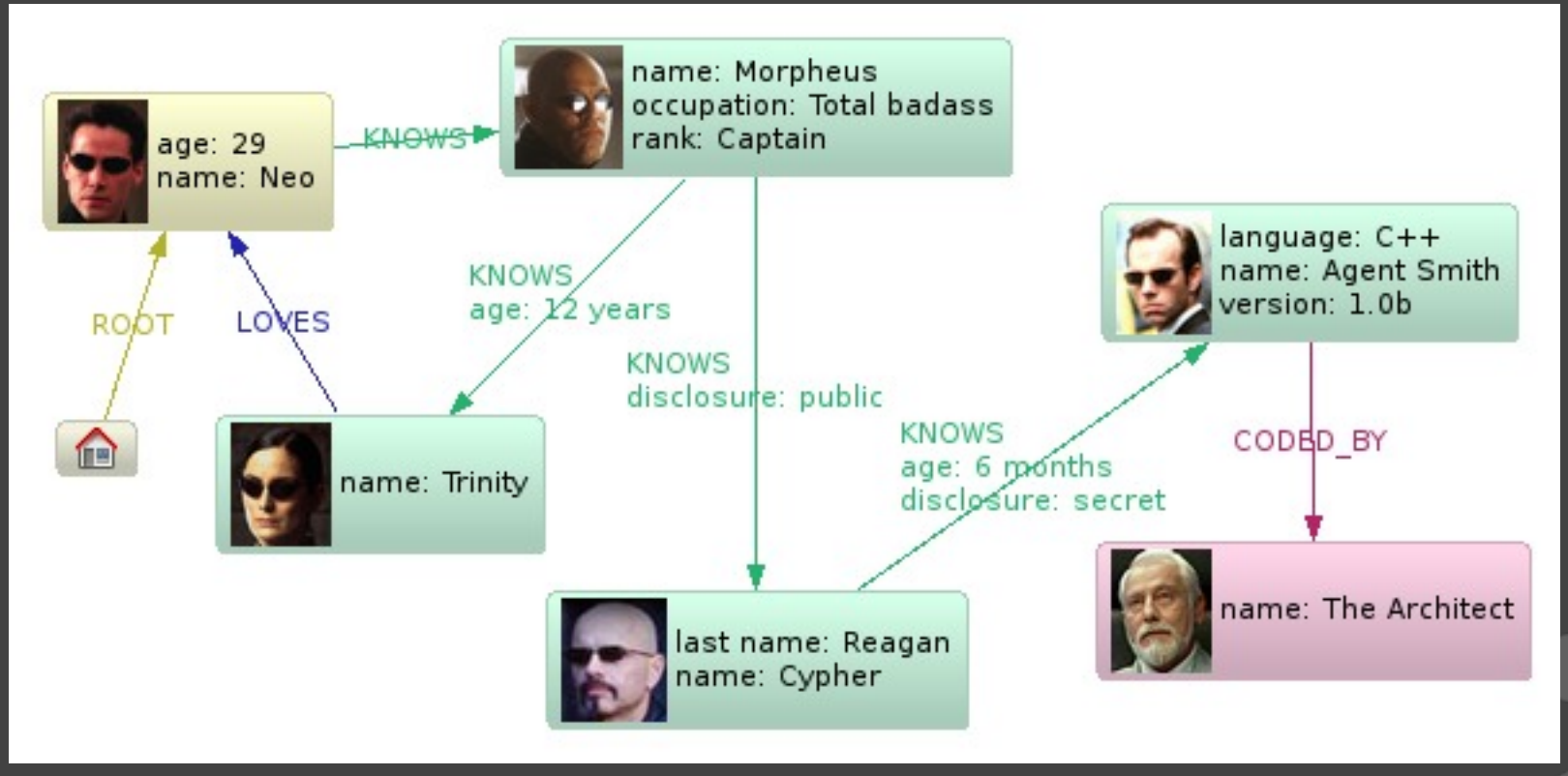
How to build a developer community with limited resources

GOTO CPH 2012

Peter Neubauer
Founder, Neo Technology

#neo4j
@peterneubauer
peter@neotechnology.com

What is Neo4j?



(friends)-[:create]->(project)-[:supports]->(community)

Neo4j
the graph database

What is Neo4j?

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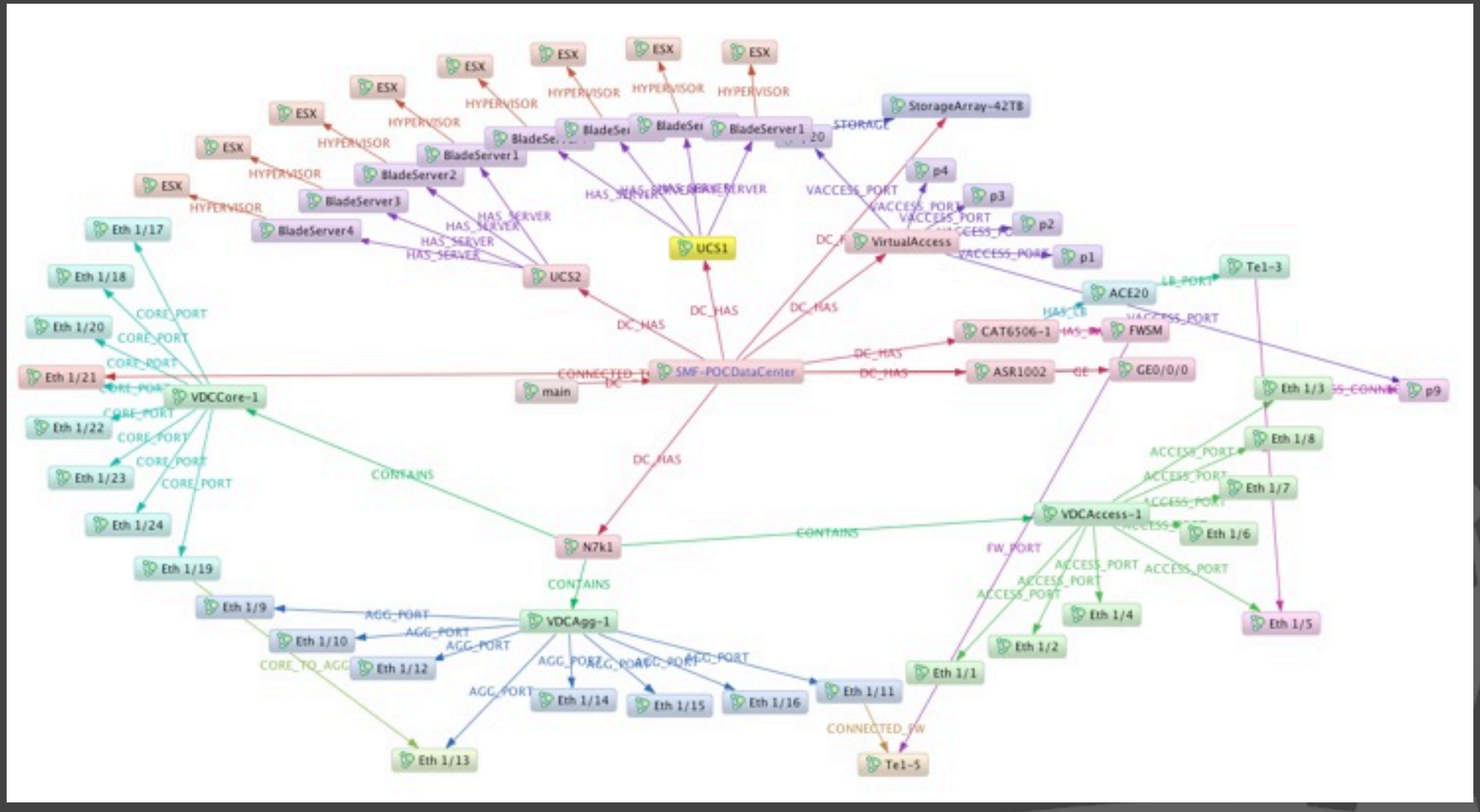
What is it good for?



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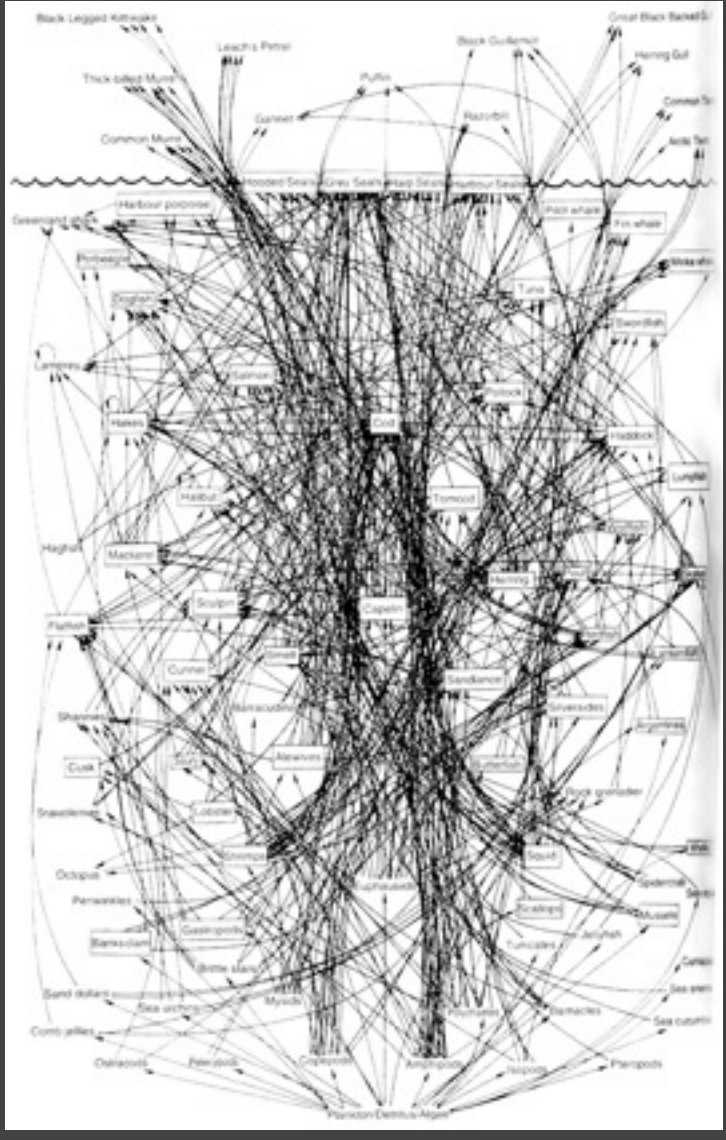

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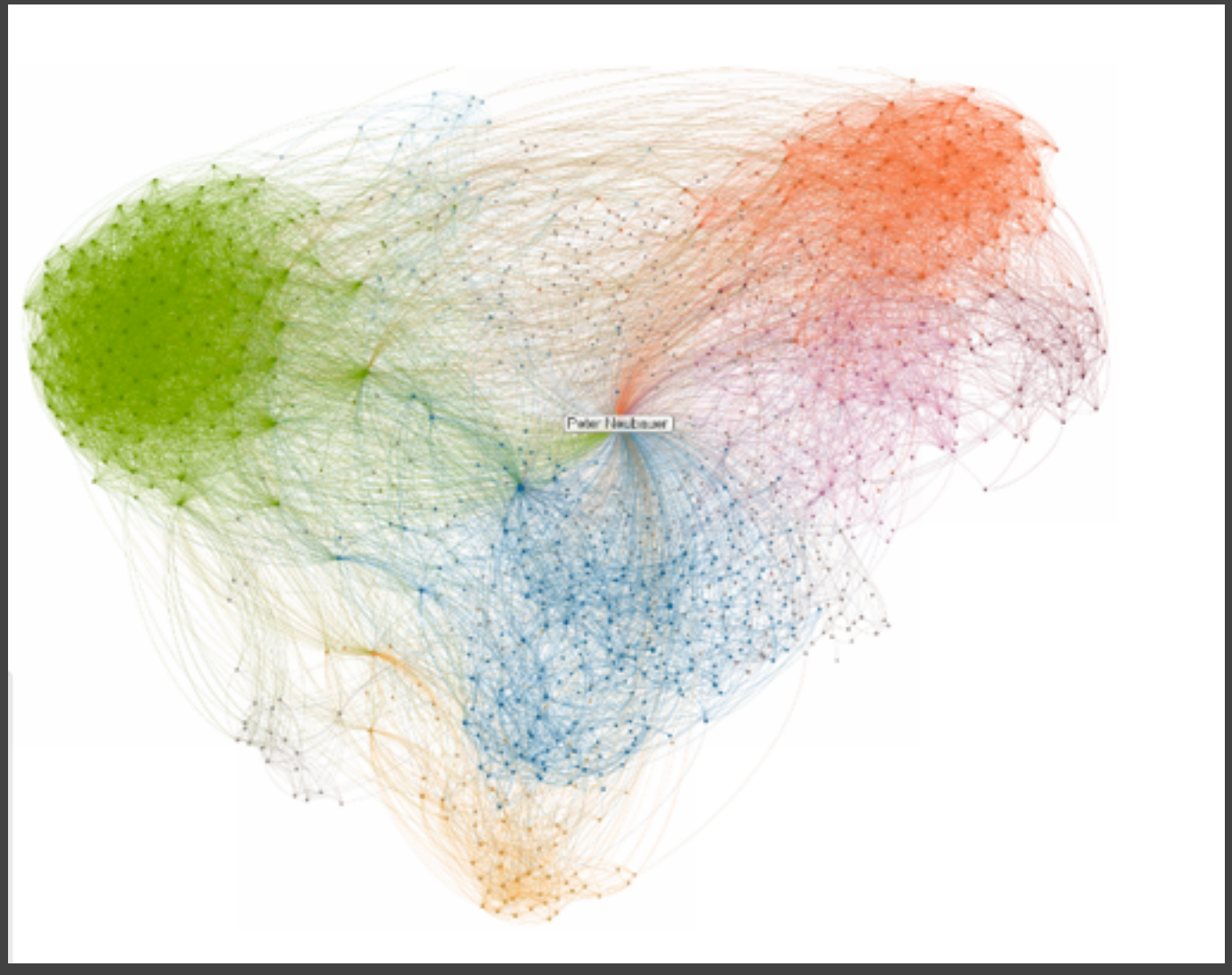

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The (G)Raffle

http://graffle-goto-cph.herokuapp.com/

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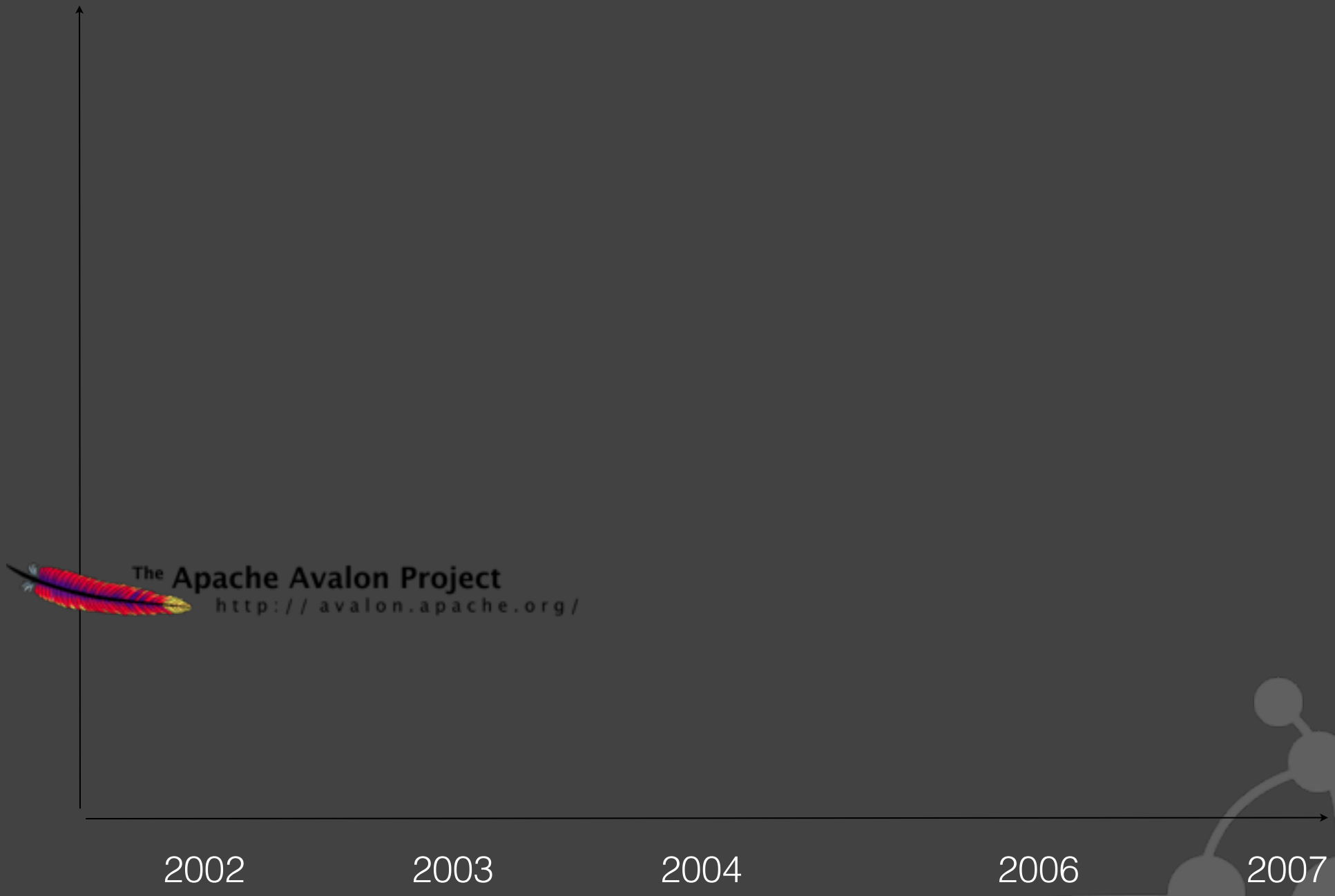
the graph database



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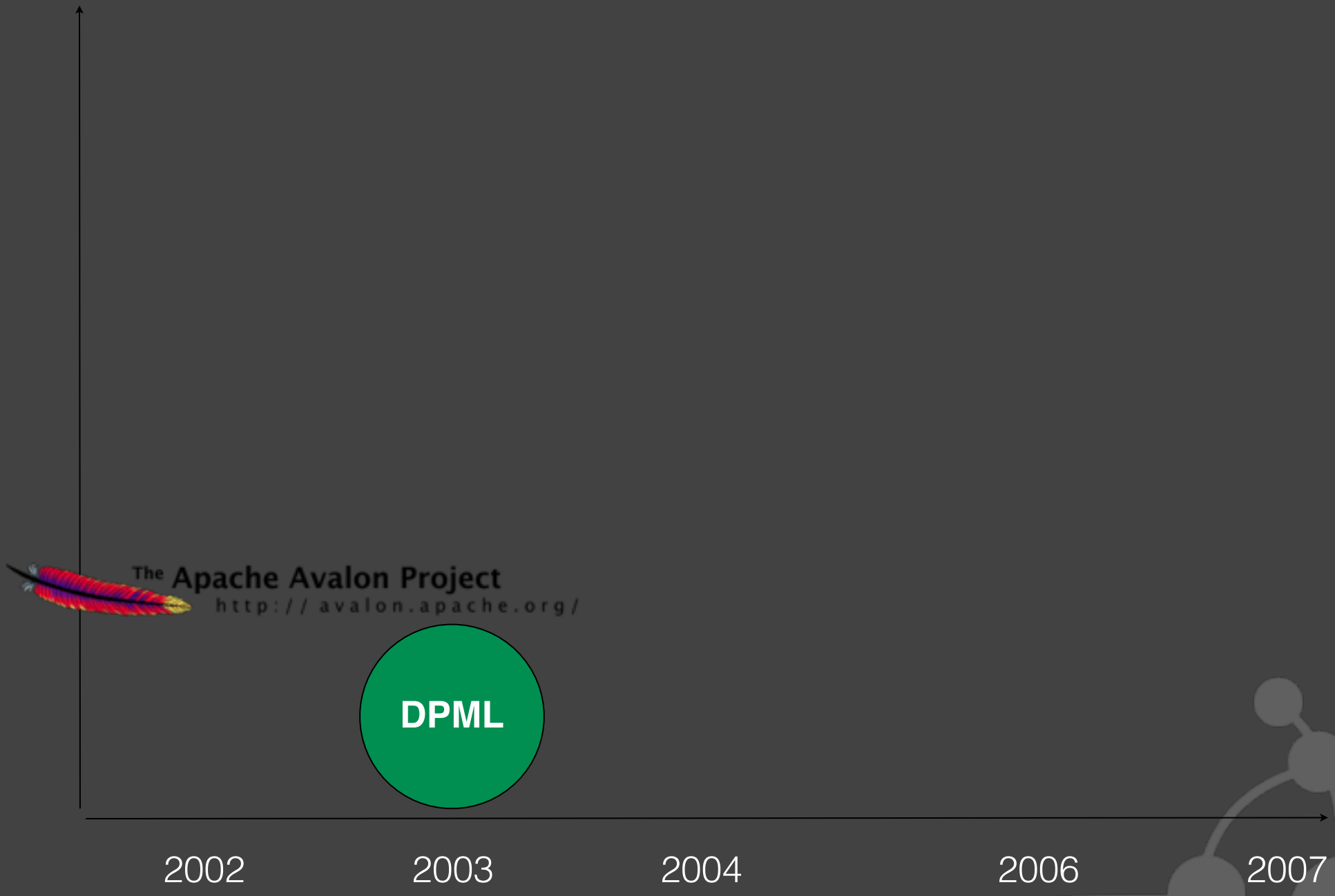

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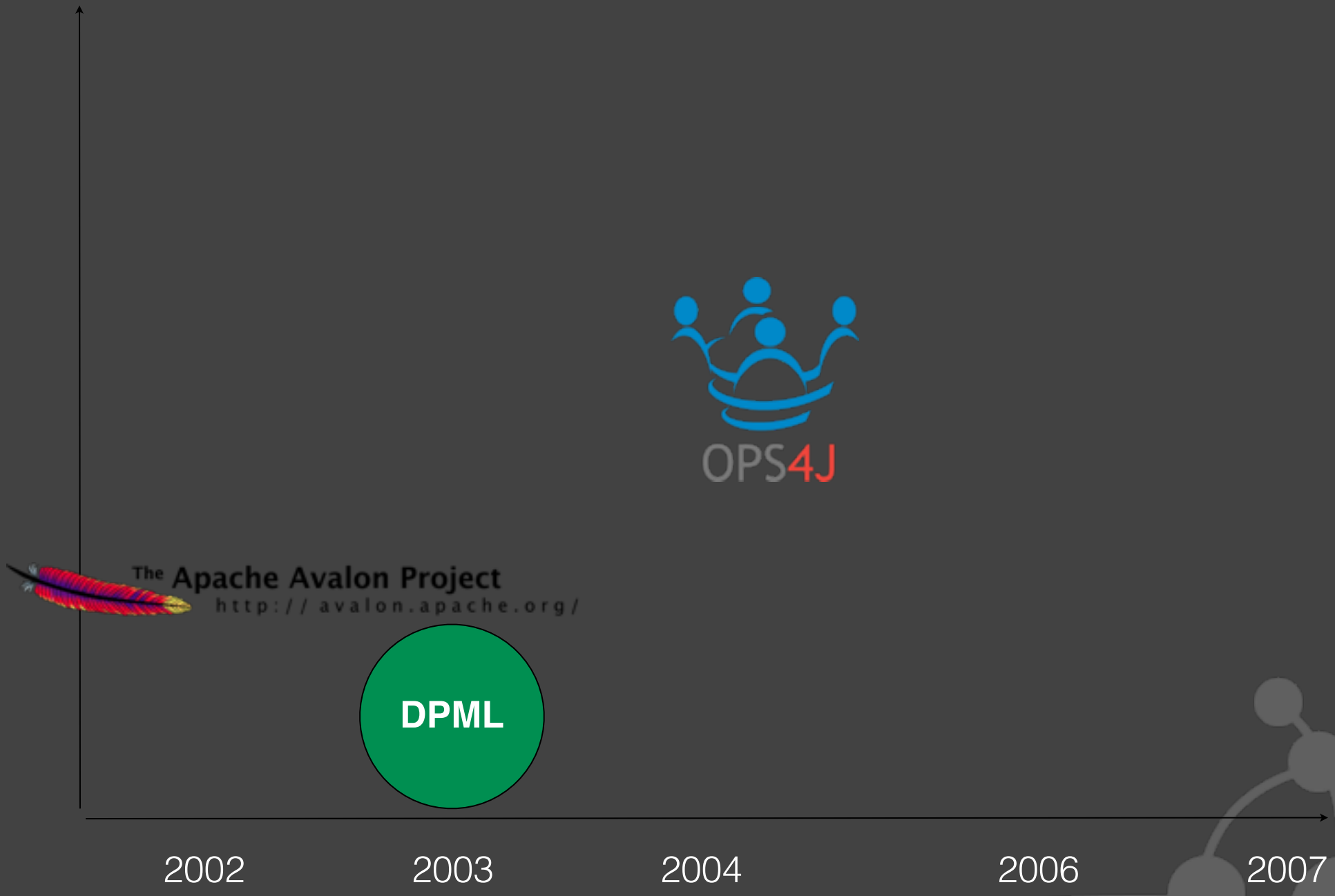

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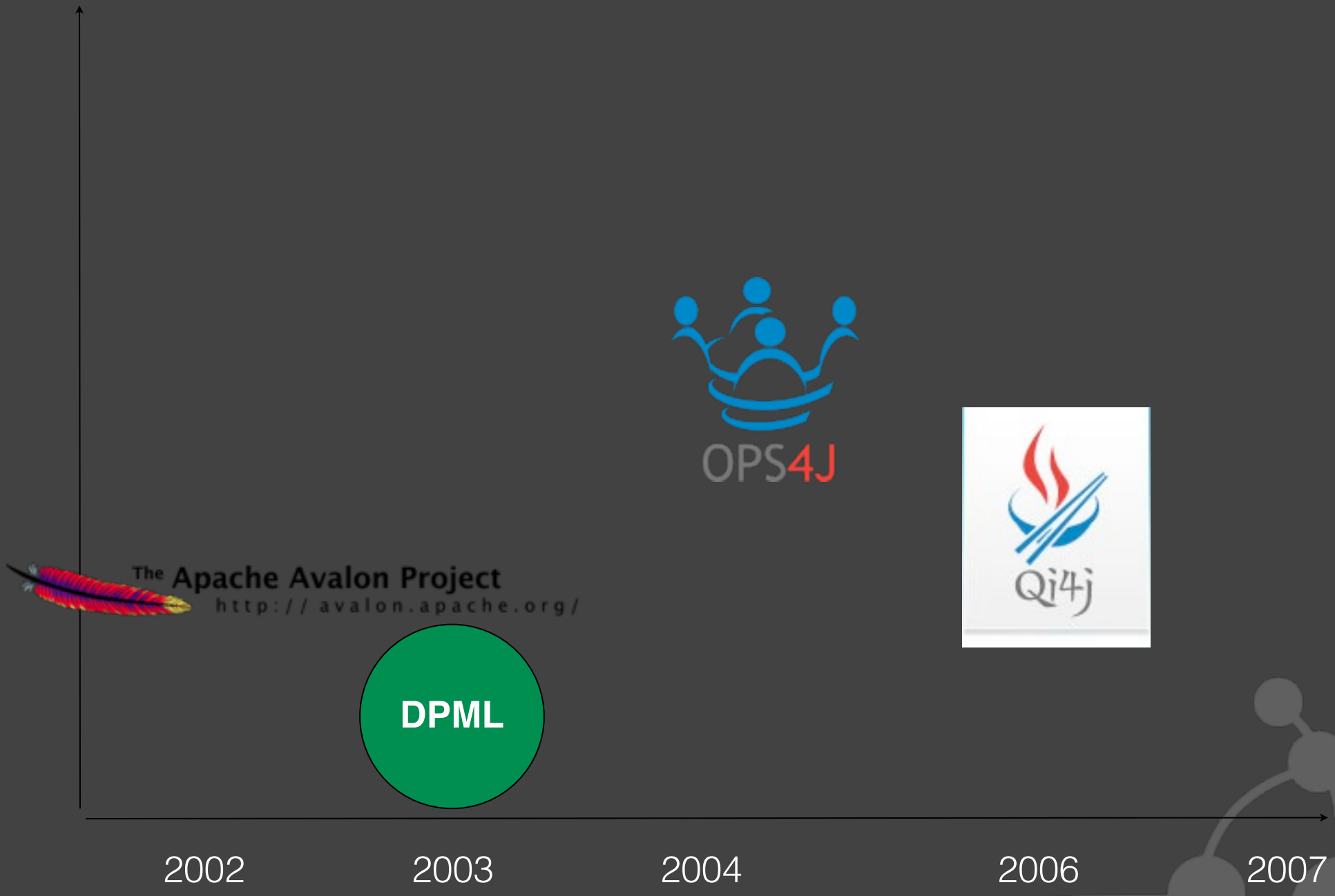
the graph database



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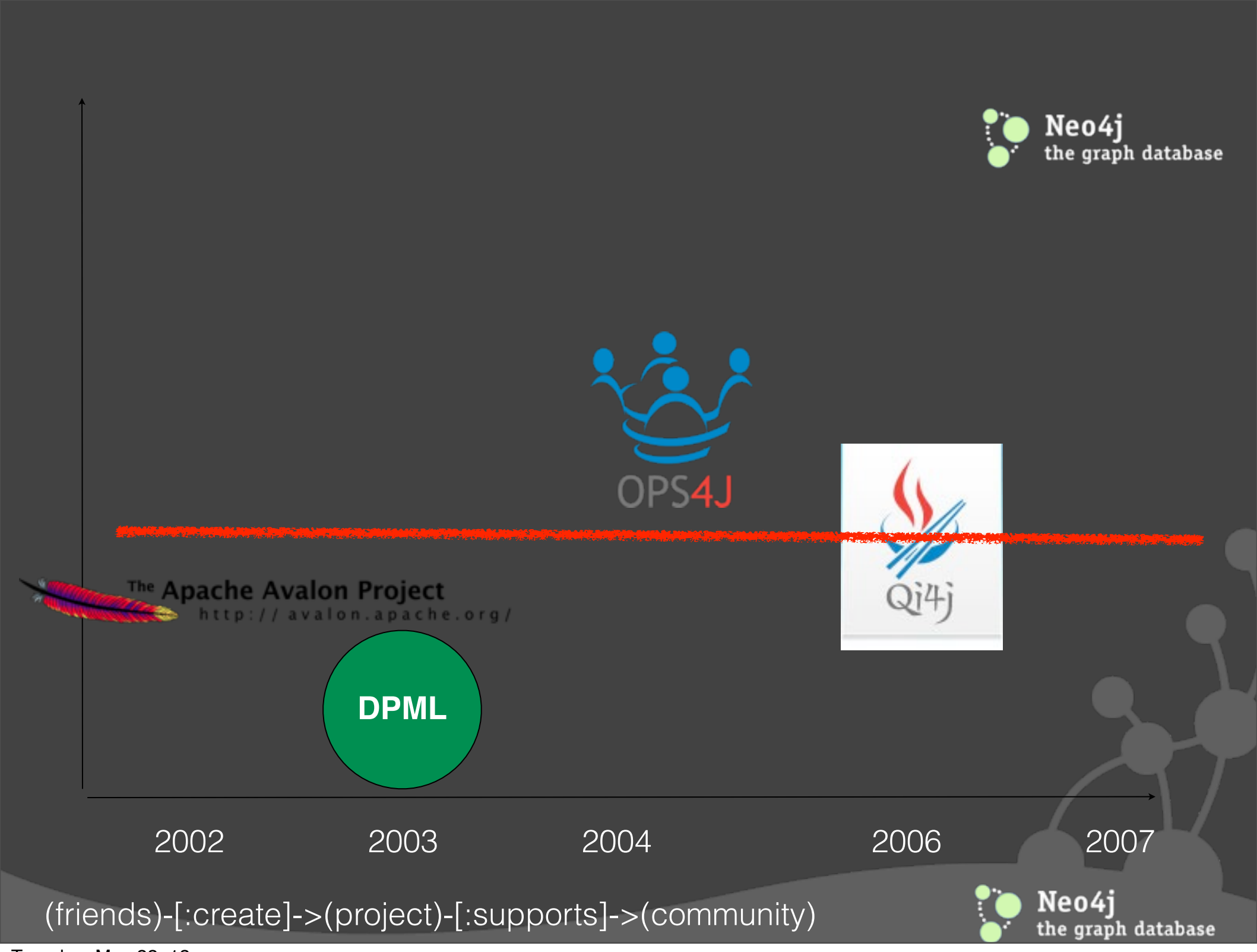
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OPS4J
Qi4j
The Apache Avalon Project
http://avalon.apache.org/
DPML
2002
2003
2004
2006
2007
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#oss dimensions

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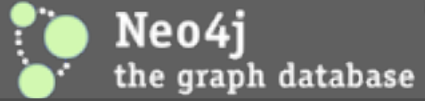

#oss dimensions

- **Free and Commercial**

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#oss dimensions

- Free and Commercial
- Acting and Saying

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#oss dimensions

- Free and Commercial
- Acting and Saying
- Users and Contributors

(friends)-[:create]->(project)-[:supports]->(community)

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#oss dimensions

- Free and Commercial
- Acting and Saying
- Users and Contributors
- Giving and Taking

(friends)-[:create]->(project)-[:supports]->(community)

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#oss dimensions

- Free and Commercial
- Acting and Saying
- Users and Contributors
- Giving and Taking
- Distribution and Cloud

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#oss dimensions

- Free and Commercial
- Acting and Saying
- Users and Contributors
- Giving and Taking
- Distribution and Cloud
- Freedom and Measurement

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#oss dimensions

- Free and Commercial
- Acting and Saying
- Users and Contributors
- Giving and Taking
- Distribution and Cloud
- Freedom and Measurement
- Focus and Innovation

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#oss dimensions

- Free and Commercial
- Acting and Saying
- Users and Contributors
- Giving and Taking
- Distribution and Cloud
- Freedom and Measurement
- Focus and Innovation
- Licensing and Adoption

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#oss dimensions

- Free and Commercial
- Acting and Saying
- Users and Contributors
- Giving and Taking
- Distribution and Cloud
- Freedom and Measurement
- Focus and Innovation
- Licensing and Adoption
- Code and Documentation

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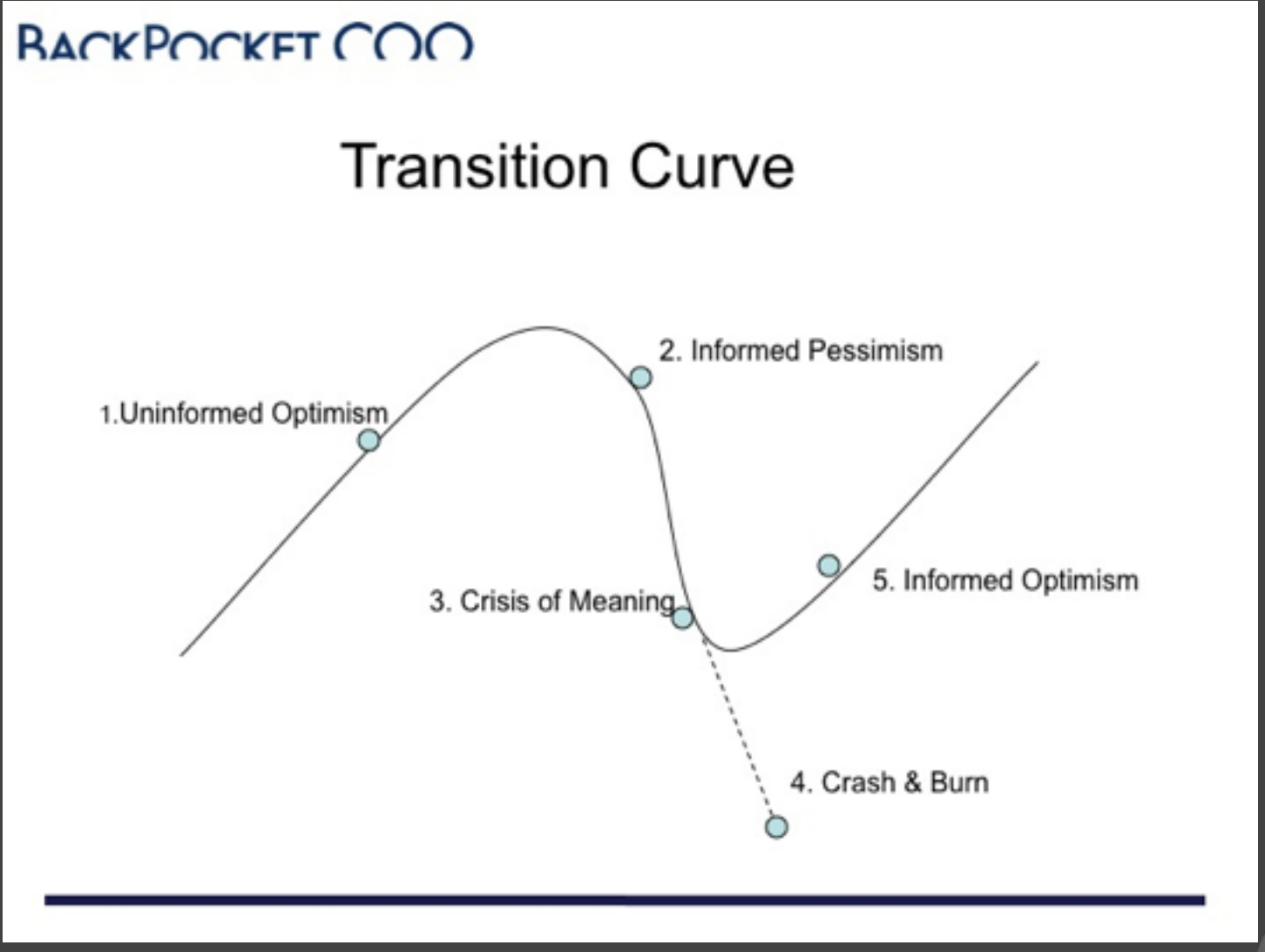
The hype curve



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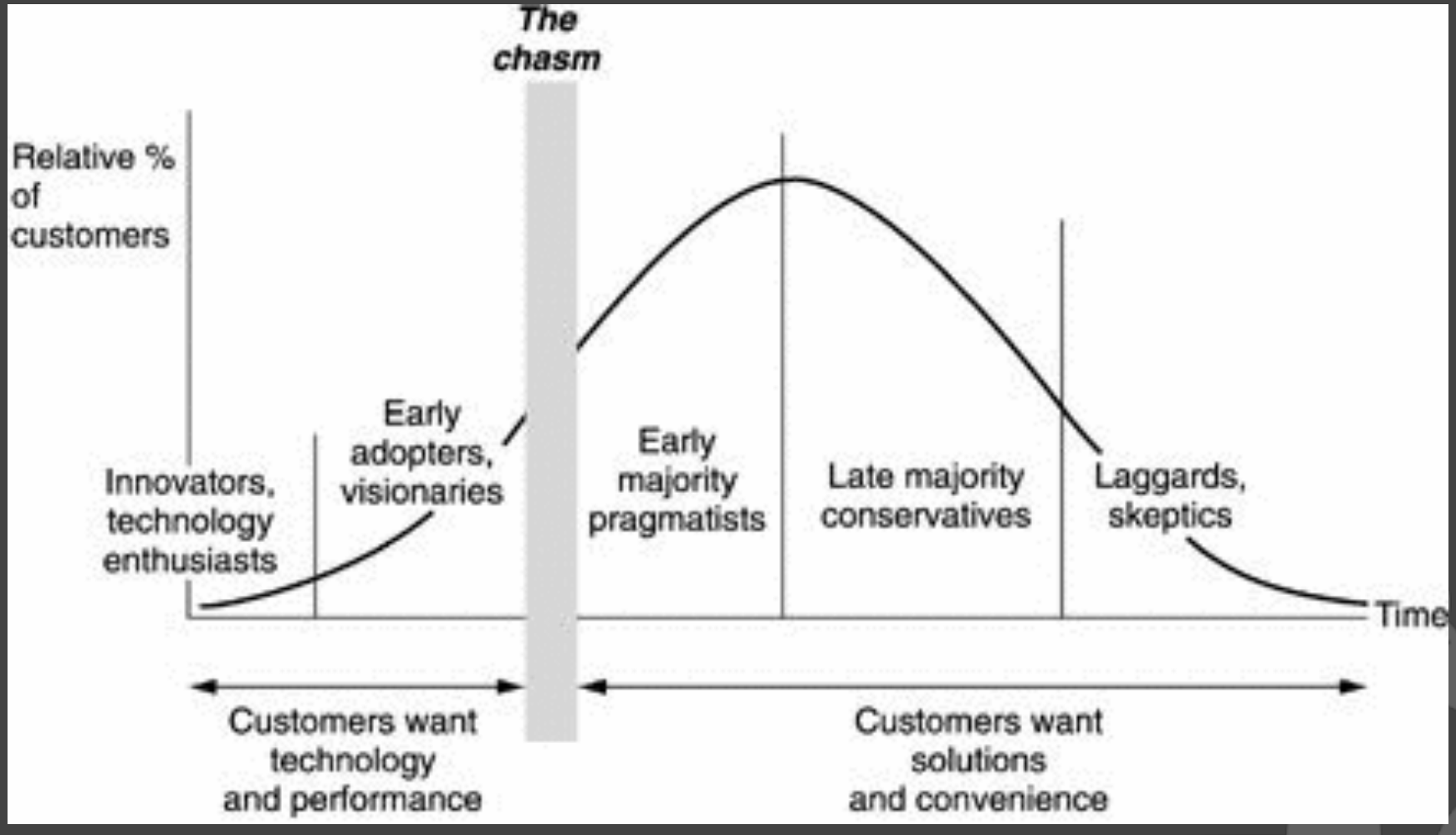
100% TOBACCO

The chasm



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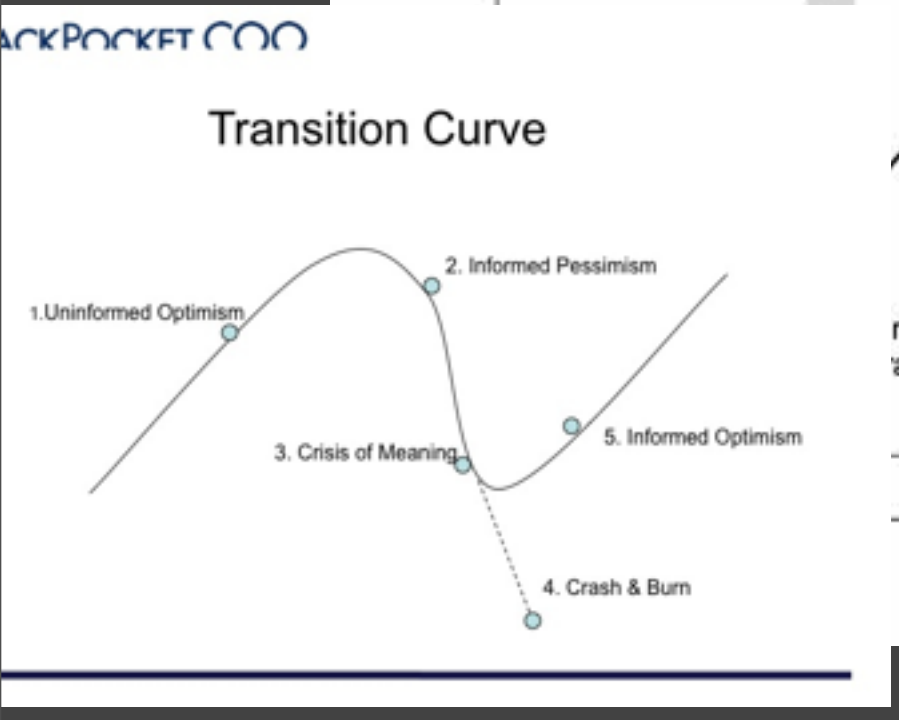
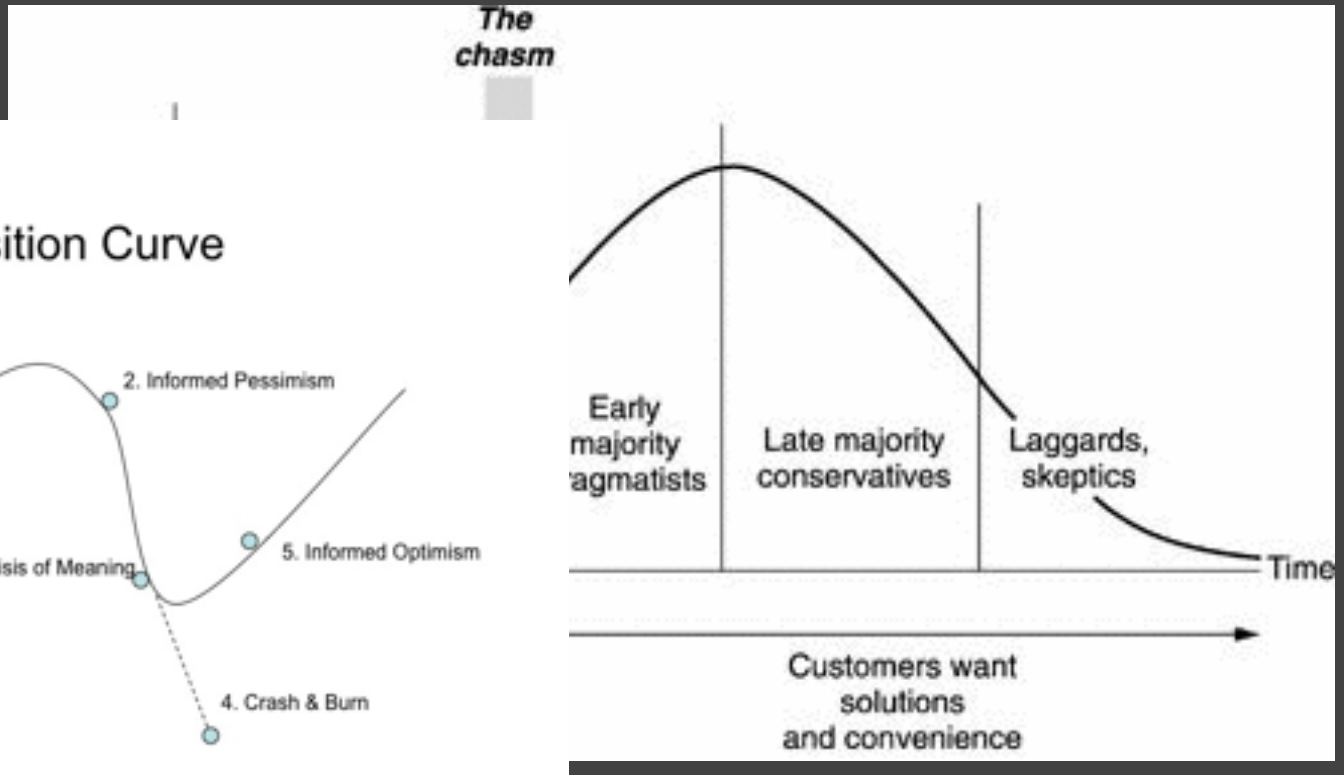
Theory





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Reality

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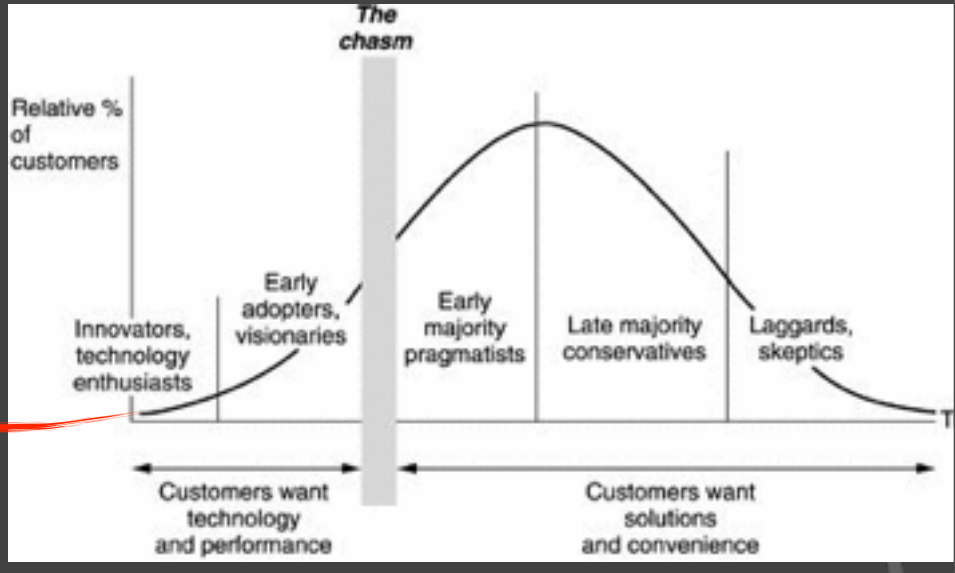

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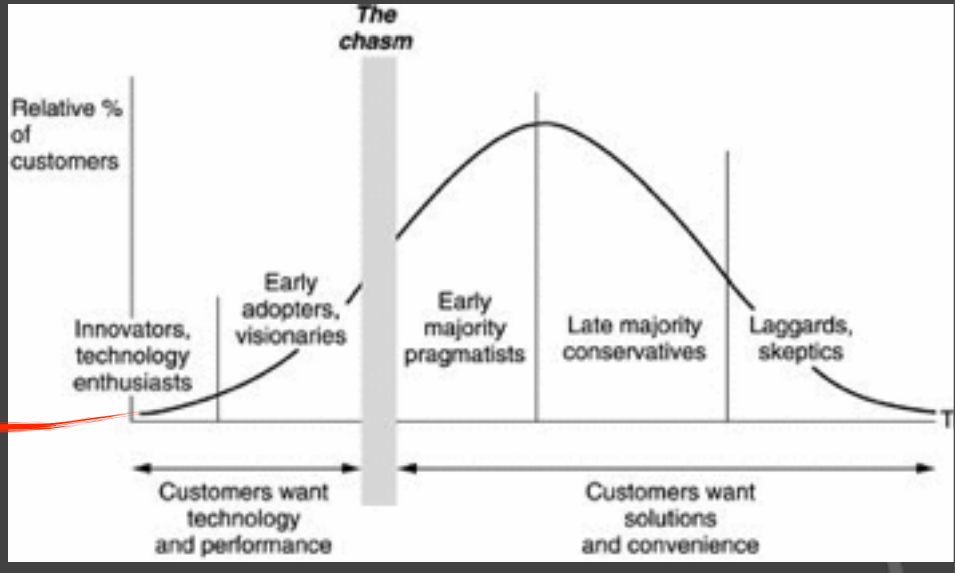
Reality

2000



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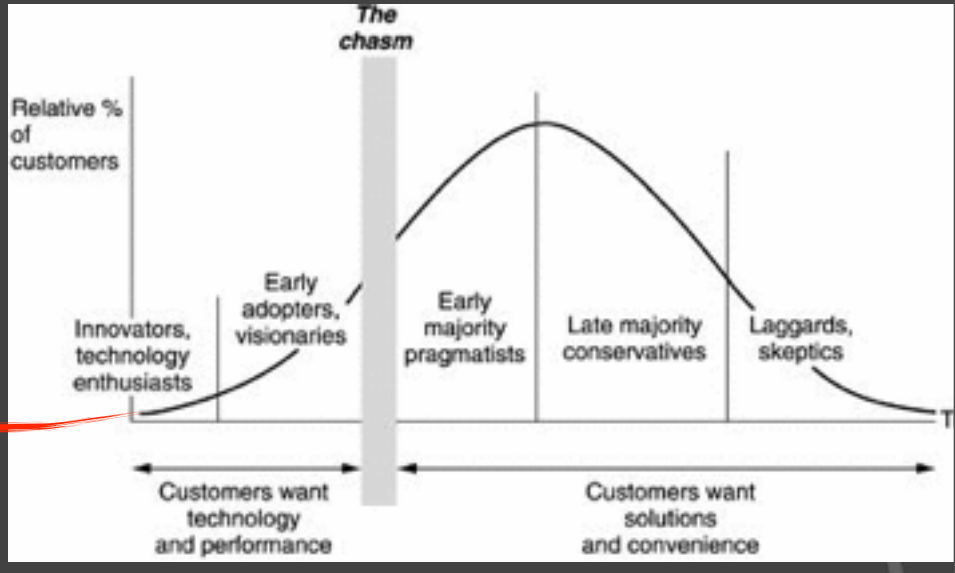
Reality

2000 2003



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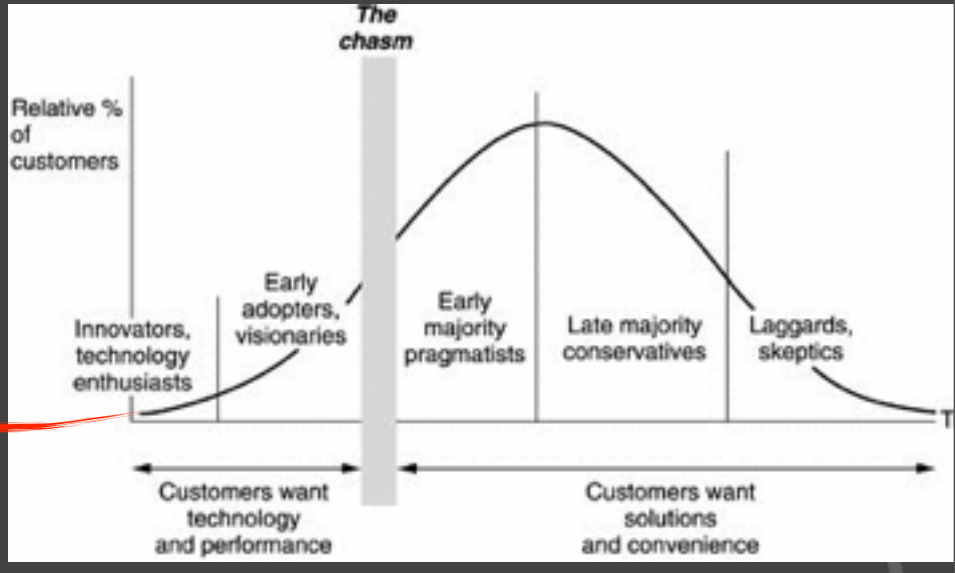
Reality



2000 2003 2007

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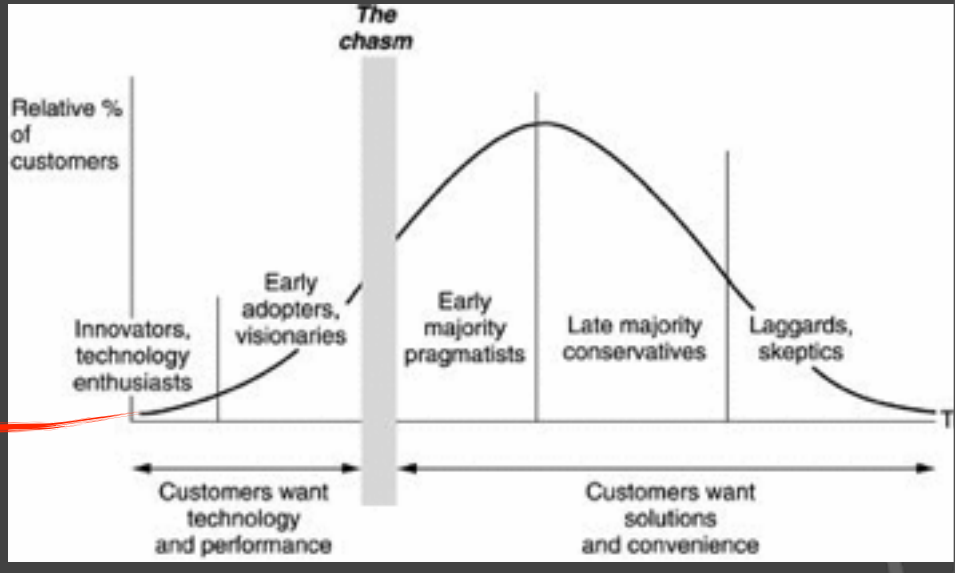
Reality



2000 2003 2007 2009

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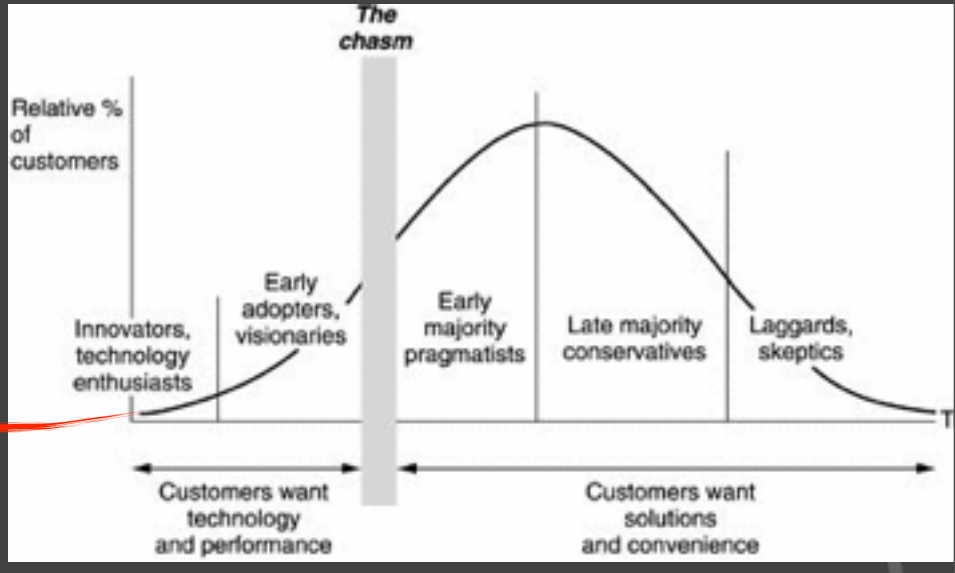
Reality



2000 2003 2007 2009 2013

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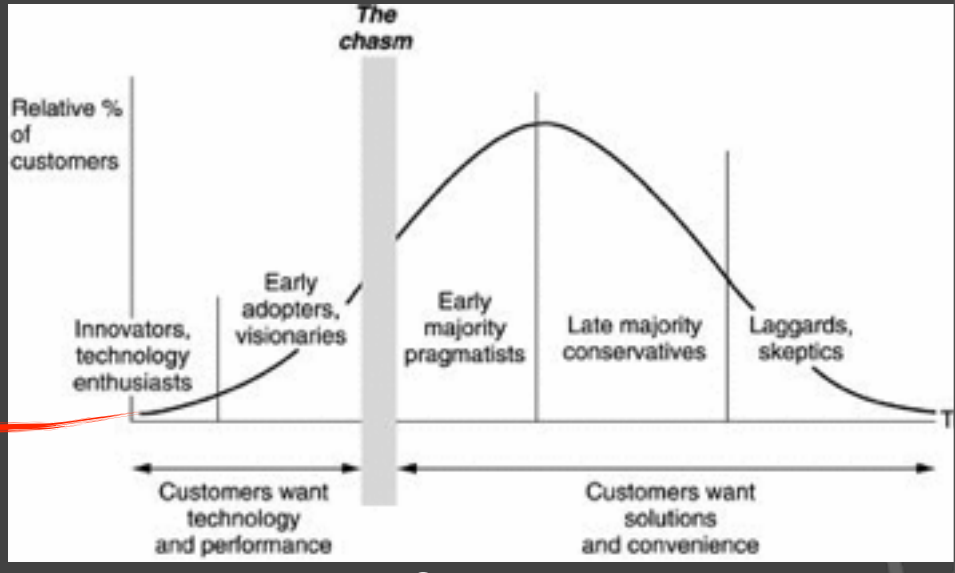
Reality



2000 2003 2007 2009 2013 ?

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What we learned

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What we learned

Value in relationships

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What we learned

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What we learned

Central teams don’t scale

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What we learned

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What we learned

Document for the long term, Wikis suck.

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What we learned

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What we learned

Empower others to produce content

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What we learned

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What we learned

Be brave, test, measure, dogfood, automate

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What we learned

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What we learned

Listen to all channels

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What we learned

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What we learned

Support your contributors

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What we learned

(friends)-[:create]->(project)-[:supports]->(community)

What we learned

Beyond budgeting

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What we learned

(friends)-[:create]->(project)-[:supports]->(community)

What we learned

No vendor talk

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What we learned

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What we learned

Usage feedback is ok, if honest.

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Our programs

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Our programs

Contributors

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Our programs

Contributors
Issues

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Our programs

Contributors

Issues

Response

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Our programs

Contributors

Issues

Response

Onboarding

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Our programs

Contributors

Issues

Response

Onboarding

Core team engagement

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Our programs

Contributors

Issues

Response

Onboarding

Core team engagement

Mindshare

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Our programs

Contributors

Issues

Response

Onboarding

Core team engagement

Mindshare

Infrastructure

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The docs toolchain

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The docs toolchain

Produce

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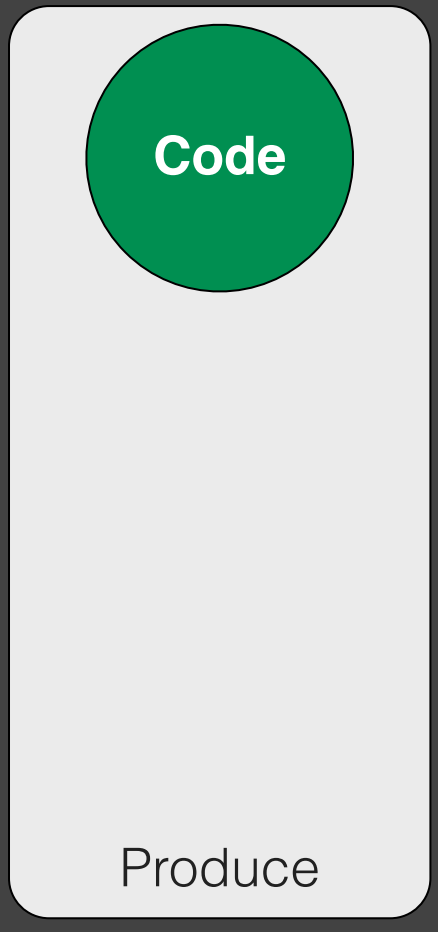
The docs toolchain



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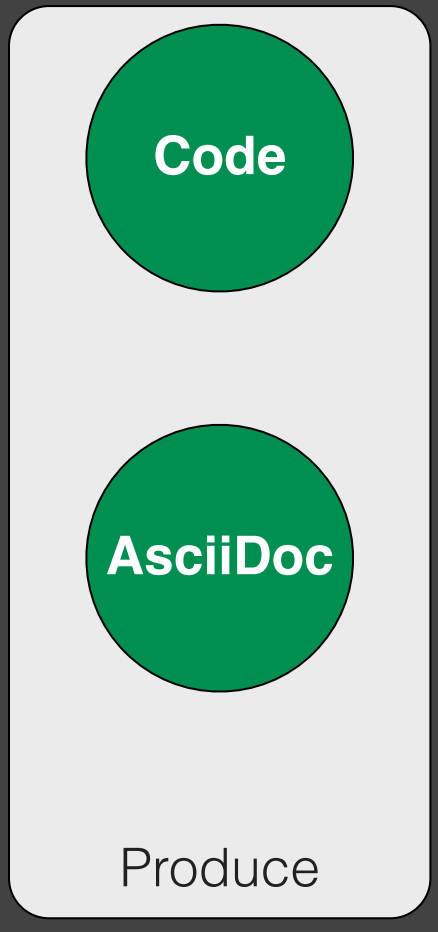
The docs toolchain



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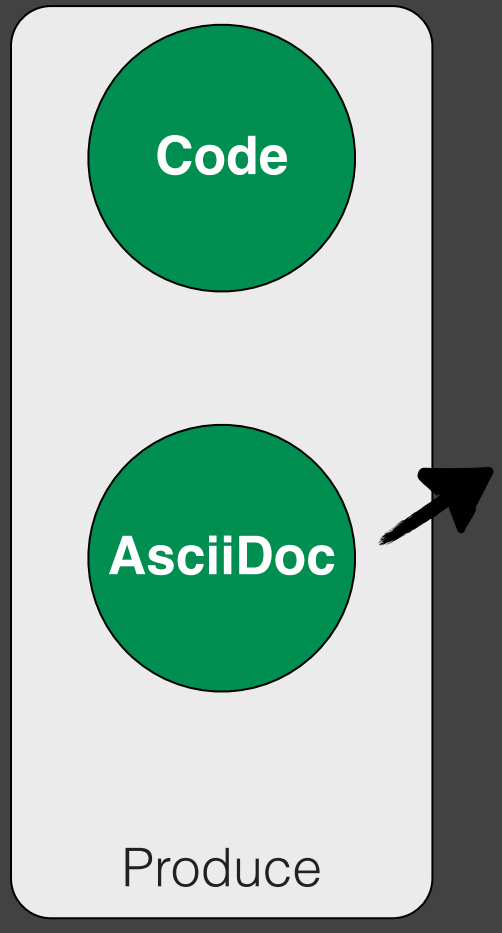
The docs toolchain



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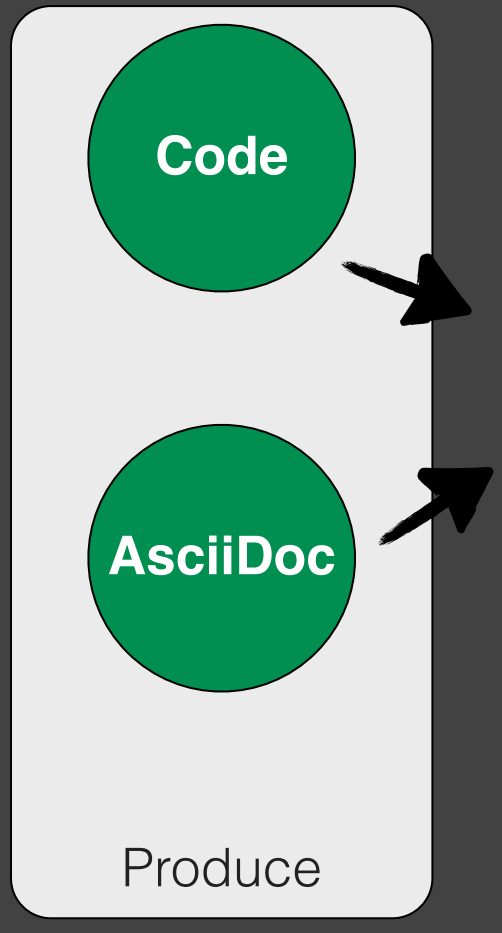
The docs toolchain



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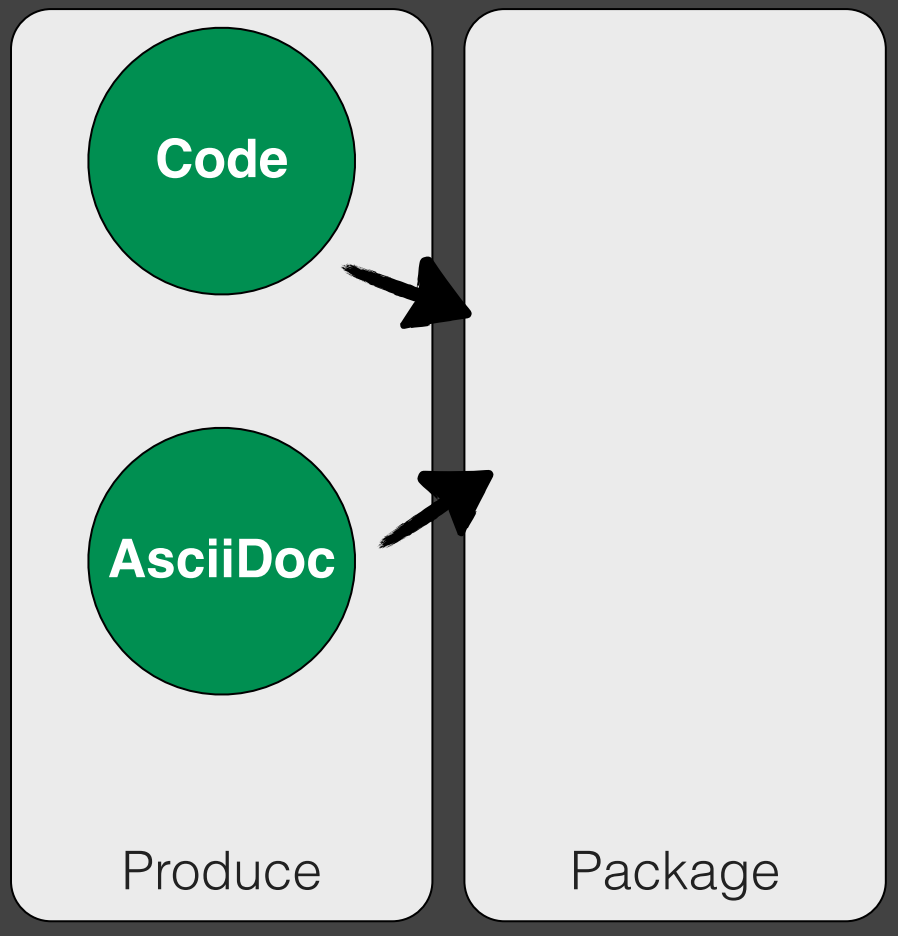
The docs toolchain



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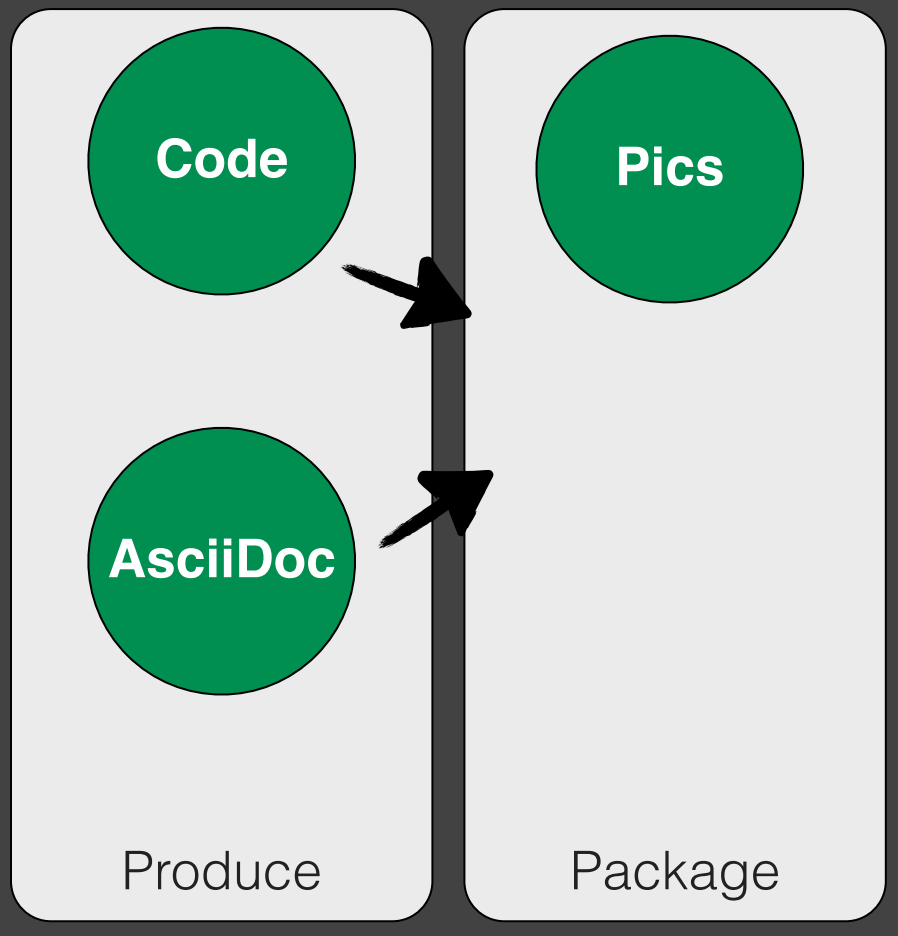

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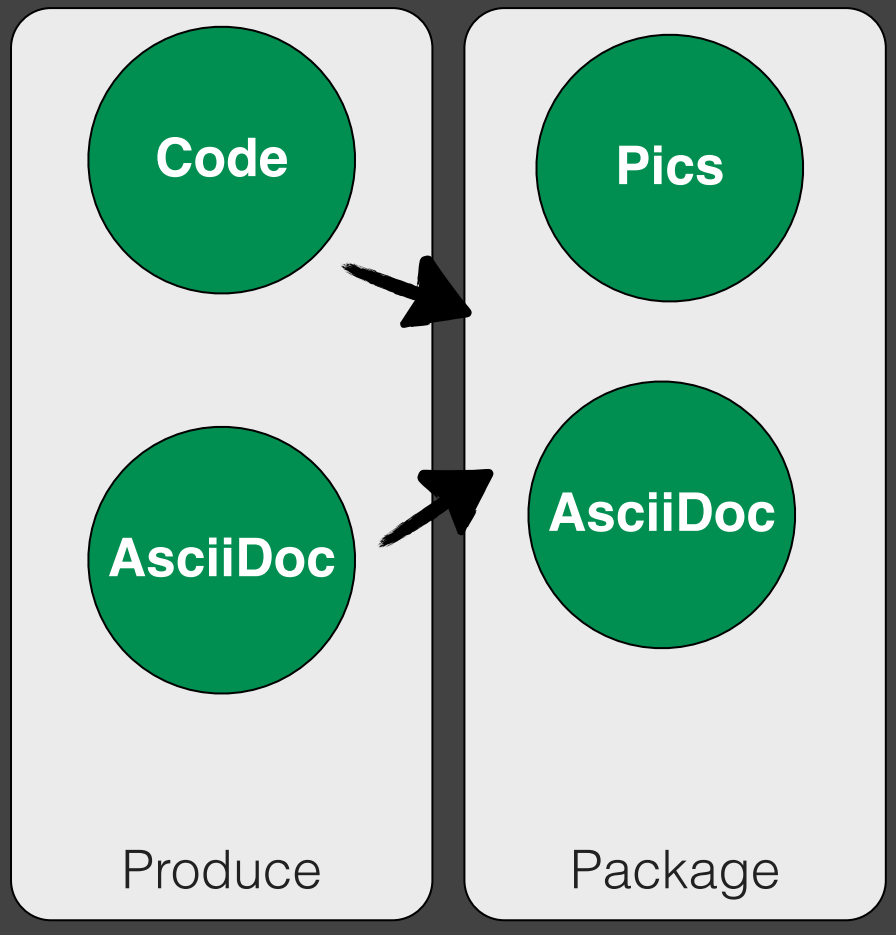

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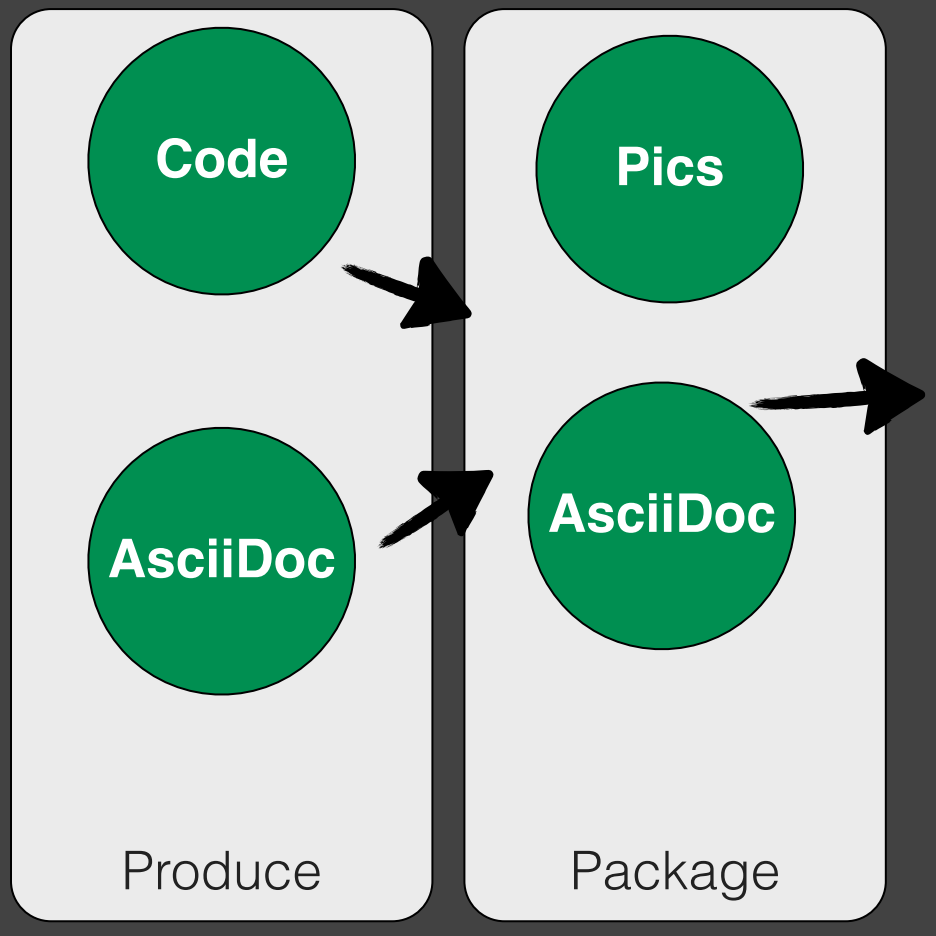

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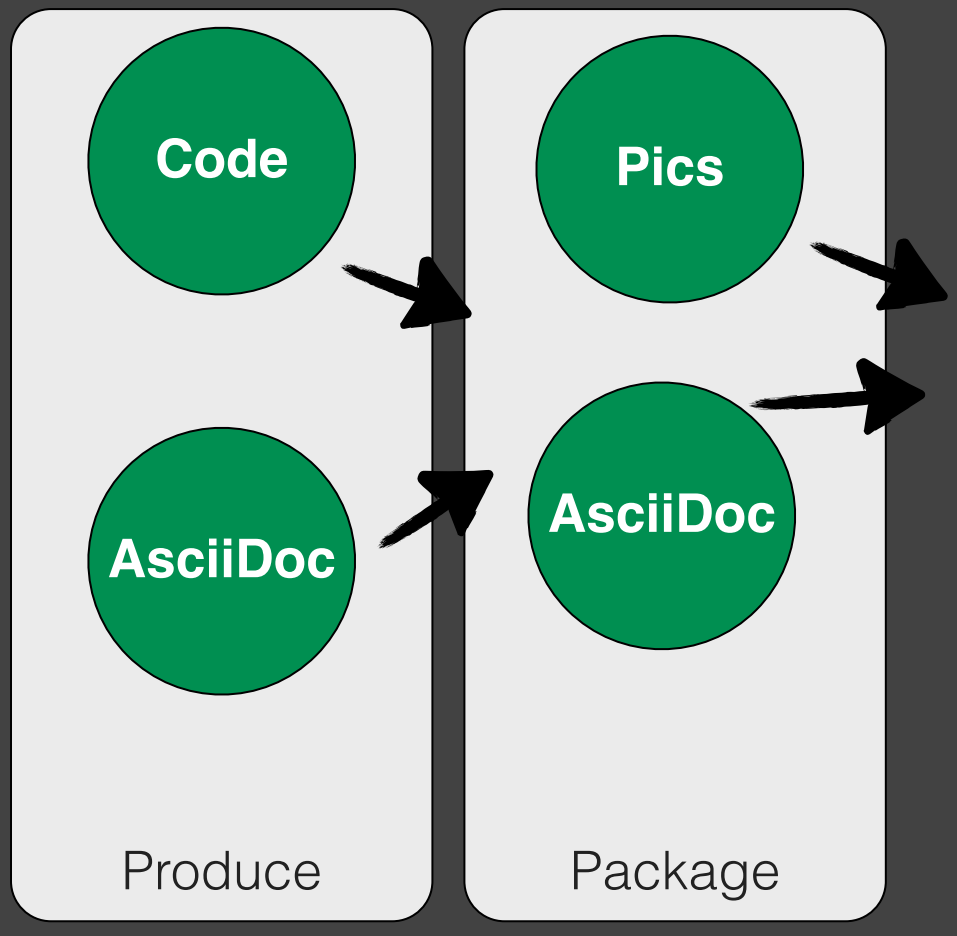

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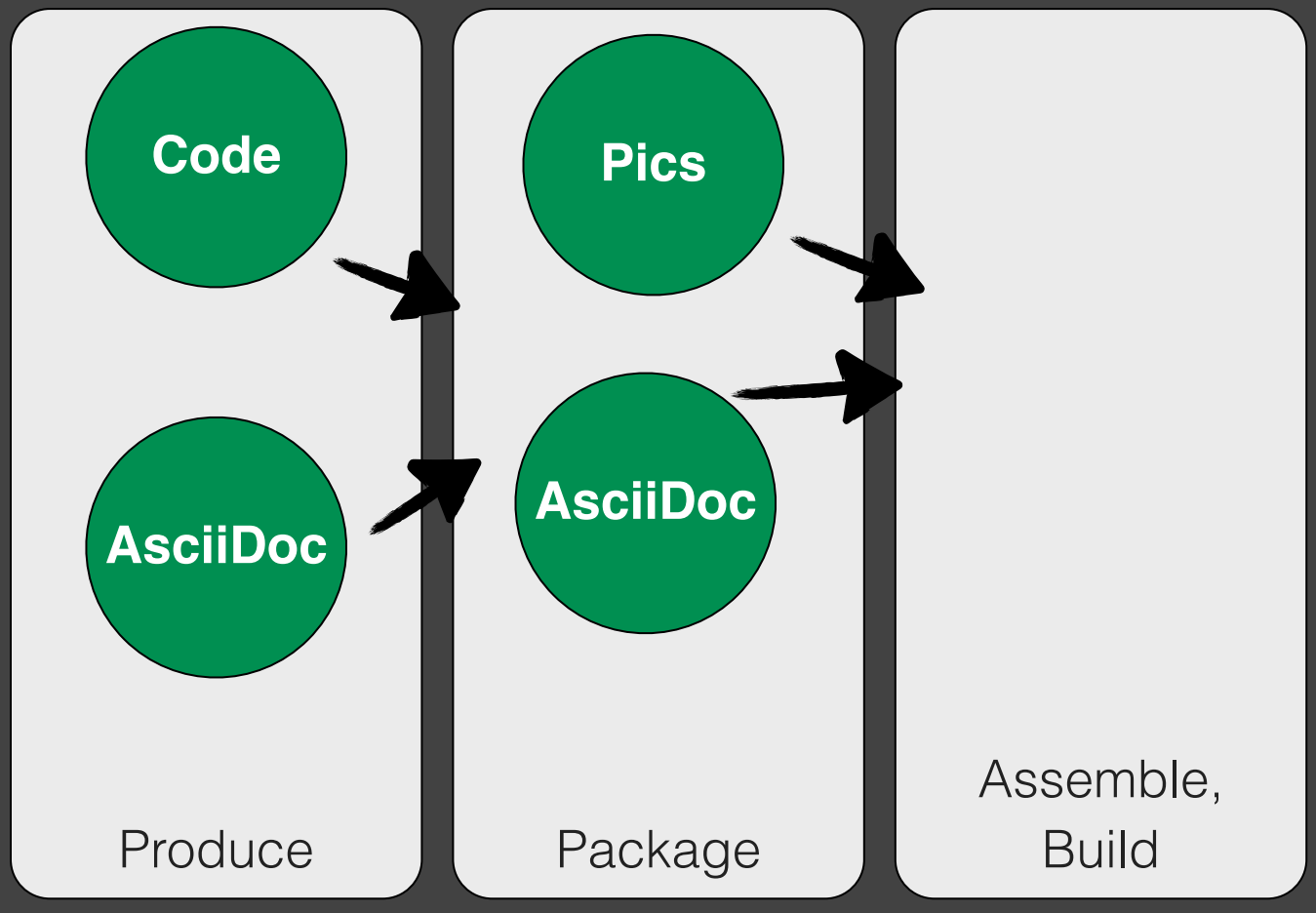

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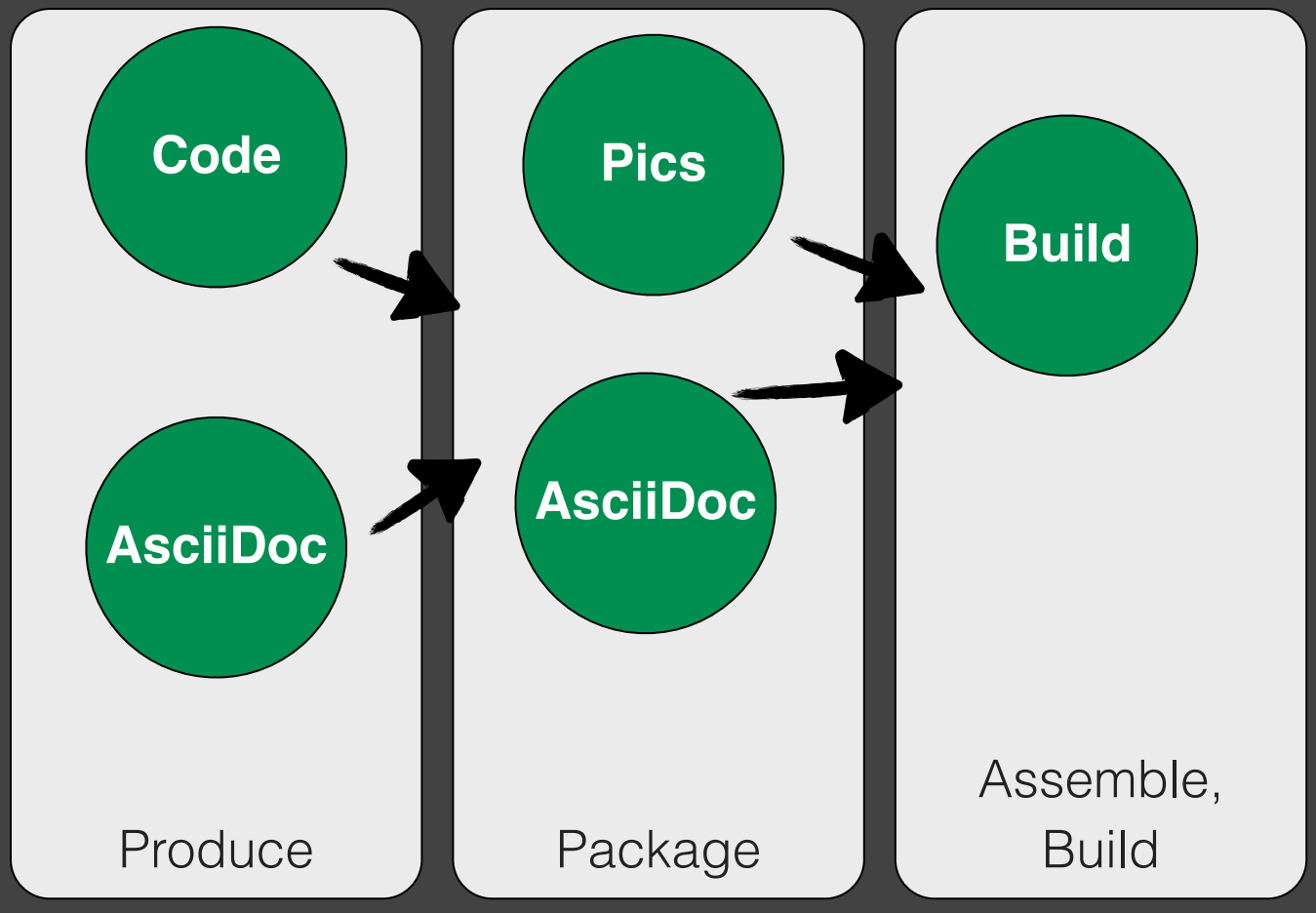
The docs toolchain



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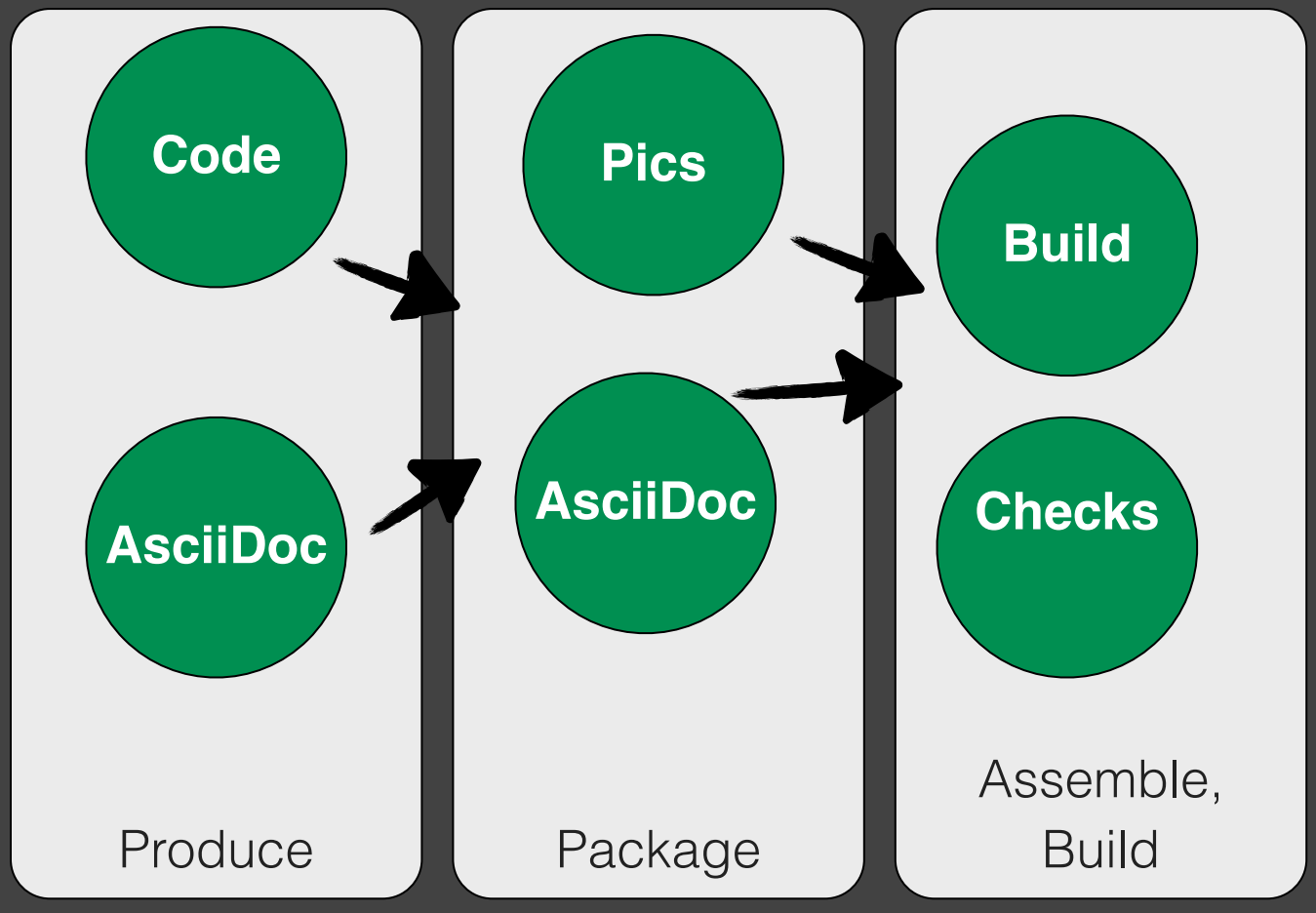

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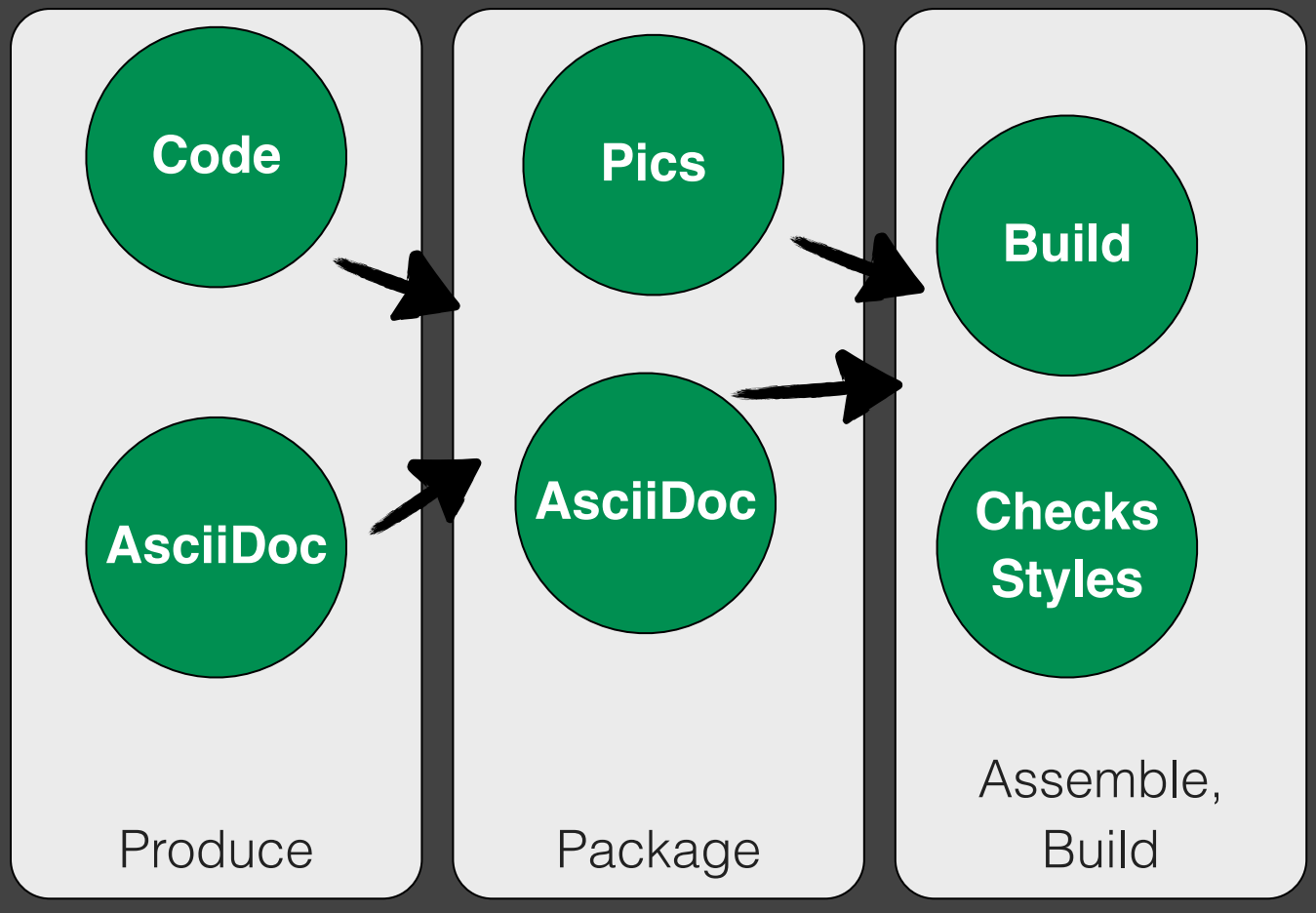

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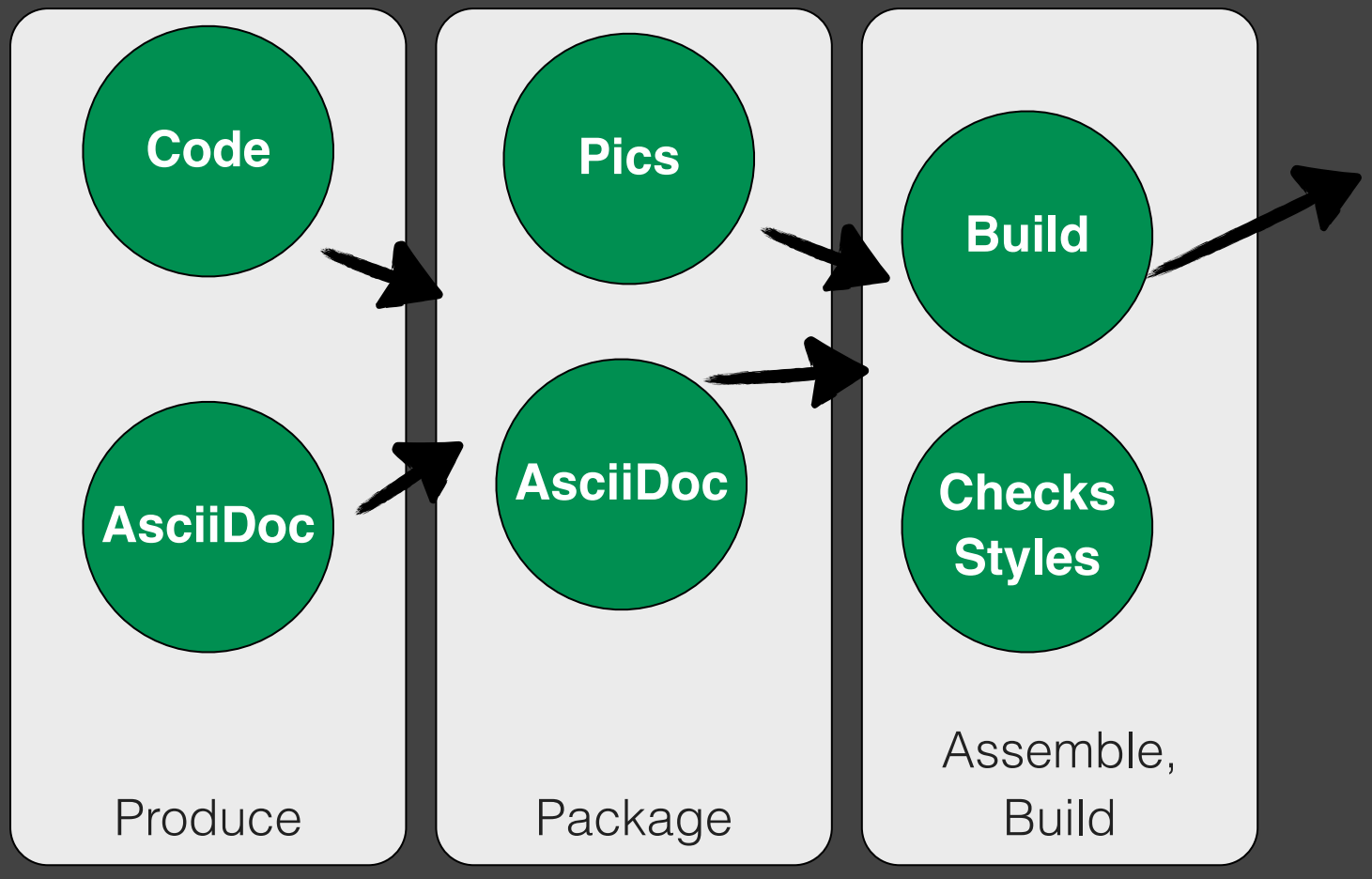

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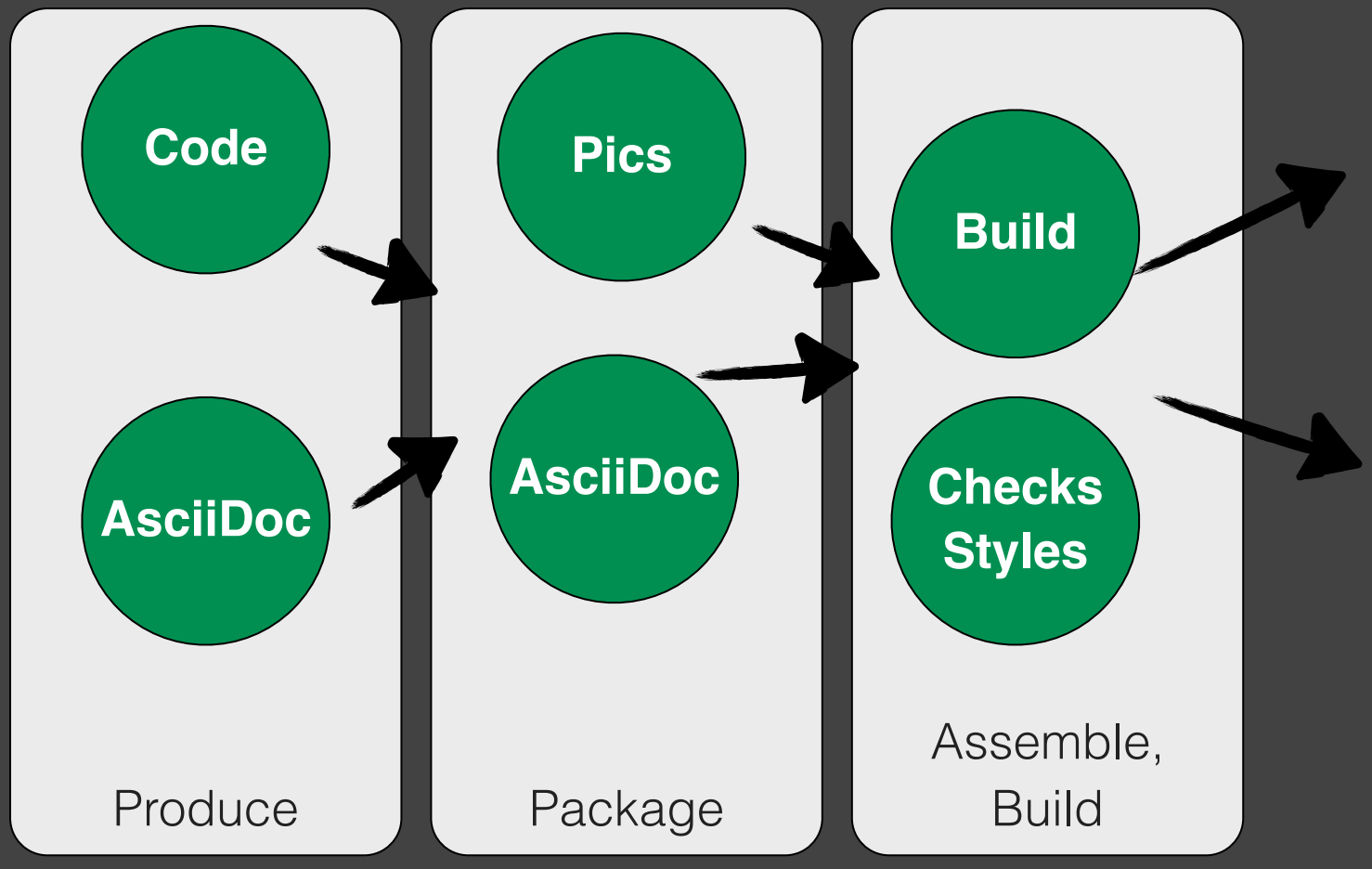

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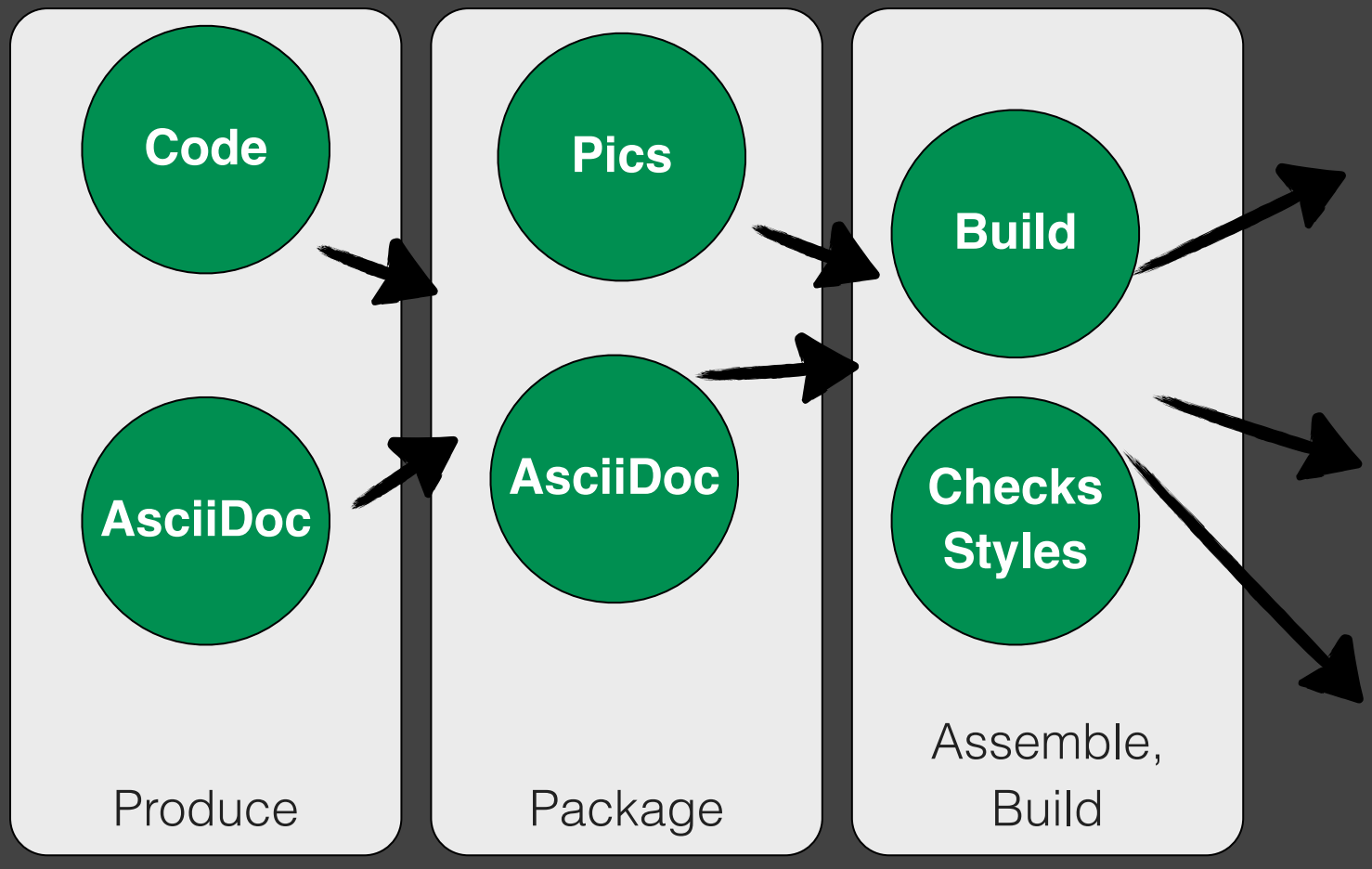

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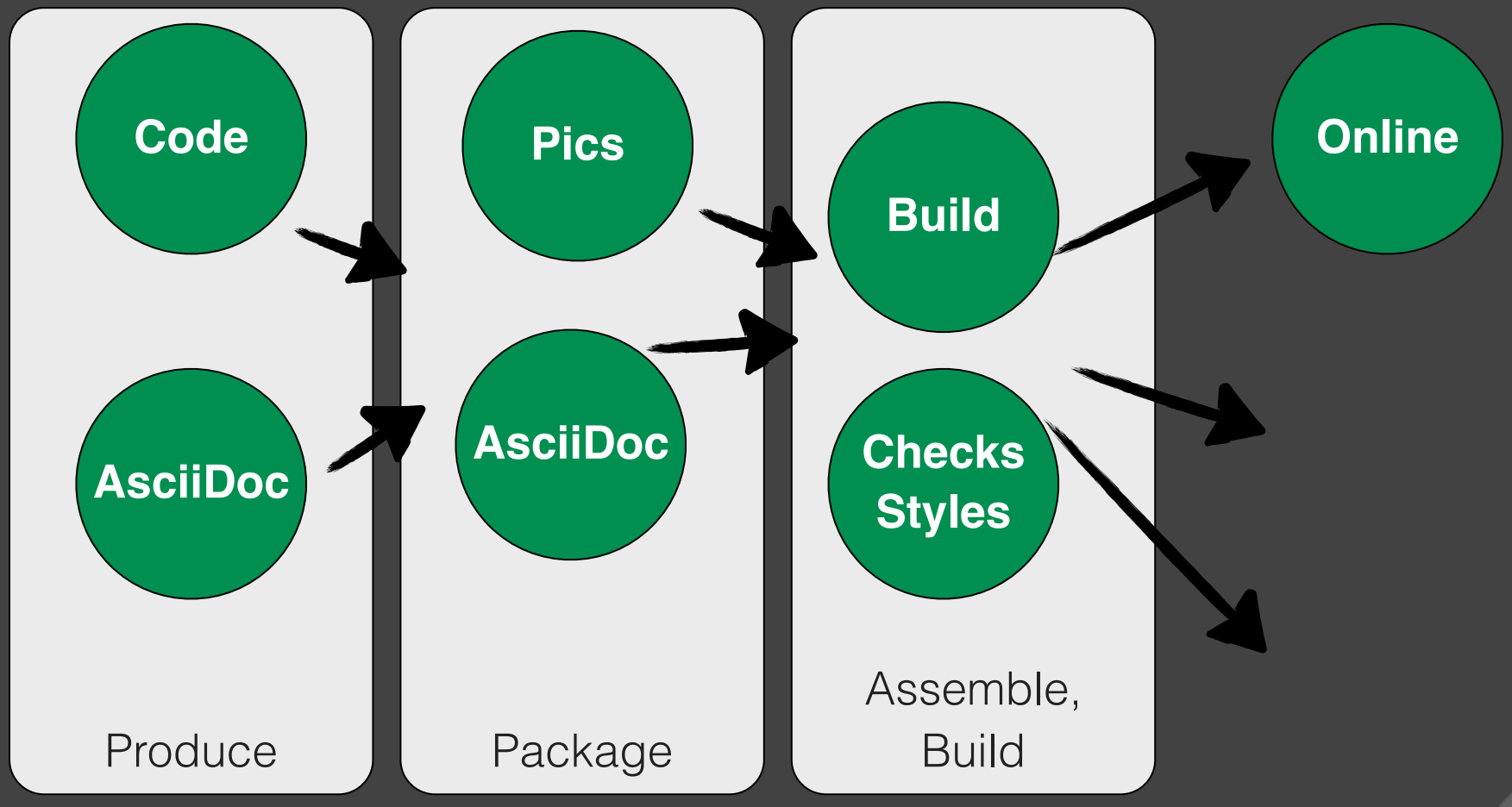
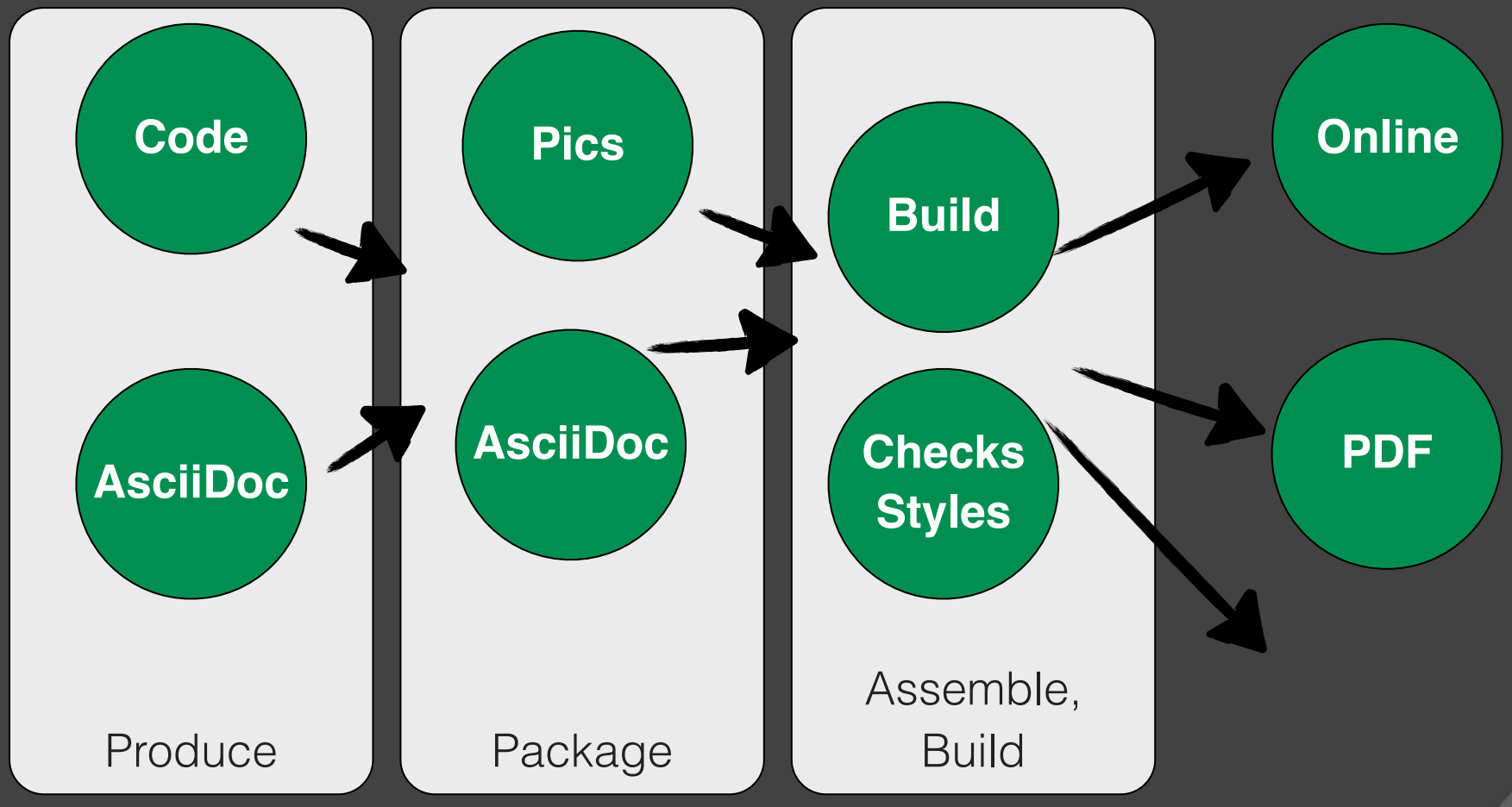
The docs toolchain



(friends)-[:create]->(project)-[:supports]->(community)

Neo4j
the graph database

The docs toolchain



(friends)-[:create]->(project)-[:supports]->(community)

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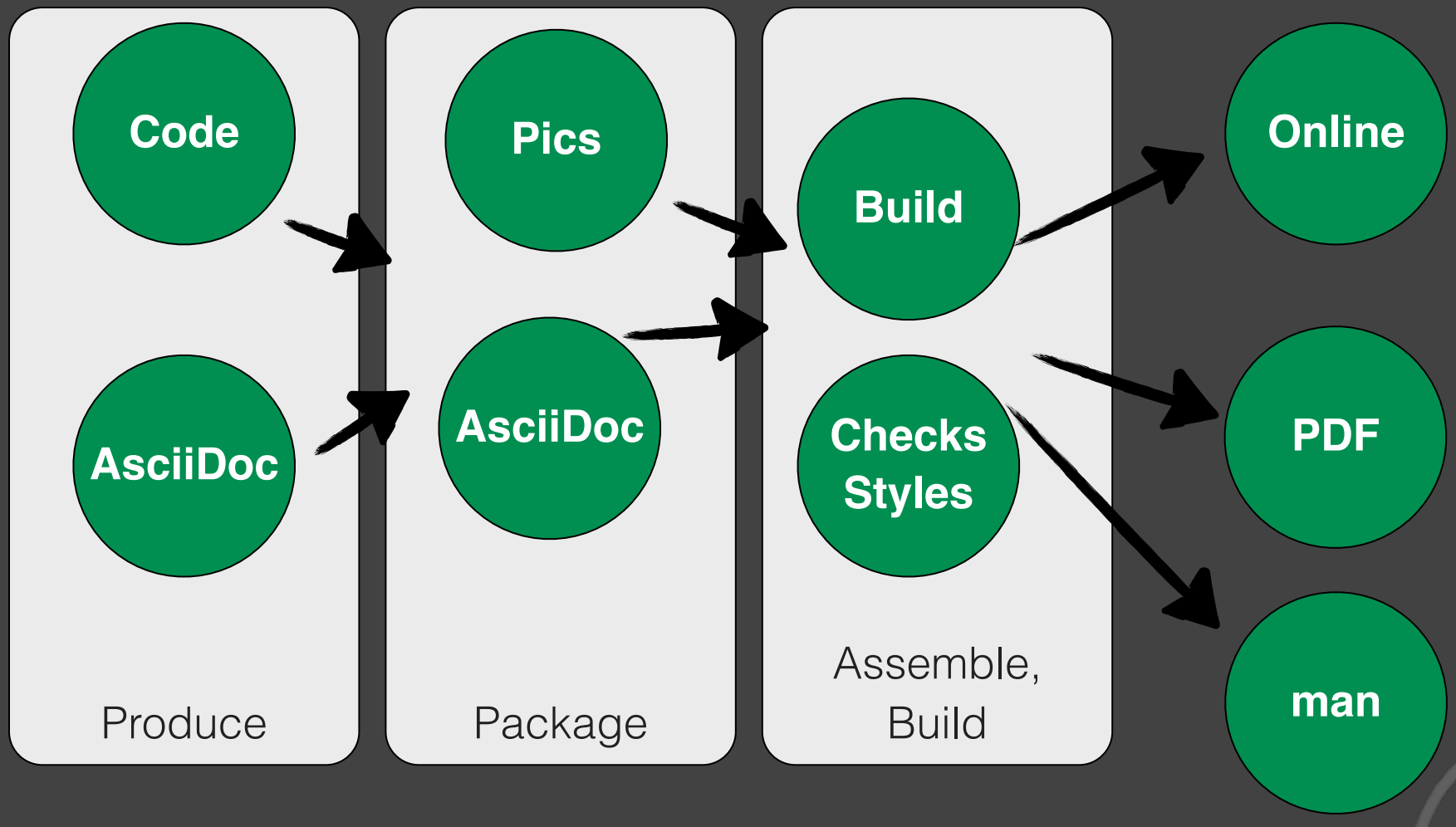
The docs toolchain



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Docs #1

```scala
def graphDescription = List("A KNOWS B", "A KNOWS C", "A KNOWS D")


override val properties: Map[String, Map[String, Any]] = Map(
  "A" -> Map("property" -> 13),
  "B" -> Map("property" -> 33, "eyes" -> "blue"),
  "C" -> Map("property" -> 44, "eyes" -> "blue"),
  "D" -> Map("eyes" -> "brown")
)
```

```scala
@Test def countRelationshipsByType() {
  testQuery(
    title = "Group Count Relationship Types",
    text = "To count the groups of relationship types, return the types and count them with `count(*)`.",
    queryText = "start n=node(%A%) match (n)-[r]->() return type(r), count(*)",
    returns = "The relationship types and their group count.",
    assertions = p => assertEquals(Map("type(r)" -> "KNOWS", "count(*)" -> 3), p.toList.head))
}
```

https://github.com/neo4j/community/blob/master/cypher/src/test/scala/org/neo4j/cypher/docgen/AggregationTest.scala

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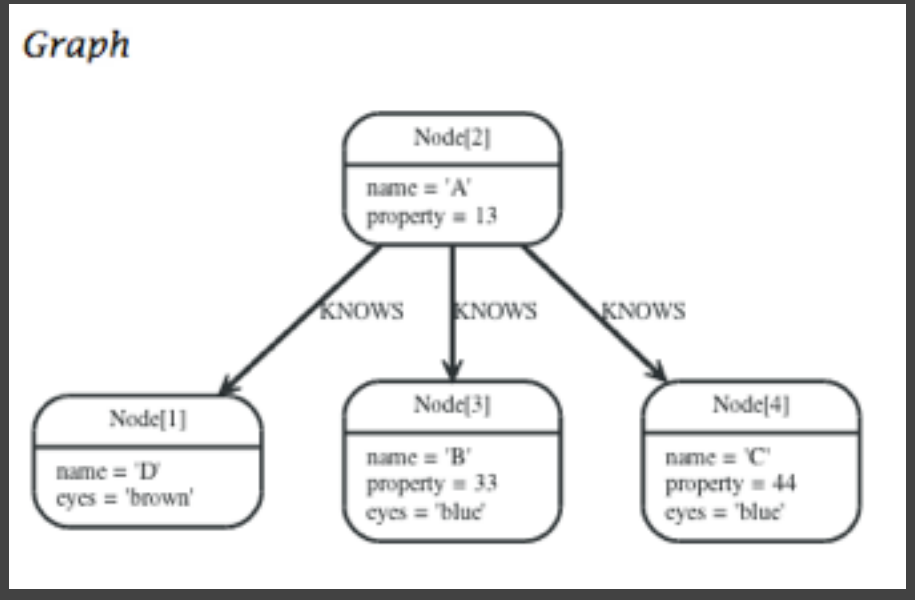
Docs #2



16.12.4. Group Count Relationship Types

To count the groups of relationship types, return the types and count them with `count(*)`.

Query

```
START n=node(2)
MATCH (n)-[r]->()
RETURN type(r), count(*)
```

The relationship types and their group count.

Result

type(r)	count(*)
"KNOWS"	3
1 row	
0 ms	

Try this query live

```
(2)-[:KNOWS]->(3) {}
(2)-[:KNOWS]->(4) {}
(2)-[:KNOWS]->(1) {}

start n=node(2)
match (n)-[r]->()
return type(r), count(*)
+--------------------+
| type(r) | count(*) |
+--------------------+
| "KNOWS" | 3        |
+--------------------+
1 row
0 ms
```

You can modify and query this graph by entering statements in the input field at the bottom.
For some syntax help hit the button. If you want to share your graph, just do it with

```
start n=node(2) match (n)-[r]->() return type(r), count(*)
```

http://docs.neo4j.org/chunked/snapshot/query-aggregation.html

(friends)-[:create]->(project)-[:supports]->(community)

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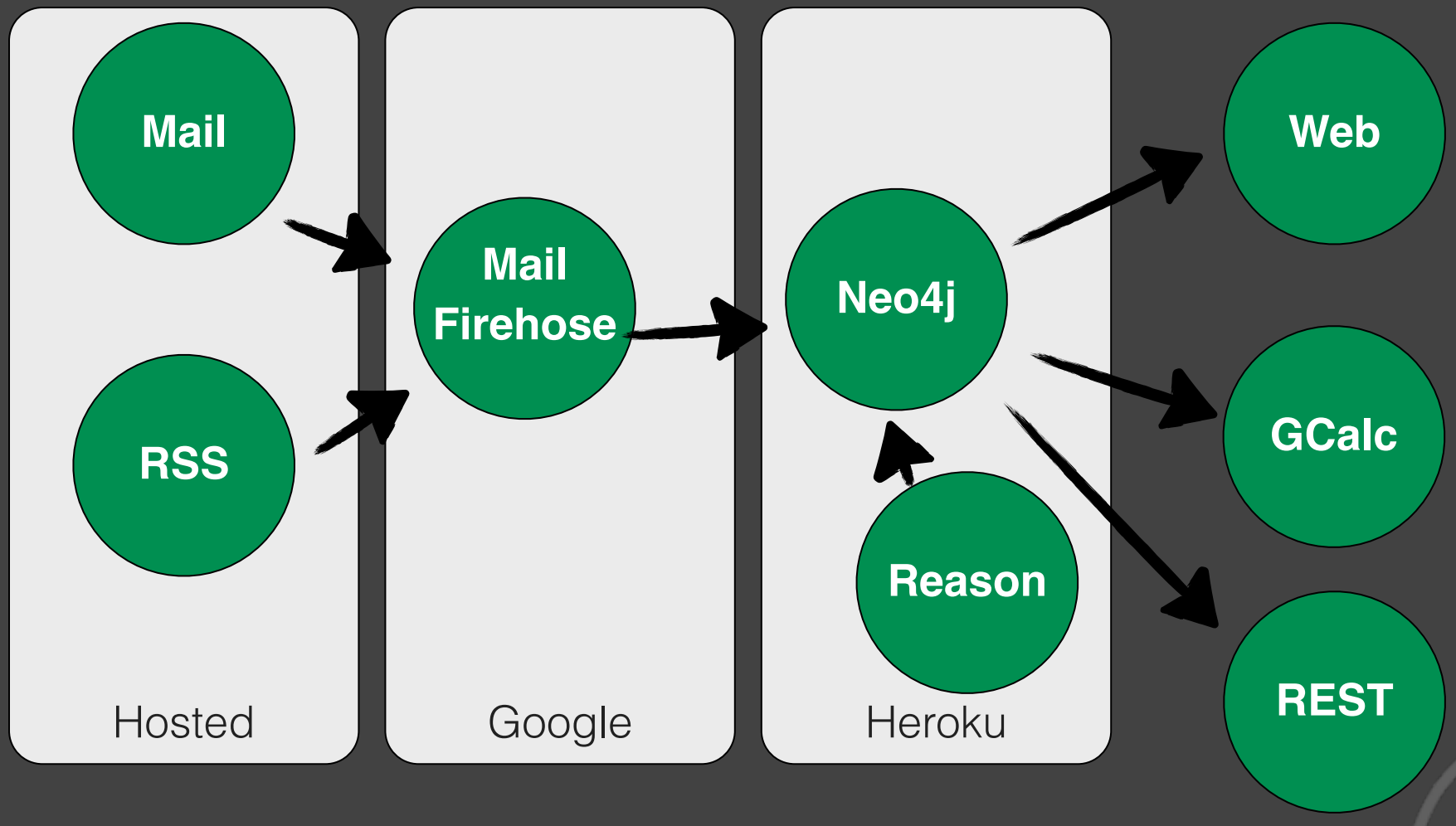
The Community graph

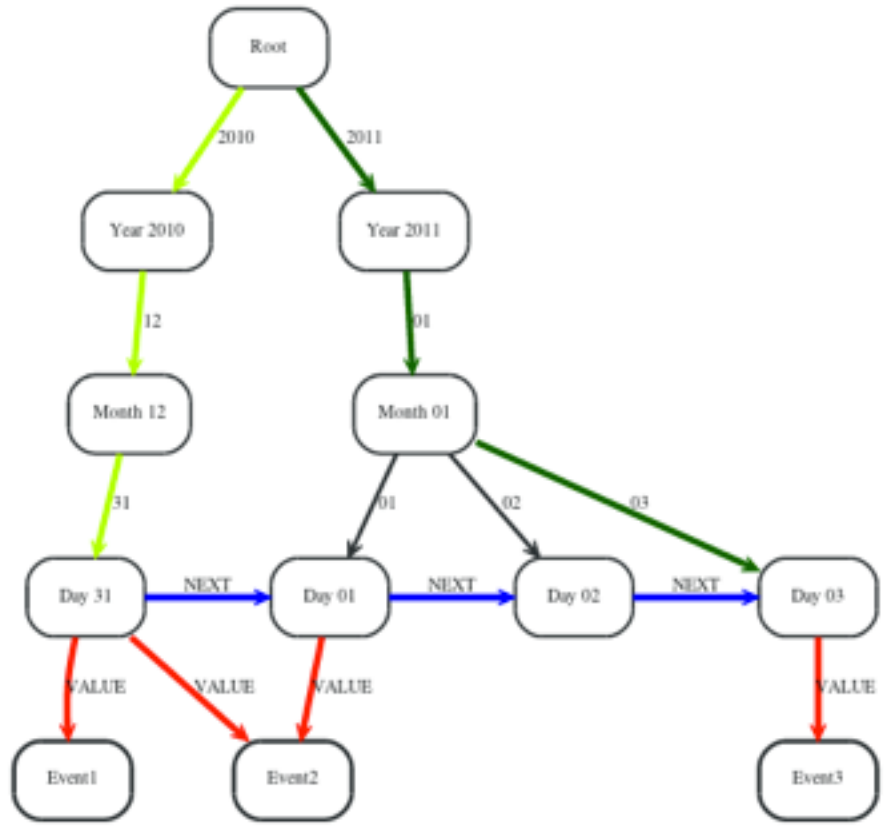


(friends)-[:create]->(project)-[:supports]->(community)

Neo4j
the graph database

The Community graph

Graph



Query

```
START root=node:node_auto_index(name = 'Root')
MATCH startPath=root-[:`2010`]->()-[:`12`]->()-[:`31`]->startLeaf,
      endPath=root-[`:2011`]->()-[:`01`]->()-[:`03`]->endLeaf,
      valuePath=startLeaf-[:NEXT*0..]->middle-[:NEXT*0..]->endLeaf,
      values=middle-[:VALUE]->event
RETURN event.name
ORDER BY event.name ASC
```

(friends)-[:create]->(project)-[:supports]->(community)

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The Community graph

=getTopContentInMonth(A1,200)

A	B	C
May 1, 2012		
=getTopContentInMonth(A1,200)	base.name	count(*)
https://groups.google.com/d/topic/orient-database/pdzgSuCfoSM/discussion	https://groups.googl	48
http://www.springsource.org/node/3547	http://www.springso	30
http://www.meetup.com/sv-jug/events/63554162	http://www.meetup.c	27
http://info.neotechnology.com/0510-cloud.html	http://info.neotechnc	26

```
function getTopContentInMonth(date, limit) {
  var query = "start root=node(0) match "+
    "root-[:CATEGORY]->category-[:TWITTER_USER]->user-[:POSTED]->value<-[:LINKED]-link<-[:BASE_UR
    "value<-[:VALUE]-hour<-[h]-day<-[d]-month<-[:IDX_MONTH_"+
      lpad((date.getMonth()+1),2)+"]-year<-[:IDX_YEAR_"+date.getYear()+"]-root " +
    "where type(d) =~/IDX_DAY_.*/ and type(h) =~/IDX_HOUR_.*/ " +
    "return link.name, base.name,count(*) order by count(*) desc limit "+limit;
  return cellify(cypherFromCG(query));
}
```

(friends)-[:create]->(project)-[:supports]->(community)

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Teach

```
Graph Setup:

start root=node(0)
create (Neo {name:'Neo'}), (Morpheus {name: 'Morpheus'}), (Trinity {name: 'Trinity'}),
 (Cypher {name: 'Cypher'}), (Smith {name: 'Agent Smith'}), (Architect {name:'The Architect'}),
 root-[:ROOT]->Neo, Neo-[:KNOWS]->Morpheus, Neo-[:LOVES]->Trinity, Morpheus-[:KNOWS]->Trinity,
 Morpheus-[:KNOWS]->Cypher, Cypher-[:KNOWS]->Smith, Smith-[:CODED_BY]->Architect
--------------------------------------------------------------------------------

start n=node(*)
match n-[r?]->m
return n,type(r),m
+-------------------------------------------------------------------------------+
| n                                | type(r)     | m                              |
+-------------------------------------------------------------------------------+
| Node[0]{}                        | "ROOT"      | Node[1]{name->"Neo"}           |
| Node[1]{name->"Neo"}             | "KNOWS"     | Node[2]{name->"Morpheus"}      |
| Node[1]{name->"Neo"}             | "LOVES"     | Node[3]{name->"Trinity"}       |
| Node[2]{name->"Morpheus"}        | "KNOWS"     | Node[3]{name->"Trinity"}       |
| Node[2]{name->"Morpheus"}        | "KNOWS"     | Node[4]{name->"Cypher"}        |
| Node[3]{name->"Trinity"}         | <null>      | <null>                         |
| Node[4]{name->"Cypher"}          | "KNOWS"     | Node[5]{name->"Agent Smith"}   |
| Node[5]{name->"Agent Smith"}     | "CODED_BY"  | Node[6]{name->"The Architect"} |
| Node[6]{name->"The Architect"}   | <null>      | <null>                         |
+-------------------------------------------------------------------------------+
9 rows
0 ms
```

You can modify and query this graph by entering statements in the input field at the bottom.
For some syntax help hit the button. If you want to share your graph, just do it with

```
start n=node(*) match n-[r?]->m return n,type(r),m
```

(friends)-[:create]->(project)-[:supports]->(community)

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Engage

(friends)-[:create]->(project)-[:supports]->(community)

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Empower (Mattis)

(friends)-[:create]->(project)-[:supports]->(community)

Neo4j
the graph database

Empower (Mattis)

(friends)-[:create]->(project)-[:supports]->(community)

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Promote, Support

Till, Rene, Paul, http://www.rene-pickhardt.de/typology-using-neo4j-wins-2-awards-at-the-german-federal-competition-young-scientists/

(friends)-[:create]->(project)-[:supports]->(community)

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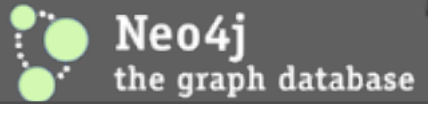
Summary

(friends)-[:create]->(project)-[:supports]->(community)



Summary

Have a cause

(friends)-[:create]->(project)-[:supports]->(community)

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Summary

Have a cause
Be brave

(friends)-[:create]->(project)-[:supports]->(community)

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Summary

Have a cause
Be brave
Value in Relationships

(friends)-[:create]->(project)-[:supports]->(community)

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Summary

Have a cause
Be brave
Value in Relationships
Have fun!

(friends)-[:create]->(project)-[:supports]->(community)

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The (G)Raffle

http://graffle-goto-cph.herokuapp.com/

(friends)-[:create]->(project)-[:supports]->(community)

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Questions?