things',
    year: 2013,
    publisher: 'Springer',
    series: 'Cognitive Technologies',
    booktitle: 'SemProM',
    url: 'db/series/cogtech/364237376.html',
    authors: [],
    isbn: [ '978-3-642-37376-3' ]
  },
  {
    _id: 'series/cogtech/Nugues14',
    type: 'Book',
    title: 'Language Processing with Perl and Prolog - Theories, Implementation, and Application',
    year: 2014,
    pages: { start: 1, end: 574 },
    publisher: 'Springer',
    series: 'Cognitive Technologies',
    authors: [ 'Pierre M. Nugues' ],
    isbn: [ '978-3-642-41463-3', '978-3-642-41464-0' ]
  },
]

```

#### 4. Afficher la liste des publications de "Michael Schmitz"

```
db.publis.find({ authors: "Michael Schmitz" })
```



```

DBLP> db.publis.find({ authors: "Michael Schmitz" })
[
  {
    _id: 'series/cogtech/BrandhermSNL13',
    type: 'Article',
    title: 'A SemProM Use Case: Health Care and Compliance.',
    pages: { start: 349, end: 361 },
    year: 2013,
    booktitle: 'SemProM',
    url: 'db/series/cogtech/364237376.html#BrandhermSNL13',
    authors: [
      'Boris Brandherm',
      'Michael Schmitz',
      'Robert Ne?elrath',
      'Frank Lehmann'
    ]
  },
  {
    _id: 'series/cogtech/SchmitzBNSS13',
    type: 'Article',
    title: 'Interaction Modalities for Digital Product Memories.',
    pages: { start: 261, end: 279 },
    year: 2013,
    booktitle: 'SemProM',
    url: 'db/series/cogtech/364237376.html#SchmitzBNSS13',
    authors: [
      'Michael Schmitz',
      'Boris Brandherm',
      'J?rg Neidig',
      'Stefanie Schachtl',
      'Matthias Schuster'
    ]
  },
  {
    _id: 'series/cogtech/WahlsterFGHJKSSW11',
    type: 'Article',
    title: 'The Shopping Experience of Tomorrow: Human-Centered and Resource-Adaptive.',
    pages: { start: 205, end: 237 },
    year: 2011,
    booktitle: 'Resource-Adaptive Cognitive Processes',
    url: 'db/series/cogtech/354089408.html#WahlsterFGHJKSSW11',
    authors: [
      'Wolfgang Wahlster',
      'Michael Feld',
      'Patrick Gebhard',
      'Dominikus Heckmann',
      'Ralf Jung',
      'Michael Kruppa',
      'Michael Schmitz'
    ]
  }
]

```

## 5. Récupérer la liste de tous les éditeurs distincts (publisher)

```
db.publis.distinct("publisher")
```

```

DBLP> db.publis.distinct("publisher")
[
  'A K Peters',
  'AAAI Press',
  'AAAI/MIT Press',
  'ACM',
  'ACM Press / Addison-Wesley',
  'ACM Press and Addison-Wesley',
  'ACM Press and IEEE Computer Society Press',
  'AK Peters',
  'AKA',
  'AMS Chelsea Publishing',
  'APress',
  'ASQC Quality Press',
  'Ablex Publishing Corporation',
  'Academia Richarz',
  'Academic Internet Publ.',
  'Academic Press',
  'Academic Service',
  'Academy Chicago Publications',
  'Addison Wesley',
  'Addison-Wesley',
  'Addison-Wesley & ACM Press',
  'Addison-Wesley-Longman',
  'Addison-Wesley-Longman; ACM Press',
  'Advanced Technology',
  'Aka Akademische Verlagsgesellschaft Aka GmbH, Berlin',
  'Akad?niai Kiad?, Budapest, Hungary',
  'Akademie Verlag',
  'Akademische Verlagsgesellschaft',
  'Allworth Press',
  'Allyn and Bacon, Inc.',
  'Alpha Books',
  'American Mathematical Society',
  'American Scientific Publishers',
  'Apress',
  'Arnold',
  'Artech House',
  'Association for Symbolic Logic',
  'Athena Scientific',
  'Atlantis Press',
  'Auerbach Publ.',
  'Auerbach Publications',
  'B.I.-Wissenschaftsverlag',
  'BI-Wissenschaftsverlag',
  'BLV',
  'Basic Books',
  'Beck',
  'Belser Presse',

```

## 6. Récupérer la liste de tous les auteurs distincts

```
db.publis.distinct("authors")
```

```
DBLP> db.publis.distinct("authors")
[
  '??igo Garc?',
  '?agatan Taskin',
  '?agatay Dikici',
  '?aglayan Erdem',
  '?agri ?zgenc Etemoglu',
  '?agri Etemoglu',
  '?agri Tekinay',
  '?berton Marinho',
  '?d?m B. Csap?',
  '?d?m G?bor',
  '?d?m Koll?',
  '?d?m Monostori',
  '?etin Kaya Ko?',
  '?gnes S?ndor',
  '?goston E. Eiben',
  '?igdem Eroglu Erdem',
  '?igdem Gencel',
  '?ivind Kure',
  '?ke Andersson',
  '?ke Arvidsson',
  '?ke Bj?rck',
  '?ke Gr?nlund',
  '?ke Wikstr?',
  '?kos Bal?zs',
  '?kos Hajnal',
  '?kos Horv?th',
  '?kos Kiss 0001',
  '?kos L?deczi',
  '?kos Mil?nkovich',
  '?kos Nemcsics',
  '?kos Zar?ndy',
  '?lafur Ing??rsson',

```

## 7. Trier les publications de "Toru Ishida" par titre et page de début

```
db.publis.find({ authors: "Toru Ishida" }).sort({ title: 1, pages: 1 })
```

```
DBLP> db.publis.find({ authors: "Toru Ishida" }).sort({ title: 1, pages: 1 })
[
  {
    _id: 'conf/cscw/Bouz-AsalI11',
    type: 'Article',
    title: 'Analyzing patterns in composing teaching materials from the web.',
    pages: { start: 605, end: 608 },
    year: 2011,
    booktitle: 'CSCW',
    url: 'db/conf/cscw/cscw2011.html#Bouz-AsalI11',
    authors: [ 'Nadia Bouz-Asal', 'Rieko Inaba', 'Toru Ishida' ]
  },
  {
    _id: 'series/cogtech/TanakaMI11',
    type: 'Article',
    title: 'Cascading Translation Services.',
    pages: { start: 103, end: 117 },
    year: 2011,
    booktitle: 'The Language Grid',
    url: 'db/series/cogtech/364221177.html#TanakaMI11',
    authors: [ 'Rie Tanaka', 'Yohei Murakami', 'Toru Ishida' ]
  },
  {
    _id: 'conf/cscw/YamauchiYSI00',
    type: 'Article',
    title: 'Collaboration with Lean Media: how open-source software succeeds.',
    pages: { start: 329, end: 338 },
    year: 2000,
    booktitle: 'CSCW',
    url: 'db/conf/cscw/cscw2000.html#YamauchiYSI00',
    authors: [
      'Yutaka Yamauchi',
      'Makoto Yokozawa',
      'Takeshi Shinohara',
      'Toru Ishida'
    ]
  }
]
```

## 8. Afficher uniquement le titre et le nombre de pages des publications de "Toru Ishida"

```
db.publis.find(
  { authors: "Toru Ishida" },
  { title: 1, pages: 1, _id: 0 }
)
```

```
DBLP> db.publis.find(
...   { authors: "Toru Ishida" },
...   { title: 1, pages: 1, _id: 0 }
... )
[
  {
    title: 'Collaborative Translation Protocols.',
    pages: { start: 215, end: 230 }
  },
  {
    title: 'Integrating Smart Classroom and Language Services.',
    pages: { start: 263, end: 277 }
  },
  {
    title: 'Pipelining Software and Services for Language Processing.',
    pages: { start: 247, end: 262 }
  },
  {
    title: 'Service Supervision for Runtime Service Management.',
    pages: { start: 69, end: 83 }
  },
  {
  }
```

## 9. Compter le nombre de publications de "Toru Ishida"

```
db.publis.countDocuments({ authors: "Toru Ishida" })
```

```
DBLP> db.publis.countDocuments({ authors: "Toru Ishida" })
22
DBLP>
```

## 10. Compter le nombre de publications depuis 2011, groupées par type

```
db.publis.aggregate([
  { $match: { year: { $gte: 2011 } } },
  { $group: { _id: "$type", count: { $sum: 1 } } }
])
```

```
DBLP> db.publis.aggregate([
...   { $match: { year: { $gte: 2011 } } },
...   { $group: { _id: "$type", count: { $sum: 1 } } }
... ])
[
  { _id: 'Article', count: 27208 },
  { _id: 'Book', count: 1743 },
  { _id: 'Phd', count: 551 }
]
DBLP>
```

## 11. Compter le nombre de publications par auteur et trier en ordre croissant

```
db.publis.aggregate([
  { $unwind: "$authors" }, // Sépare les auteurs en plusieurs documents
  { $group: { _id: "$authors", count: { $sum: 1 } } }, // Compte par auteur
  { $sort: { count: 1 } } // Trie en ordre croissant
])
```

```
DBLP> db.publis.aggregate([
...   { $unwind: "$authors" }, // Sépare les auteurs en plusieurs documents
...   { $group: { _id: "$authors", count: { $sum: 1 } } }, // Compte par auteur
...   { $sort: { count: 1 } } // Trie en ordre croissant
... ])
[
  { _id: 'S. Sch?', count: 1 },
  { _id: 'Fabrizio Orlandi', count: 1 },
  { _id: 'Mohammad A. Rawashdeh', count: 1 },
  { _id: 'Ofar Amrani', count: 1 },
  { _id: 'Remy L?hembre', count: 1 },
  { _id: 'Tien-Te Hsiao', count: 1 },
  { _id: 'Nabila Bousbia', count: 1 },
  { _id: 'Burton Clark', count: 1 },
  { _id: 'Hoyong Jang', count: 1 },
  { _id: 'Ray Rolen', count: 1 },
  { _id: 'Mar?a Rosa Galli', count: 1 },
  { _id: 'Paula Cifuentes', count: 1 },
  { _id: 'Pierluigi Argoneto', count: 1 },
  { _id: 'Darrin E. Jones', count: 1 },
  { _id: 'Sami Nuuttila', count: 1 },
  { _id: 'Chikara Yoshida', count: 1 },
  { _id: 'Jennis Meyer-Spradow', count: 1 },
  { _id: 'Xue-Mei Zhang', count: 1 },
  { _id: 'Irin Lekka', count: 1 },
  { _id: 'Wendy Gersten', count: 1 }
]
Type "it" for more
DBLP>
```

## 12. Compter le nombre de publications par auteur et trier en ordre décroissant

```
db.publis.aggregate([
  { $unwind: "$authors" }, // Sépare les auteurs en plusieurs documents
  { $group: { _id: "$authors", count: { $sum: 1 } } }, // Compte par auteur
  { $sort: { count: -1 } } // Trie en ordre croissant
])
```

```

DBLP> db.publis.aggregate([ { $unwind: "$authors" }, /* Sépare les auteurs en plusieurs documents*/ { $group: { _id: "$authors", count: { $sum: 1 } } }, /* Compte par auteur*/ { $sort: { count: -1 } } /* Trie en ordre croissant*/ ] )
[
  { _id: 'Georgios B. Giannakis', count: 95 },
  { _id: 'Alberto L. Sangiovanni-Vincentelli', count: 91 },
  { _id: 'Oscar Castillo', count: 87 },
  { _id: 'Gert-Jan de Vreede', count: 82 },
  { _id: 'Hermann Ney', count: 82 },
  { _id: 'David Blaauw', count: 81 },
  { _id: 'Robert O. Briggs', count: 81 },
  { _id: 'Haizhou Li', count: 79 },
  { _id: 'Abdelhak M. Zoubir', count: 79 },
  { _id: 'John H. L. Hansen', count: 78 },
  { _id: 'Jacob Benesty', count: 77 },
  { _id: 'Patricia Melin', count: 72 },
  { _id: 'Petar M. Djuric', count: 72 },
  { _id: 'Barry L. Nelson', count: 71 },
  { _id: 'Martin Vetterli', count: 71 },
  { _id: 'Marc Moonen', count: 67 },
  { _id: 'Alex Acero', count: 67 },
  { _id: 'Jos? M. F. Moura', count: 66 },
  { _id: 'Li Deng', count: 66 },
  { _id: 'Truong Q. Nguyen', count: 66 }
]
Type "it" for more
DBLP>

```