Beyond Diagrams: Unlocking the **Power of Tables in Sirius Web** Stéphane Bégaudeau - Obeo







- Software architect on Sirius Web
- 15 years of contribution in the Sirius ecosystem
 - Acceleo
 - EEF
 - Sirius Desktop
 - Sirius Web









Sirius Web







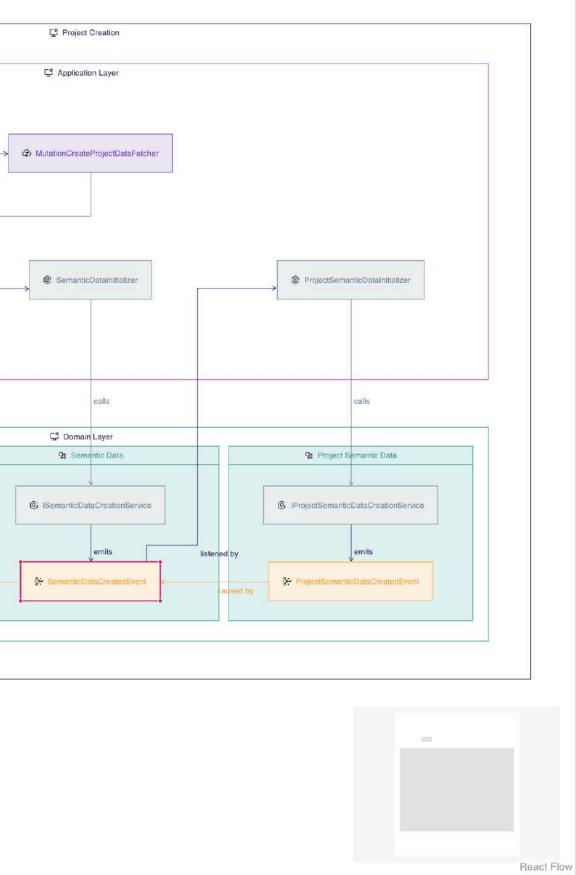
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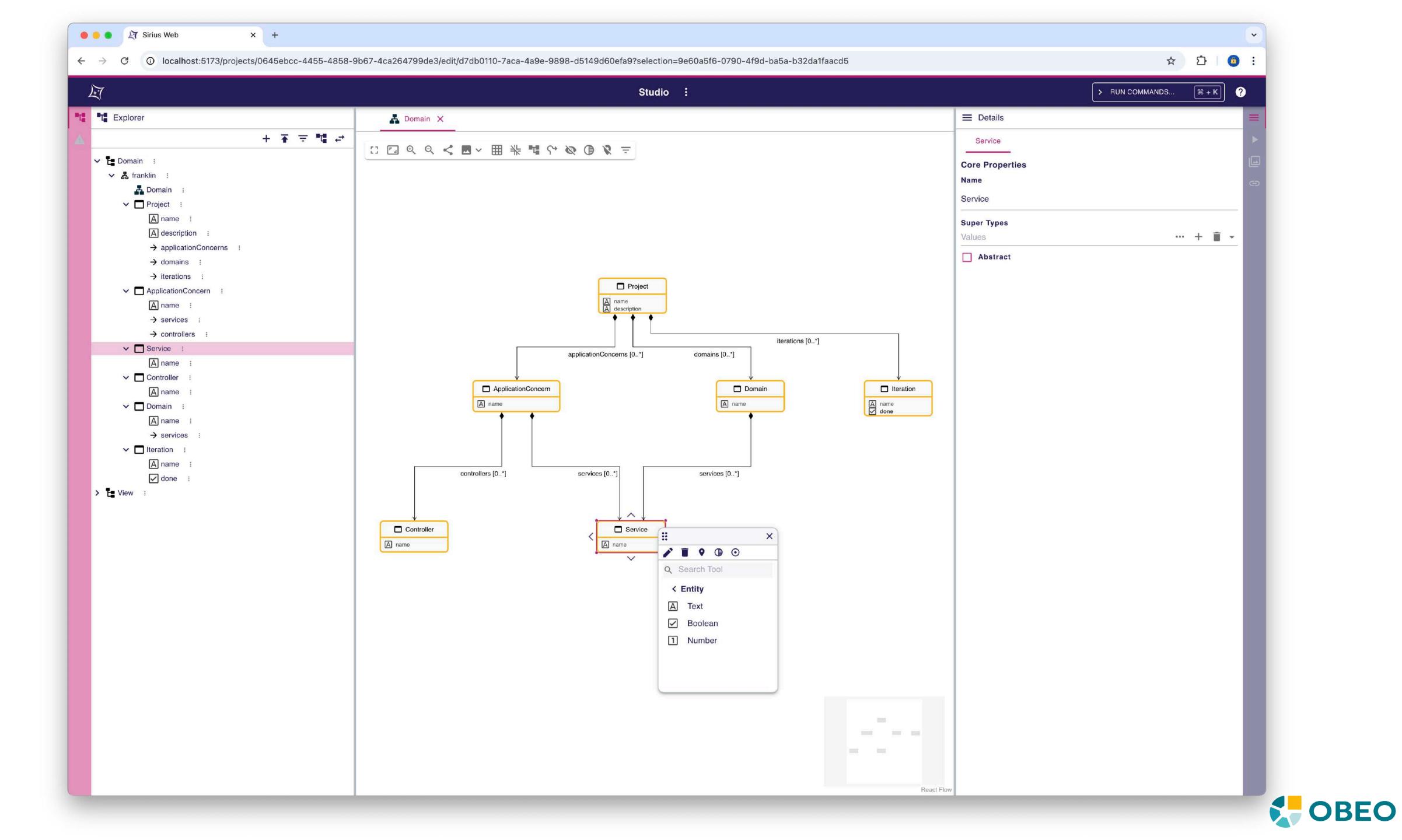
Sirius Web

- Open source project of the Eclipse Foundation
- Web based modeling workbench
 - Define your concepts
 - Specify how to view and manipulate them
 - Start working *#*













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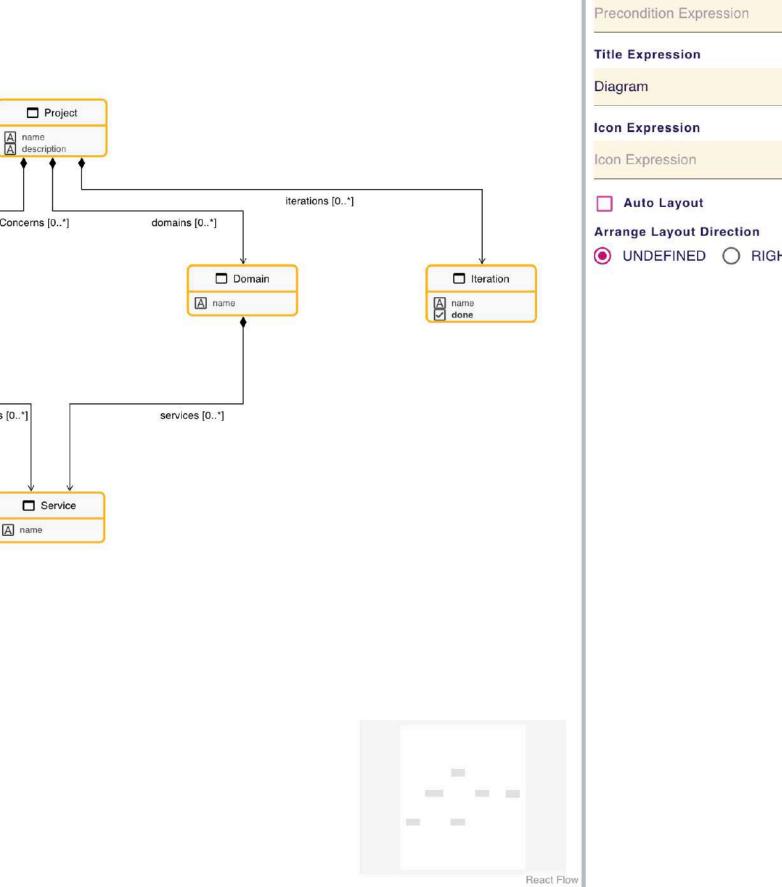
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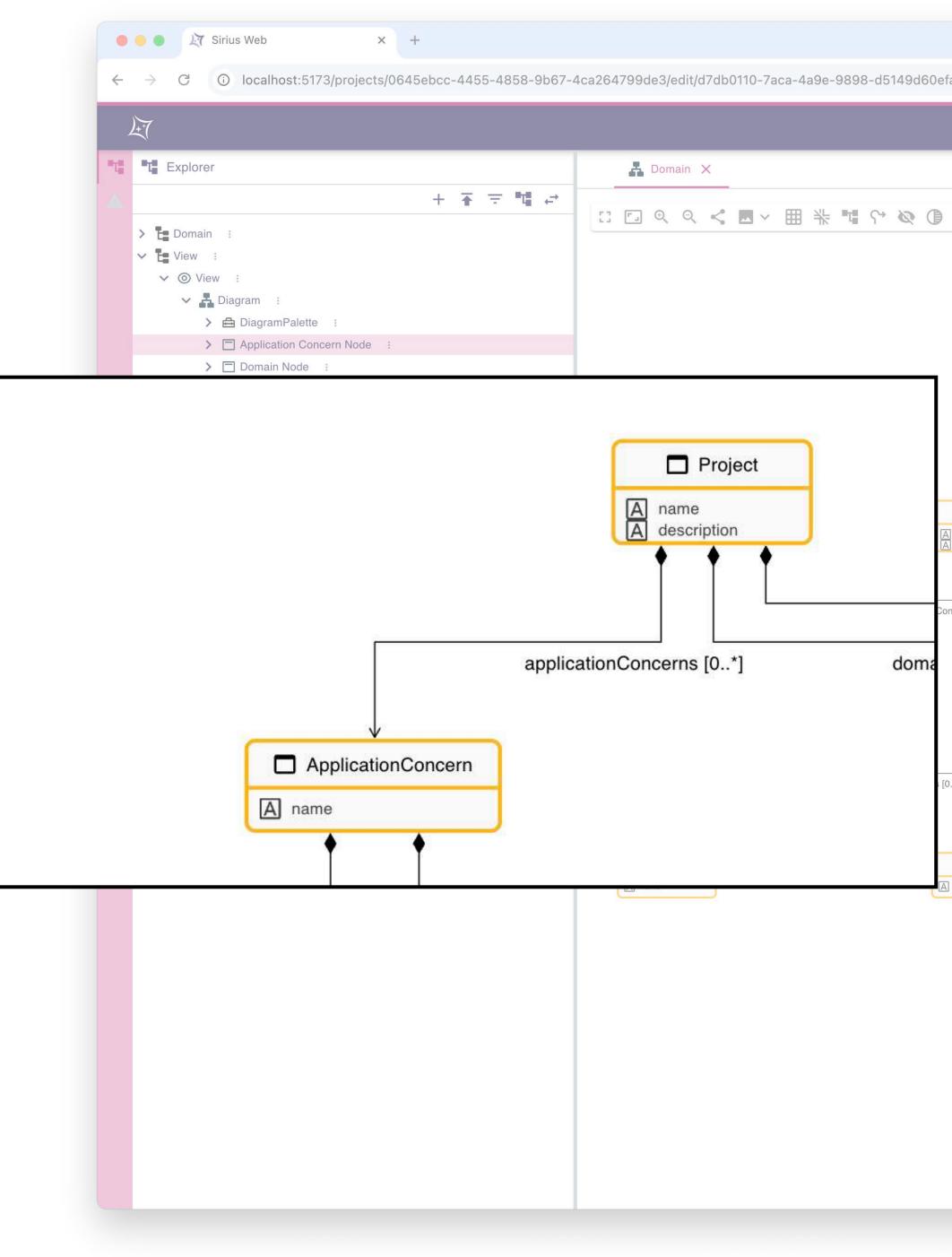
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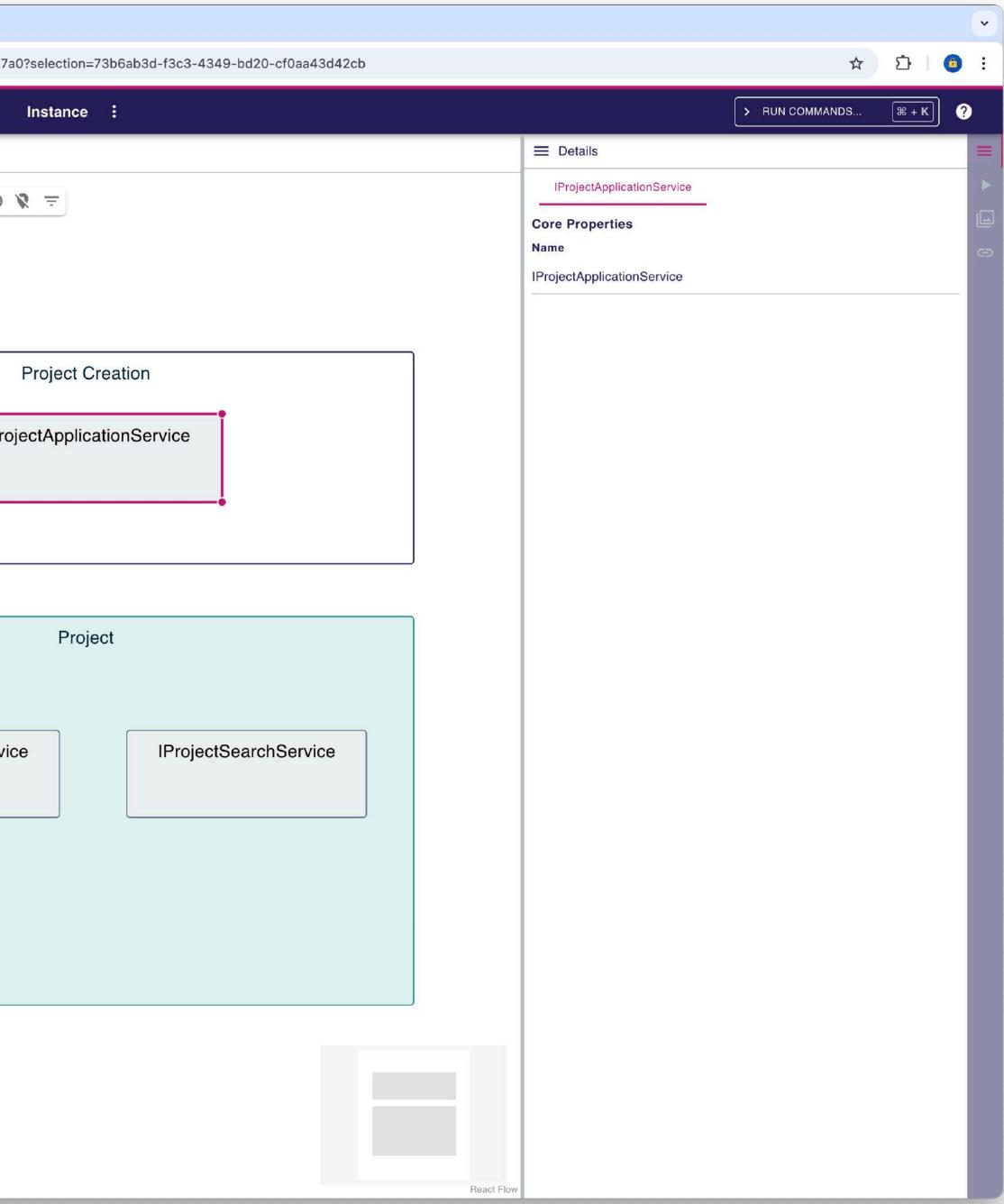


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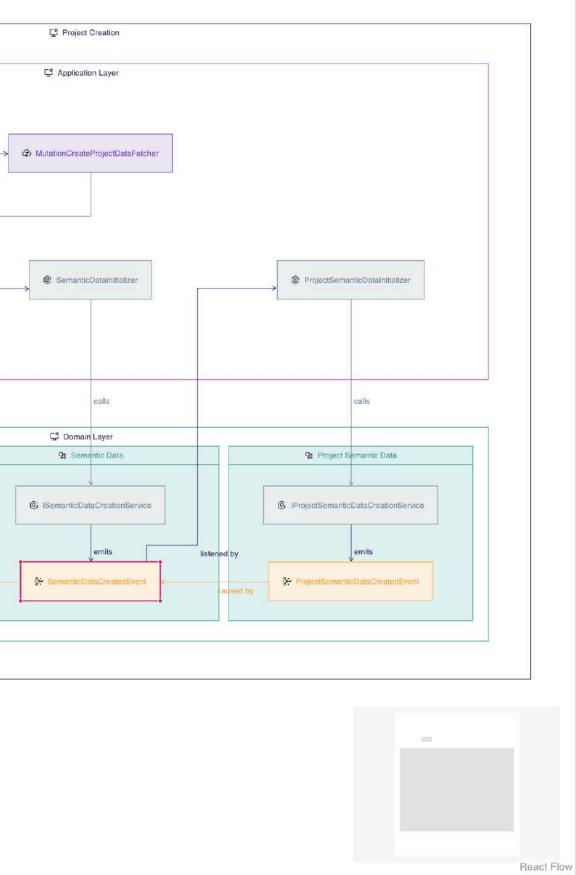
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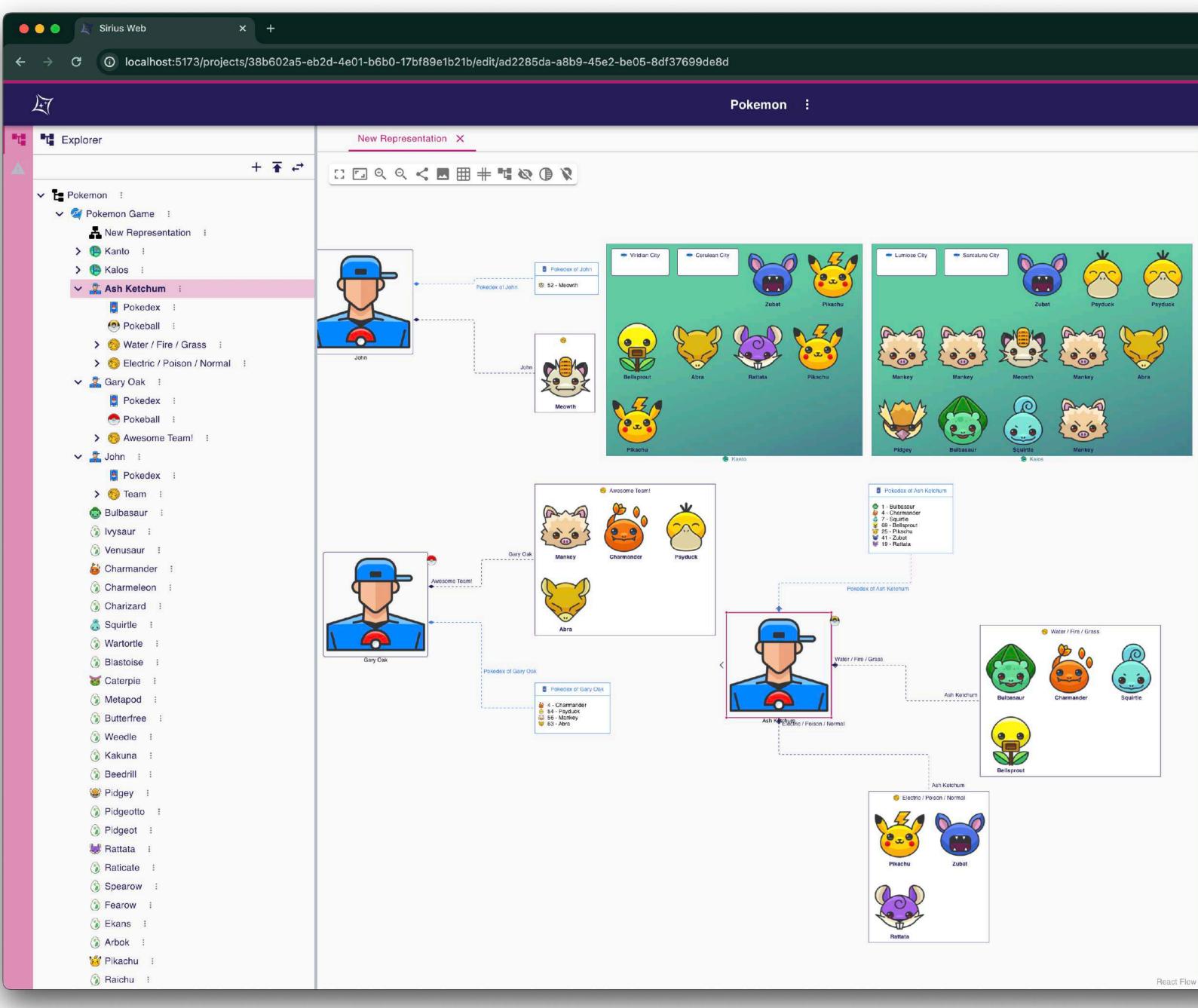
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Sirius Web

- Sirius Web comes with various representations
 - Diagrams
 - Forms
 - Trees
 - Gantt
 - Deck
 - Portal
 - Table







Table







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Sirius Web Tables

- Manipulate large set of data
- Same principles as other representations
 - No hypothesis on the shape of your concepts
 - Parameterized by a description
 - Synchronized with your data
 - Updated in real time







Sirius Web Tables

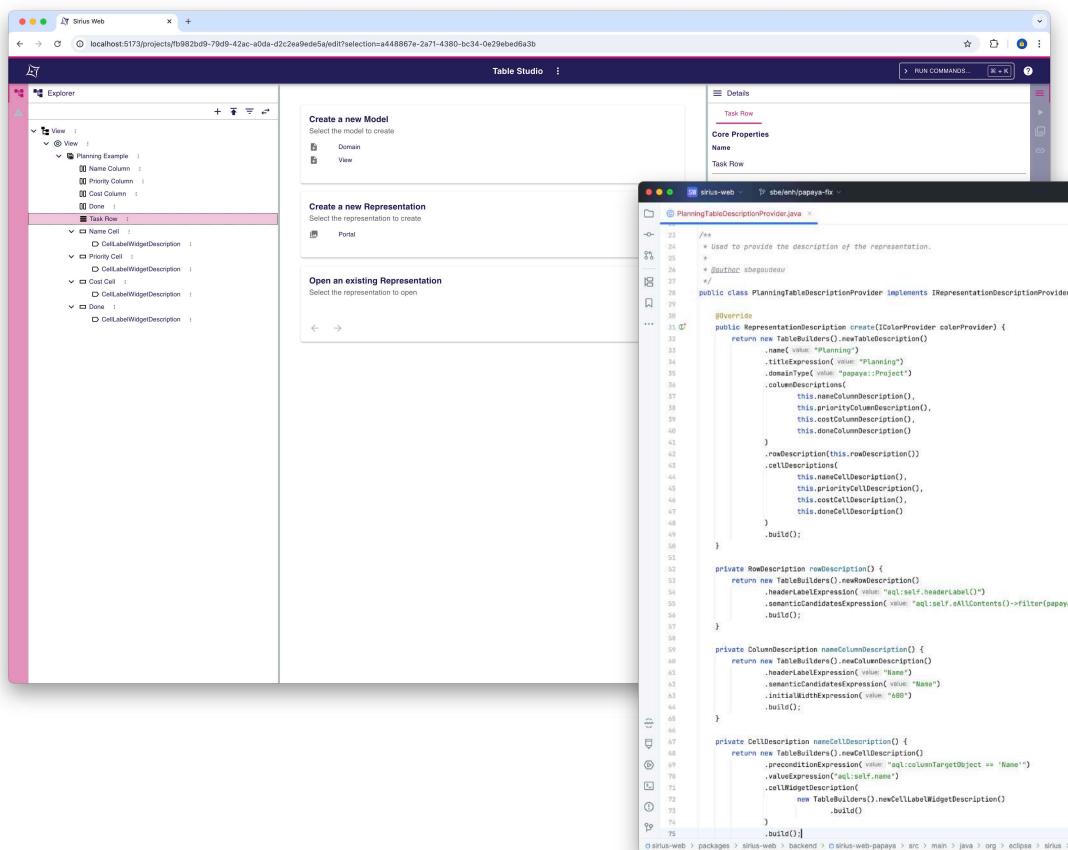
- Table description
 - View DSL in the browser
 - View builder API in Java
 - Low level programmatic API in Java







Sirius Web Tables



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Pagination







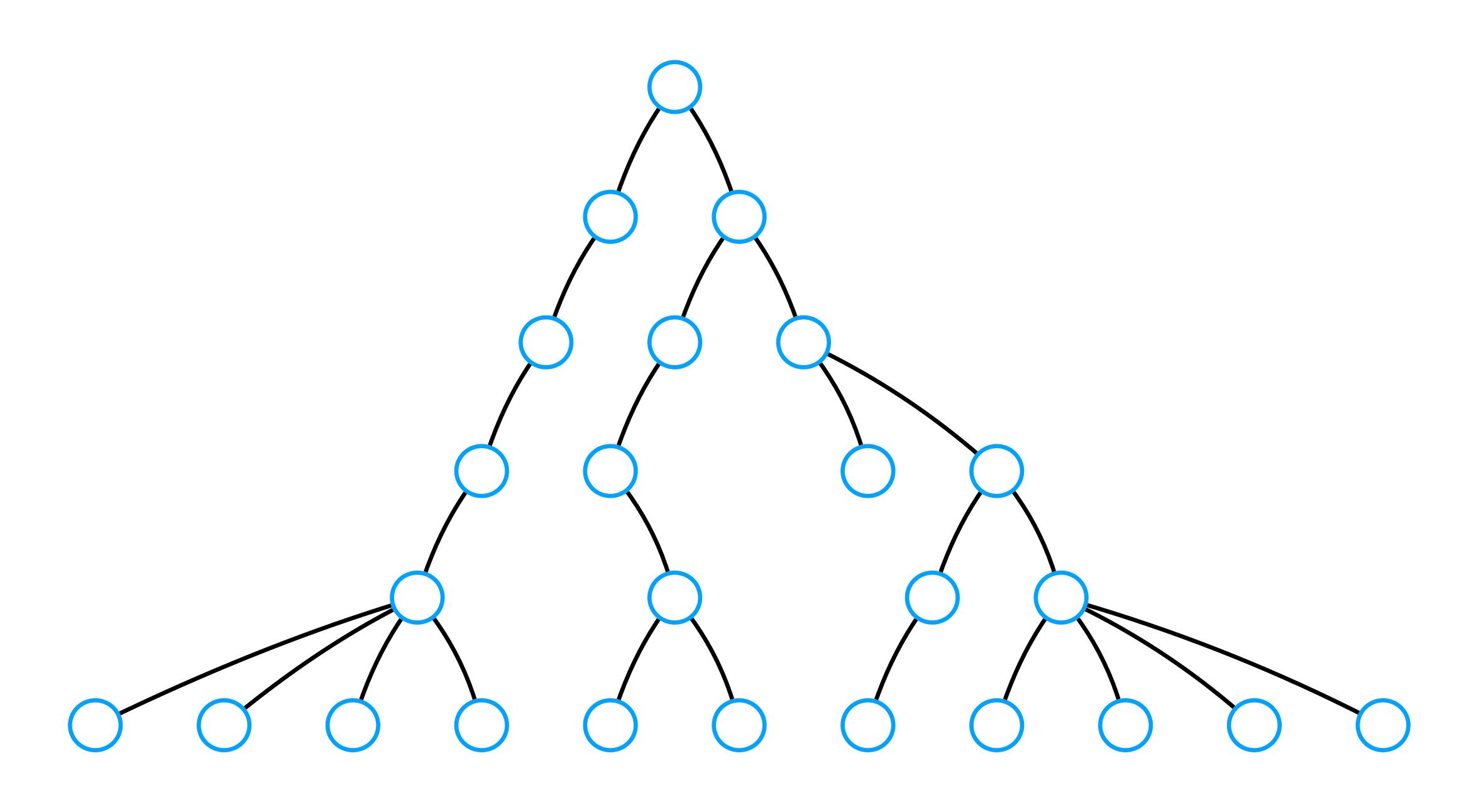
Pagination

- Server side pagination is compulsory for performance
- Need to render only what the end user is asking
- More powerful semantic candidates expression
 - PaginatedData instead of Collection





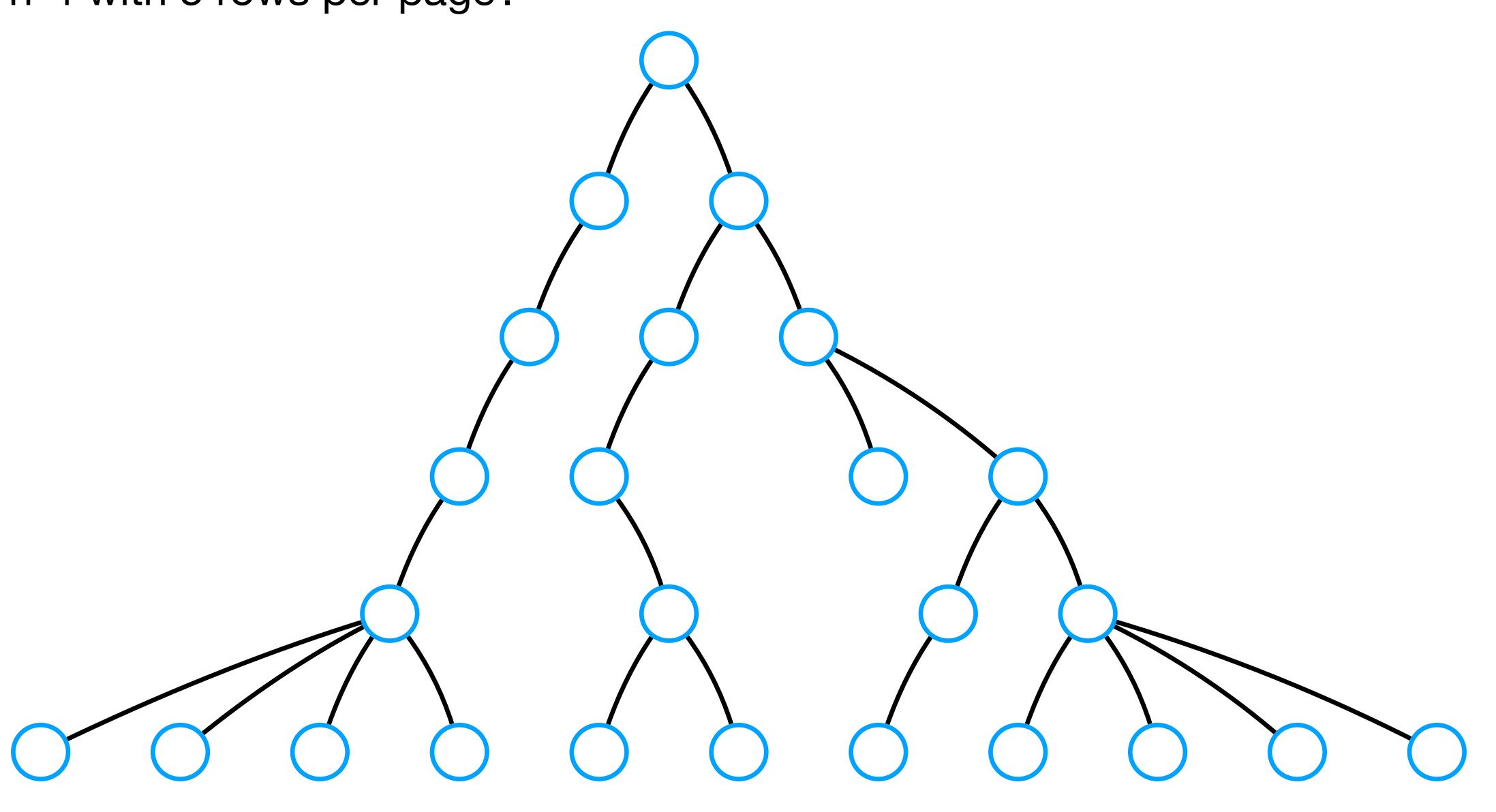








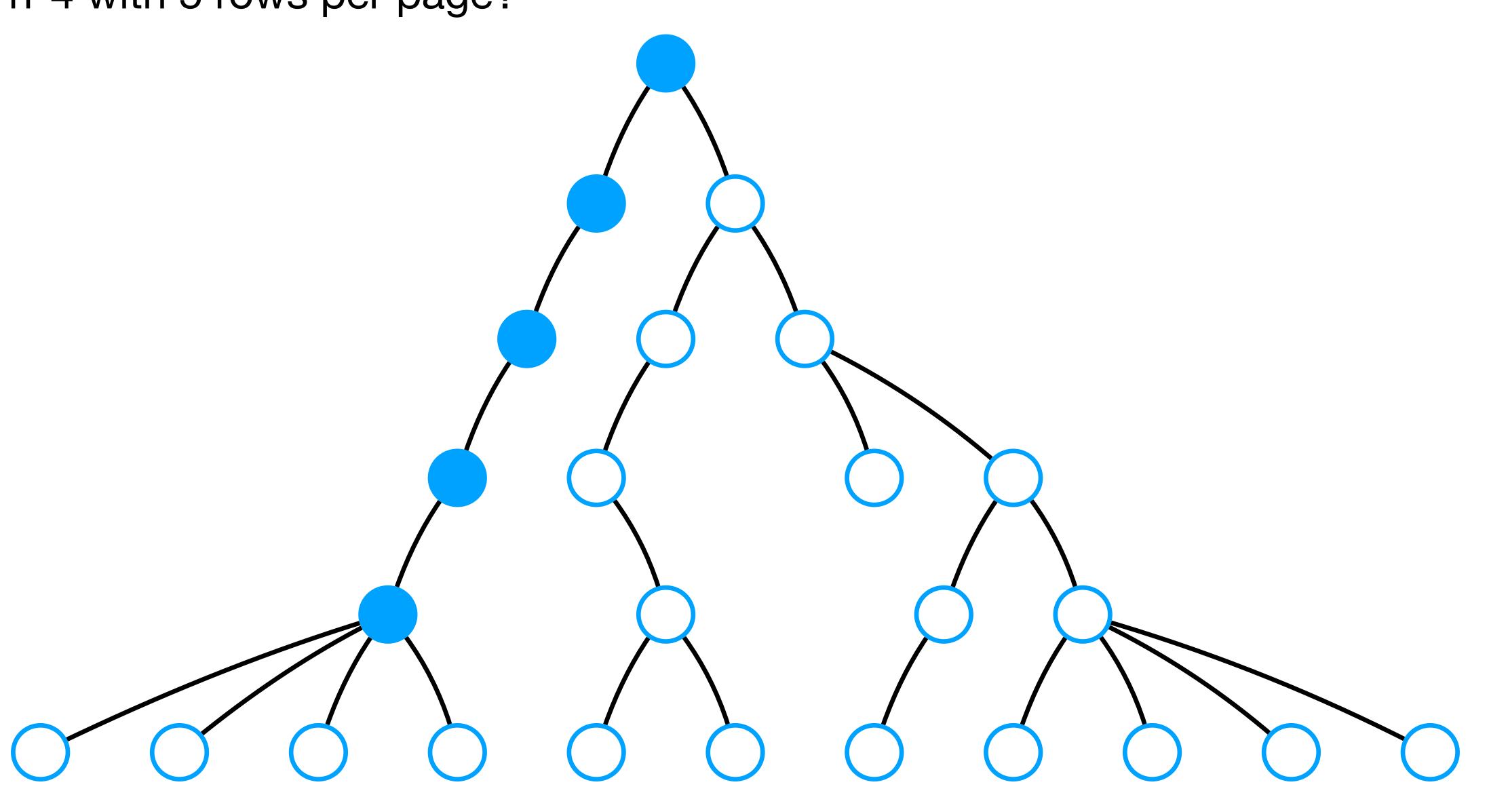








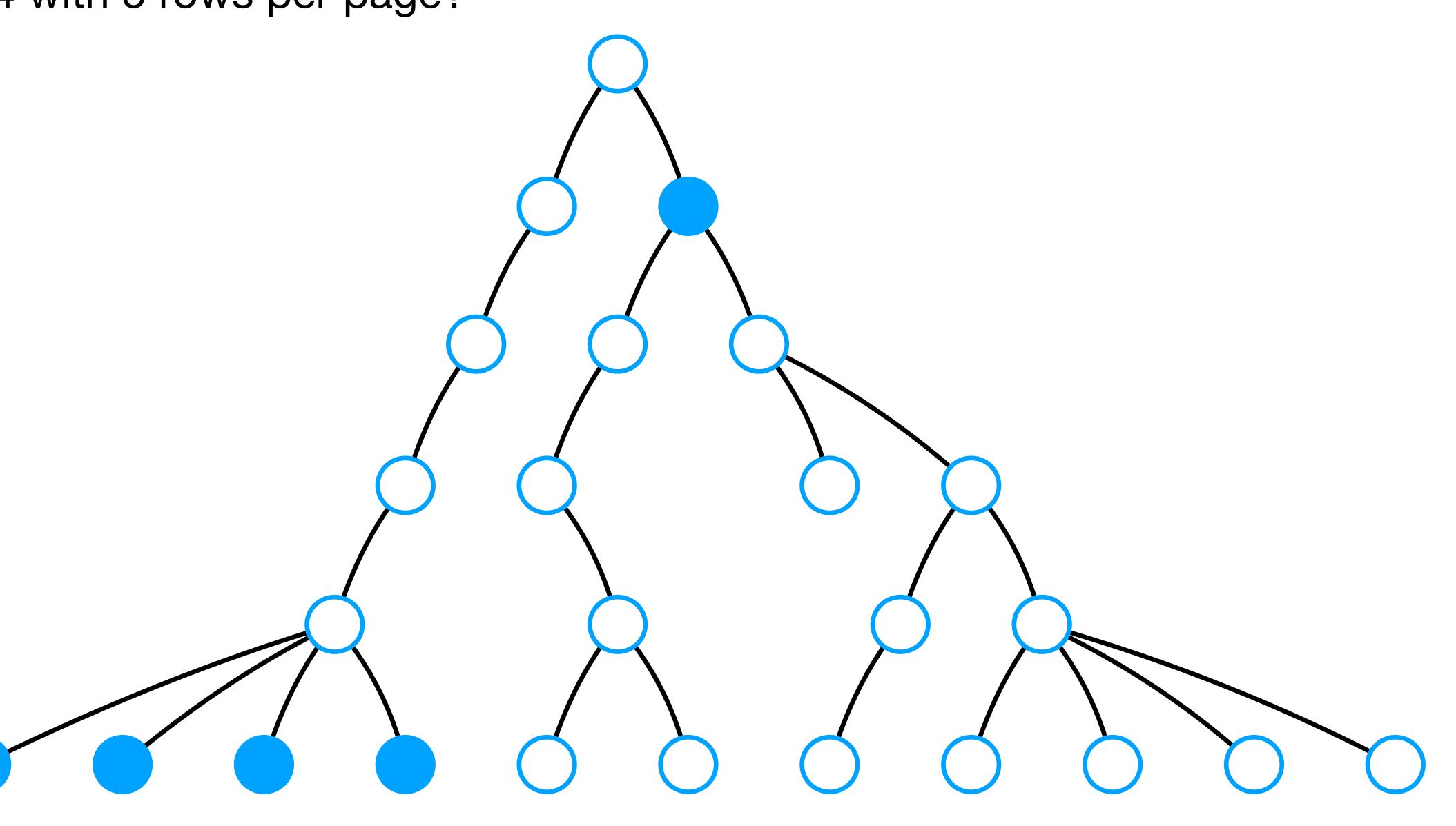








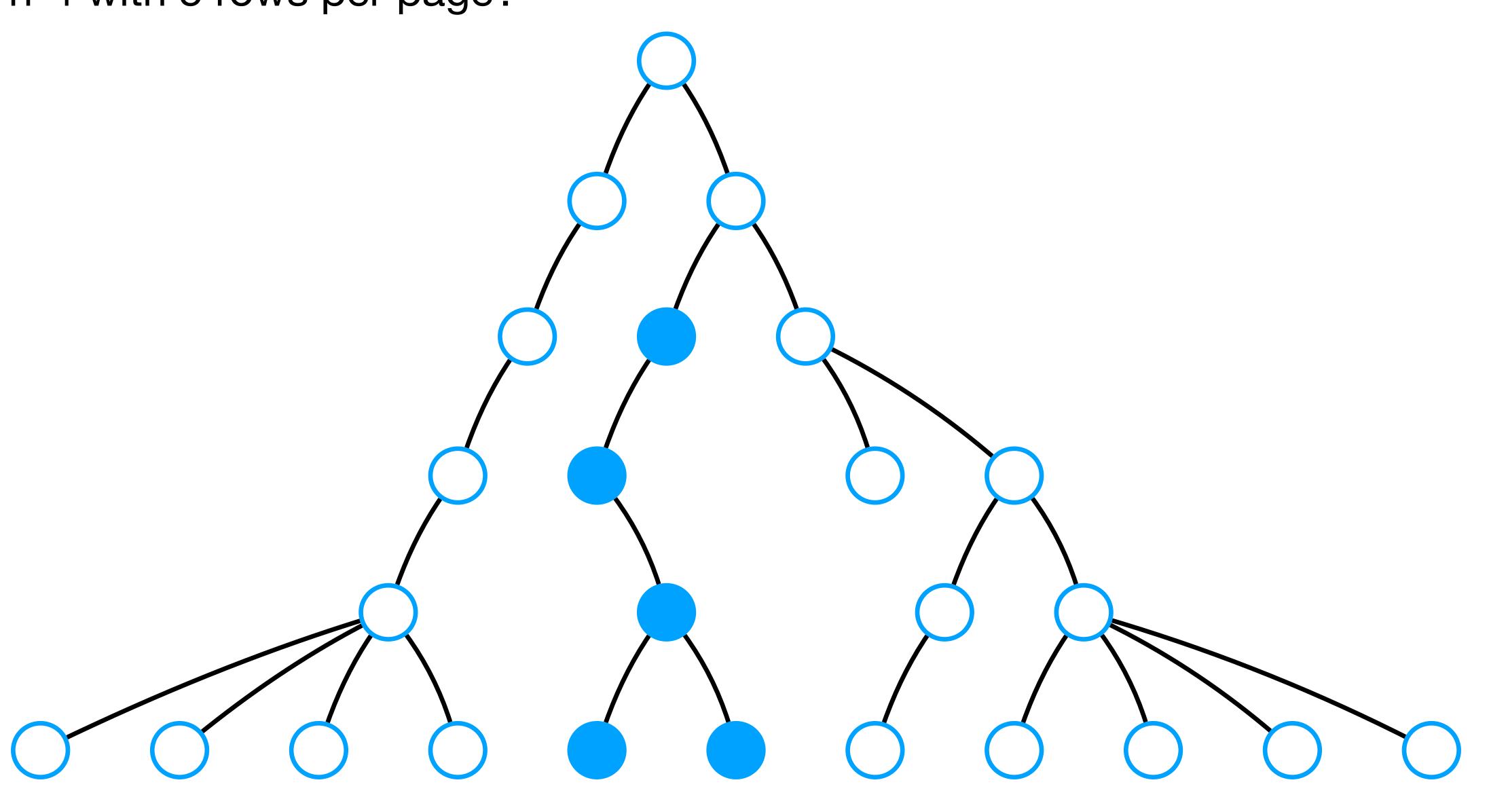








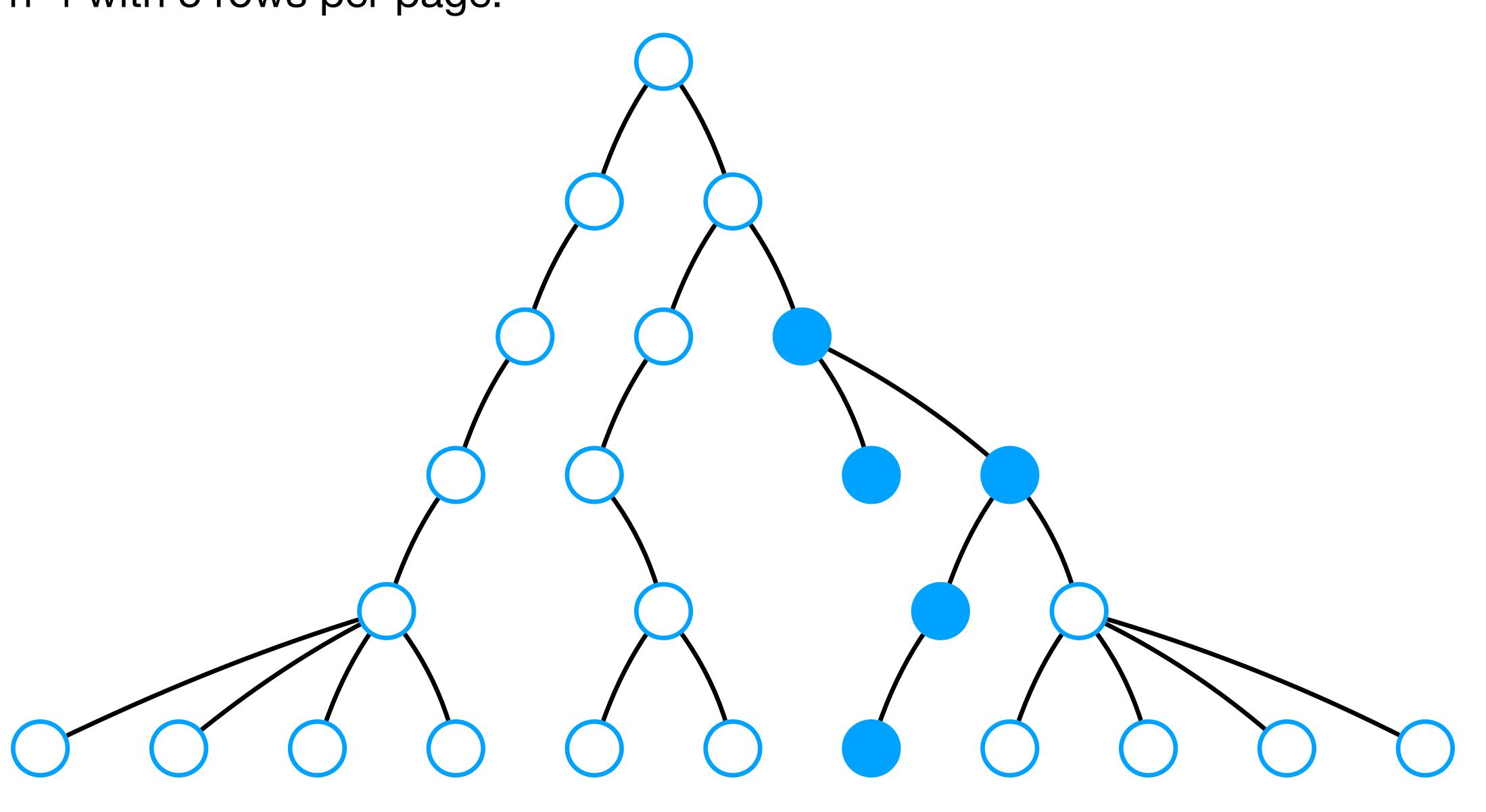








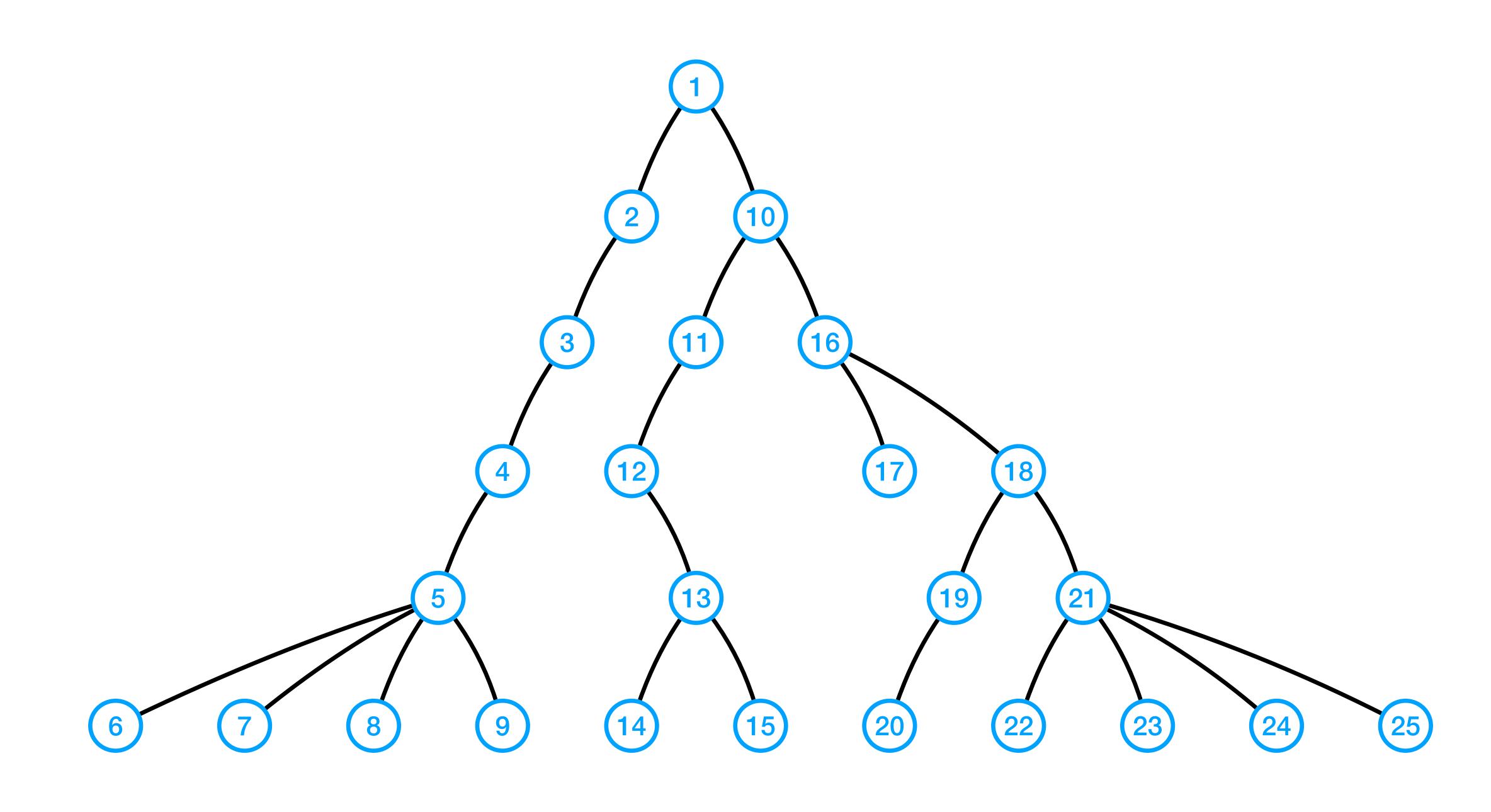


















Page based approach







Page based approach

- Quite easy to manipulate
- OFFSET & LIMIT
- Page n°4 with 5 objects per page -> n°16 to n°20







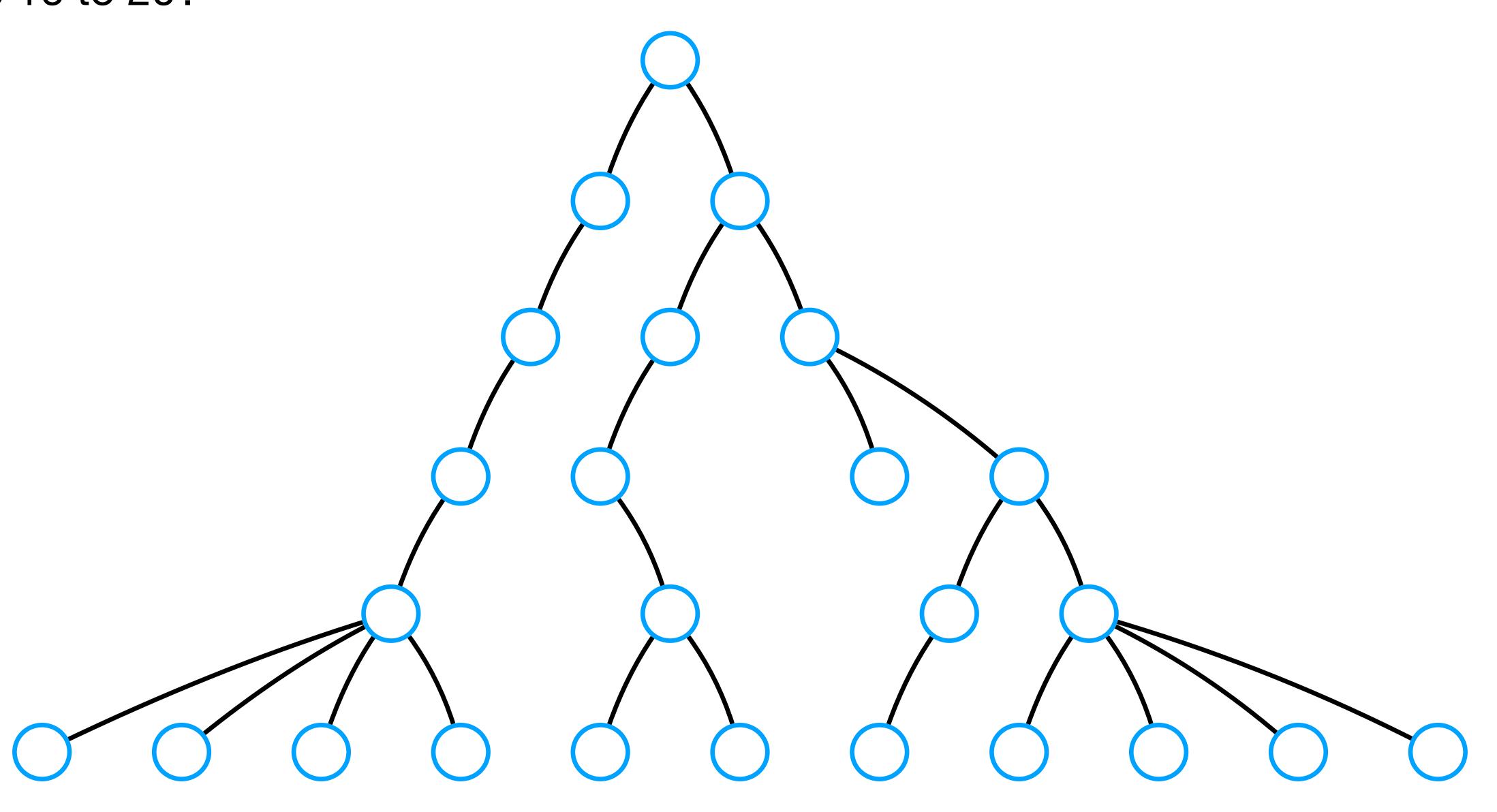








Node 16 to 20?









Cursor based approach







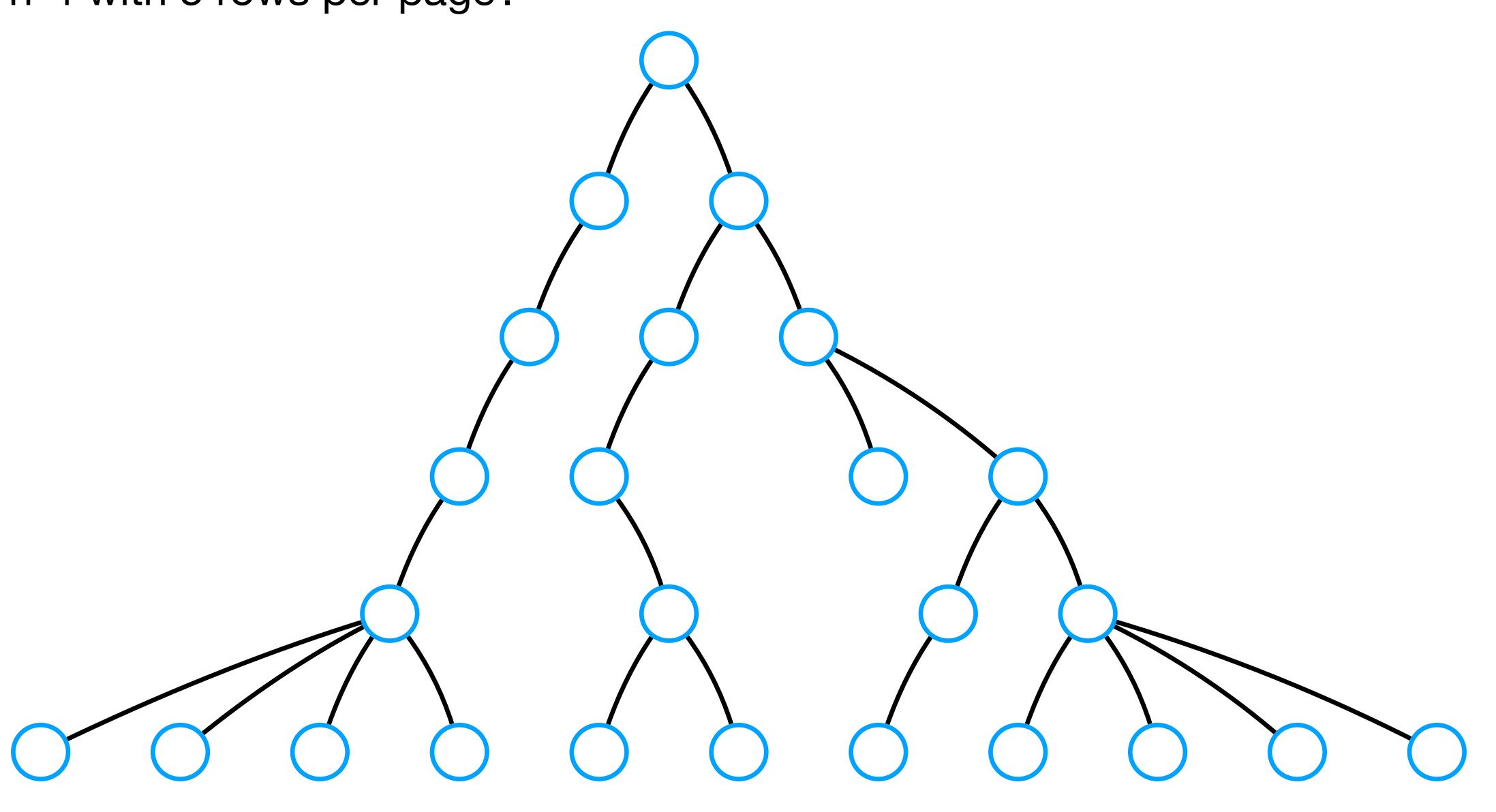
Cursor based approach

- Inspired by GraphQL relay and Spring Data among others
- Give you the ability to write performant tables for large dataset
- Navigate only on the necessary objects
- Dedicated variables that **need** to be used (cursor, search, direction, etc) \bullet







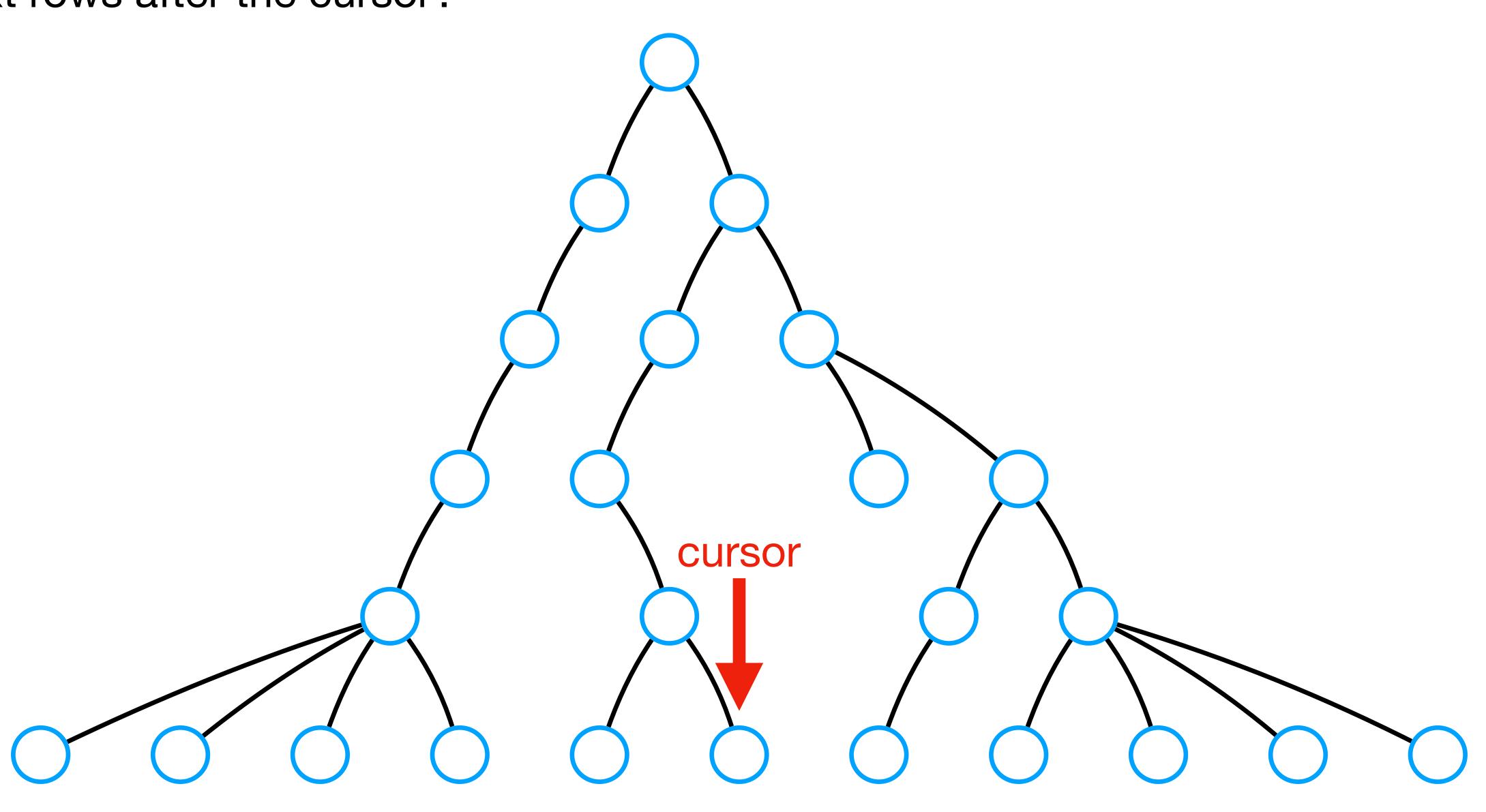








5 next rows after the cursor?

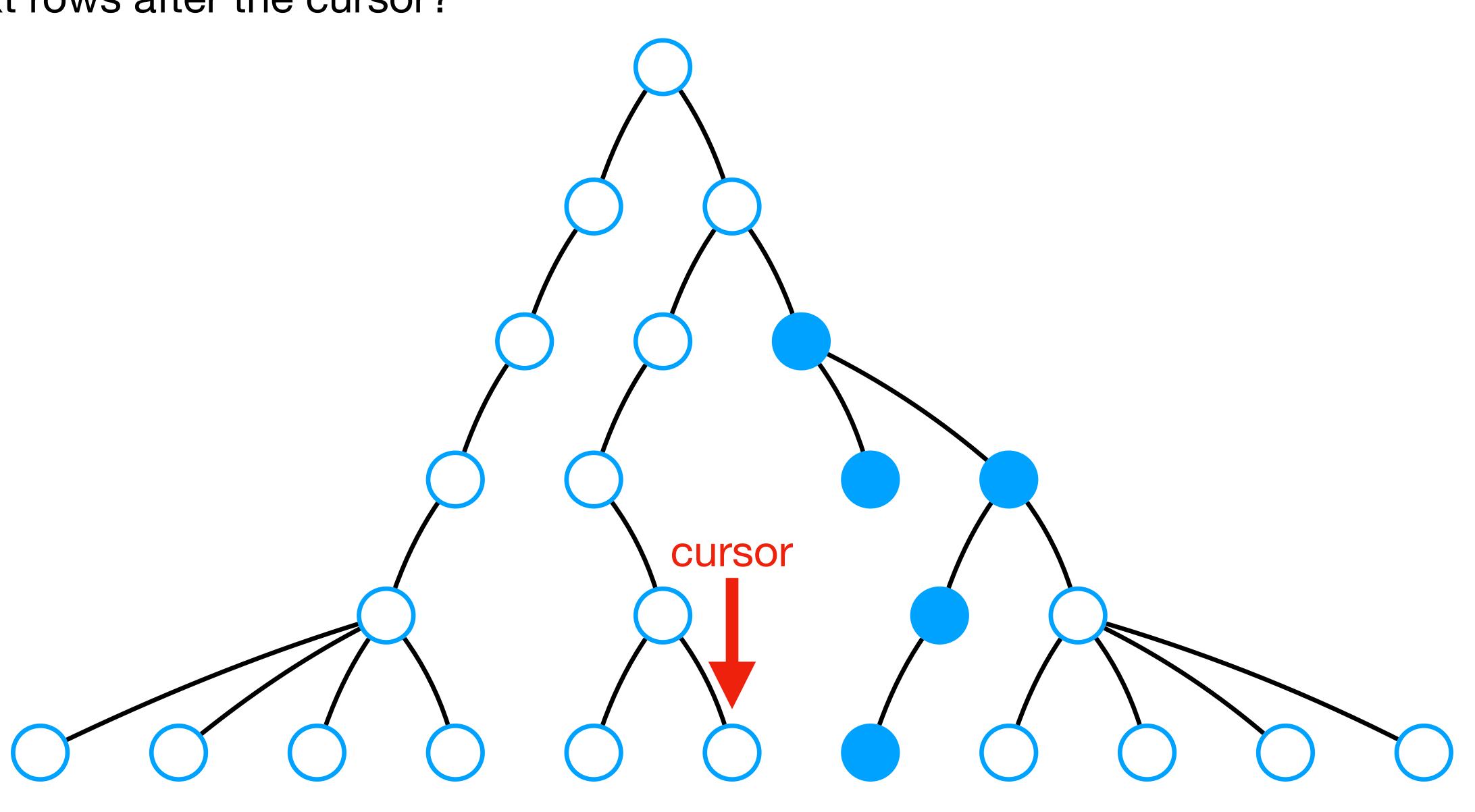








5 next rows after the cursor?









Pagination

Semantic Candidates Expression

aql:self.eAllContents()->filter(papaya::Task)->toPaginatedData(cursor, direction, size)







Pagination

Curso Curso	CursorBasedNavigationServices.java ×		ITreelterator.java 🛛 🖄
29	public class CursorBasedNavigationServices { 13 usages 🖄 Florian ROUËNÉ 💮 🙆 👍 4 🛫 3 🧄 4	29 pi	ublic class ForwardTreeIterator implements Iterator <eobject> { 1usage 🖄 Florian ROUËNÉ 🛛 😔 2 💧 4.7 🗛 1 🛫 3</eobject>
31 32 33	<pre>public PaginatedData collect(EObject self, EObject cursor, String direction, int size) { & Florian ROUËNÉ return this.collect(self, cursor, direction, size, EObject object -> true); }</pre>	30 31 32	<pre>private final Predicate<eobject> filterPredicate; 2 usages private EObject rootEObject; 8 usages</eobject></pre>
34 35	<pre>public PaginatedData collect(EObject self, EObject cursor, String direction, int size, Predicate<eobject> fil</eobject></pre>	33 34 35	private boolean includeRoot; 4 usages
36 37 38	<pre>var rootEObject = self; if (cursor != null) { rootEObject = cursor;</pre>	36 37	<pre>private List<iterator<eobject>> iterators; 31 usages</iterator<eobject></pre>
39 40	}	38 39	<pre>private Iterator<eobject> nextPruneIterator; 9 usages</eobject></pre>
41 42	<pre>boolean isPrevDirection = "PREV".equalsIgnoreCase(direction);</pre>	40 41	<pre>private Iterator<eobject> nextRemoveIterator; 4 usages</eobject></pre>
43 44 45	Iterator <eobject> <u>iterator</u> = new ForwardTreeIterator(<u>rootEObject</u>, includeRoot: cursor == null, filterPredic if (isPrevDirection) { <u>iterator</u> = new BackwardTreeIterator(<u>rootEObject</u>, includeRoot: false, filterPredicate);</eobject>	42 43 44	<pre>public ForwardTreeIterator(EObject rootEObject, boolean includeRoot, Predicate<eobject> filterPredicate this.rootEObject = Objects.requireNonNull(rootEObject); this.filterPredicate = Objects.requireNonNull(filterPredicate);</eobject></pre>
46	}	45	<pre>this.includeRoot = includeRoot && filterPredicate.test(rootEObject);</pre>
52 53 54	<pre>if (isPrevDirection) { Collections reverse(result):</pre>	53 54	<pre>} else { hasNext = this.hasMoreElements():</pre>
53	<pre>if (isPrevDirection) { Collections.reverse(result);</pre>	54	<pre>} else { hasNext = this.hasMoreElements();</pre>
53			
53 54 55 56 57 58 59 60	<pre>Collections.reverse(result); } boolean hasPreviousPage; if (isPrevDirection) { hasPreviousPage = iterator.hasNext(); } else {</pre>	54 55 56 57 58 59	<pre>hasNext = this.hasMoreElements(); } if (!hasNext) {</pre>
53 54 55 56 57 58 59 60 61 62	<pre>Collections.reverse(result); } boolean hasPreviousPage; if (isPrevDirection) { hasPreviousPage = iterator.hasNext(); } else { hasPreviousPage = cursor != null; }</pre>	54 55 56 57 58 59 60 61	<pre>hasNext = this.hasMoreElements(); } if (!hasNext) { hasNext = this.hasNextRelative(); } return hasNext; }</pre>
53 54 55 56 57 58 59 60 61 62 63 64	<pre>Collections.reverse(result); } boolean hasPreviousPage; if (isPrevDirection) { hasPreviousPage = iterator.hasNext(); } else { hasPreviousPage = cursor != null; } boolean hasNextPage; if (isPrevDirection) {</pre>	54 55 56 57 58 59 60	<pre>hasNext = this.hasMoreElements(); } if (!hasNext) { hasNext = this.hasNextRelative(); } return hasNext; } private boolean hasAnyElement() { 1usage & Florian ROUËNÉ var iterator = this.getNextChild(this.rootEObject);</pre>
53 54 55 56 57 58 59 60 61 62 63	<pre>Collections.reverse(result); } boolean hasPreviousPage; if (isPrevDirection) { hasPreviousPage = iterator.hasNext(); } else { hasPreviousPage = cursor != null; } boolean hasNextPage; if (isPrevDirection) { hasNextPage = true; } else {</pre>	54 55 56 57 58 59 60 61 62 63	<pre>hasNext = this.hasMoreElements(); } if (!hasNext) { hasNext = this.hasNextRelative(); } return hasNext; } private boolean hasAnyElement() { 1 usage & Florian ROUËNÉ</pre>
53 54 55 56 57 58 59 60 61 62 63 64 65 66	<pre>Collections.reverse(result); } boolean hasPreviousPage; if (isPrevDirection) { hasPreviousPage = iterator.hasNext(); } else { hasPreviousPage = cursor != null; } boolean hasNextPage; if (isPrevDirection) { hasNextPage = true;</pre>	54 55 56 57 58 59 60 61 62 63 64 65	<pre>hasNext = this.hasMoreElements(); } if (!hasNext) { hasNext = this.hasNextRelative(); } return hasNext; } private boolean hasAnyElement() { 1usage & Florian ROUËNÉ var iterator = this.getNextChild(this.rootEObject); this.iterators = new ArrayList<>(); var hasNext = iterator.hasNext();</pre>
53 54 55 56 57 58 59 60 61 62 63 64 65 66 65 66 67 68 69 70	<pre>Collections.reverse(result); } boolean hasPreviousPage; if (isPrevDirection) { hasPreviousPage = iterator.hasNext(); } else { hasPreviousPage = cursor != null; } boolean hasNextPage; if (isPrevDirection) { hasNextPage = true; } else { hasNextPage = count == size && iterator.hasNext(); }</pre>	54 55 56 57 58 59 60 61 62 63 64 65 66 65	<pre>hasNext = this.hasMoreElements(); } if (!hasNext) { hasNext = this.hasNextRelative(); } return hasNext; } private boolean hasAnyElement() { 1 usage & Florian ROUËNÉ var iterator = this.getNextChild(this.rootEObject); this.iterators = new ArrayList<>(); var hasNext = iterator.hasNext(); if (hasNext) {</pre>
53 54 55 56 57 58 59 60 61 62 63 64 65 66 65 66 65 68 69 70	<pre>Collections.reverse(result); } boolean hasPreviousPage; if (isPrevDirection) { hasPreviousPage = iterator.hasNext(); } else { hasPreviousPage = cursor != null; } boolean hasNextPage; if (isPrevDirection) { hasNextPage = true; } else { hasNextPage = count == size && iterator.hasNext(); } return new PaginatedData(result, hasPreviousPage, hasNextPage, totalRowCount: -1); } public PaginatedData toPaginatedData(List<object> objects, Object cursor, String direction, int size) { no use List<object> subList = new ArrayList<>(); }</object></object></pre>	54 55 56 57 58 59 60 61 62 63 64 65 66 65 66 67 68 69 70 71 72 @	<pre>hasNext = this.hasMoreElements(); } if (!hasNext) { hasNext = this.hasNextRelative(); } return hasNext; } private boolean hasAnyElement() { 1usage & Florian ROUÊNÉ var iterator = this.getNextChild(this.rootEObject); this.iterators = new ArrayList<>(); var hasNext = iterator.hasNext(); if (hasNext) { this.iterators.add(iterator); } private Iterator<eobject> getNextChild(EObject eObject) { 3 usages & Florian ROUÊNÉ</eobject></pre>
53 54 55 56 57 58 59 60 61 62 63 64 65 64 65 66 67 68 69 70 71 72	<pre>Collections.reverse(result); } boolean hasPreviousPage; if (isPrevDirection) { hasPreviousPage = iterator.hasNext(); } else { hasPreviousPage = cursor != null; } boolean hasNextPage; if (isPrevDirection) { hasNextPage = true; } else { hasNextPage = count == size && iterator.hasNext(); } return new PaginatedData(result, hasPreviousPage, hasNextPage, totaRowCount: -1); } public PaginatedData toPaginatedData(List<object> objects, Object cursor, String direction, int size) { no use } </object></pre>	54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 67 68 69 70 71 72 20 71 72 73 74	<pre>hasNext = this.hasMoreElements(); } if (!hasNext) { hasNext = this.hasNextRelative(); } return hasNext; } private boolean hasAnyElement() { 1usage & Florian ROUËNÉ var iterator = this.getNextChild(this.rootEObject); this.iterators = new ArrayList<>(); var hasNext = iterator.hasNext(); if (hasNext) { this.iterators.add(iterator); } return hasNext; } private Iterator<eobject> getNextChild(EObject eObject) { 3 usages & Florian ROUËNÉ Iterator<eobject> nextChildIterator = null; } </eobject></eobject></pre>
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53 54 55 56 57 58 59 60 61 62 63 64 65 66 65 66 67 68 69 70 71 72 73 74	<pre>Collections.reverse(result); } boolean hasPreviousPage; if (isPrevDirection) { hasPreviousPage = iterator.hasNext(); } else { hasPreviousPage = cursor != null; } boolean hasNextPage; if (isPrevDirection) { hasNextPage = true; } else { hasNextPage = count == size && iterator.hasNext(); } return new PaginatedData(result, hasPreviousPage, hasNextPage, totalRowCount: -1); } public PaginatedData toPaginatedData(List<object> objects, Object cursor, String direction, int size) { mousi List<object> subList = new ArrayList<>(); boolean hasNext = false; } </object></object></pre>	54 55 56 57 58 59 60 61 62 63 64 65 63 64 65 66 67 68 69 70 71 72 22 73 74 75	<pre>hasNext = this.hasMoreElements(); } if (!hasNext) { hasNext = this.hasNextRelative(); } return hasNext; } private boolean hasAnyElement() { 1 usage &Florian ROUËNÉ var iterator = this.getNextChild(this.rootEObject); this.iterators = new ArrayList<>(); var hasNext = iterator.hasNext(); if (hasNext) { this.iterators.add(iterator); } return hasNext; } private Iterator<eobject> getNextChild(EObject eObject) { 3 usages &Florian ROUËNÉ Iterator<eobject> nextChildIterator = null; for (EObject child : eObject.eContents()) {</eobject></eobject></pre>







Sirius Web Tables

- Edit with various widgets
 - Textfield
 - Checkbox
 - Select
 - Custom widget







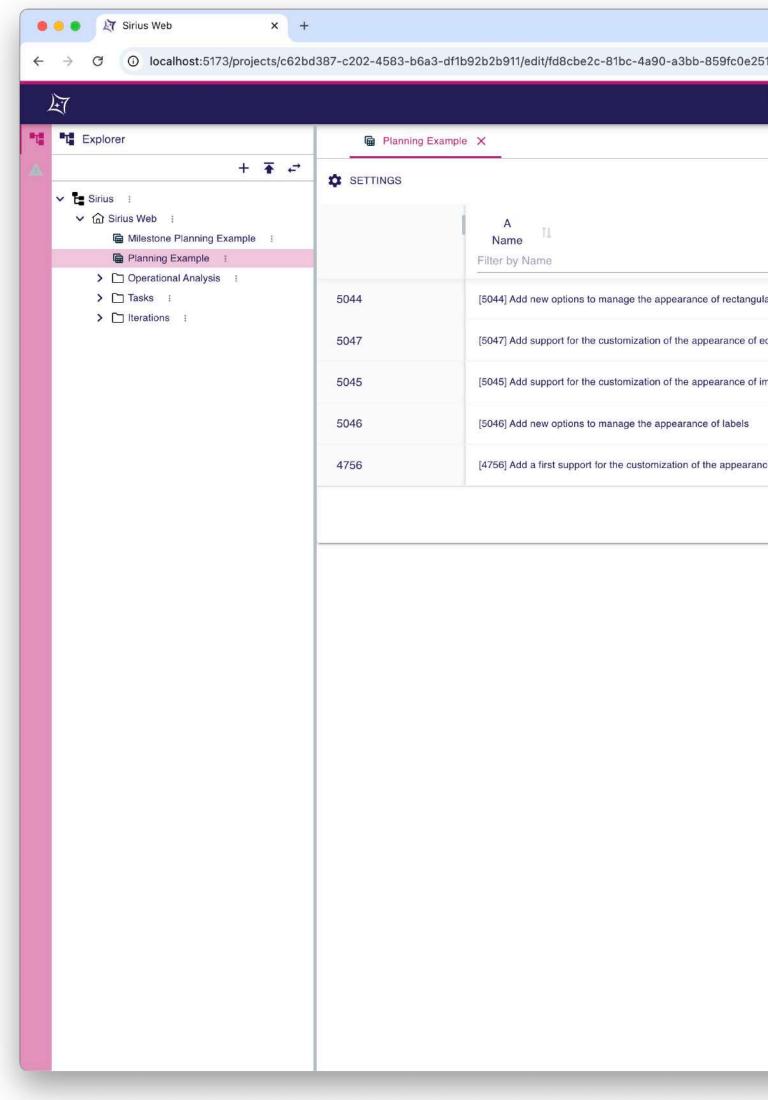








Filtering



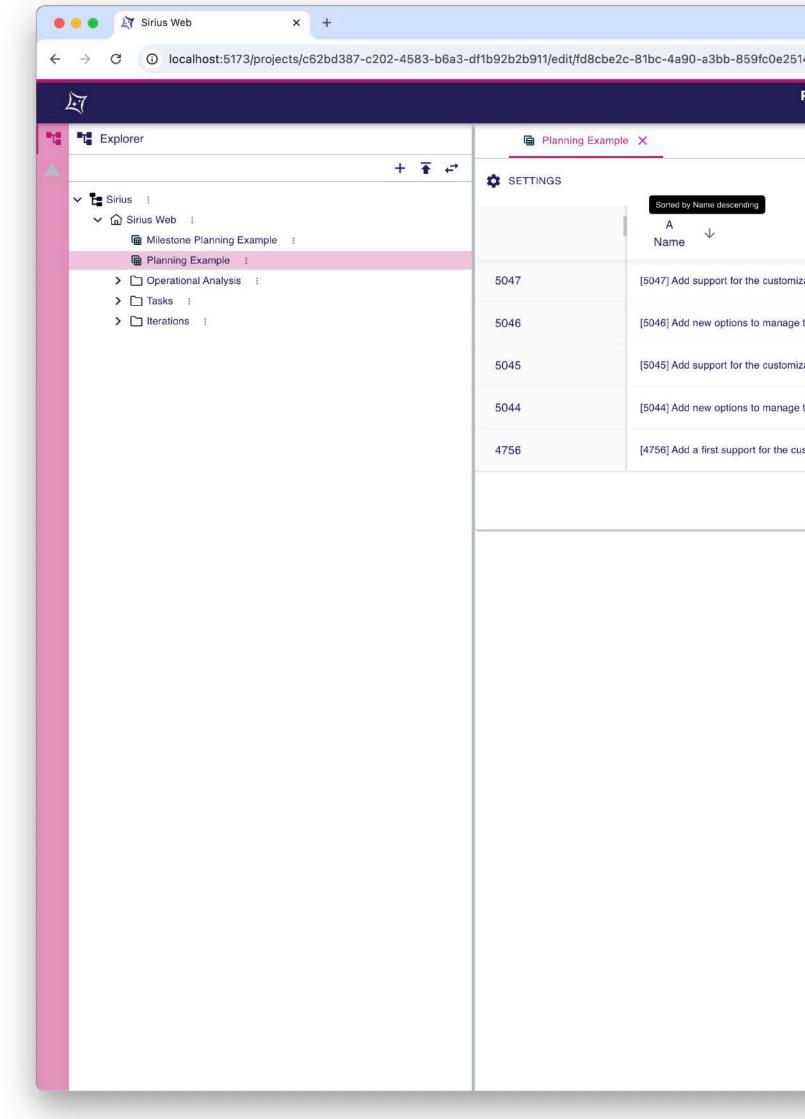
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Sirius Web Tables

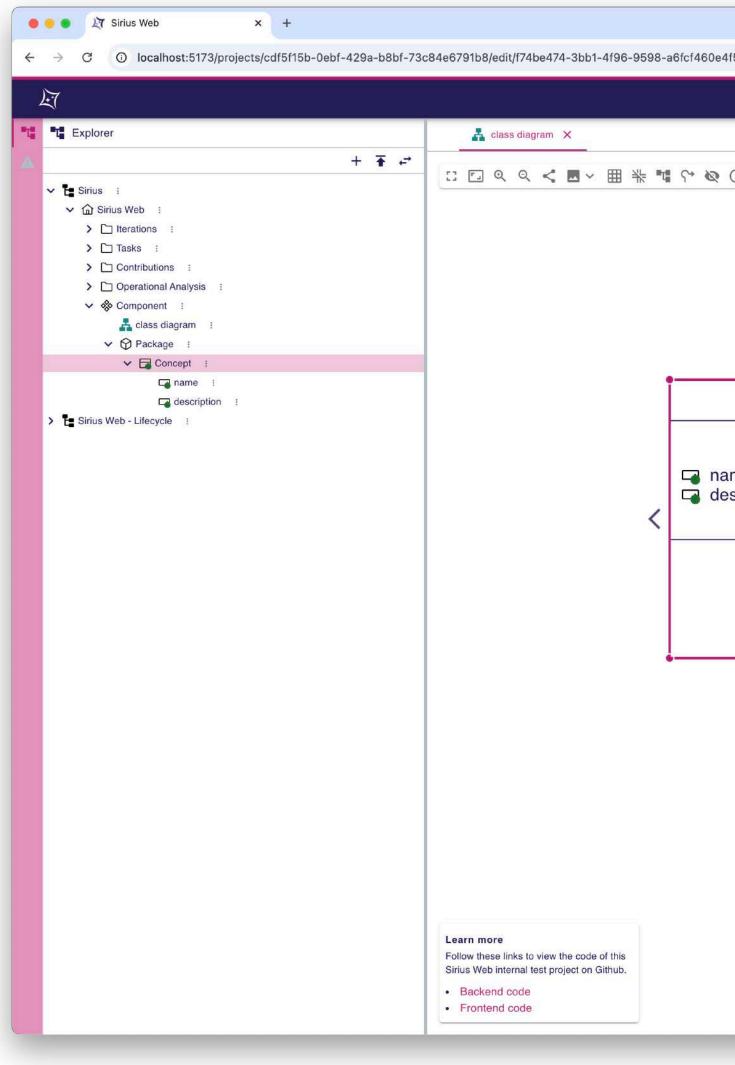
- Display data in a tabular view
- Edition with dedicated widget
- Pagination
- Edition
- CSV export
- Filtering
- Sorting
- Subrows
- And more...







Table within a form



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Conclusion







Representations

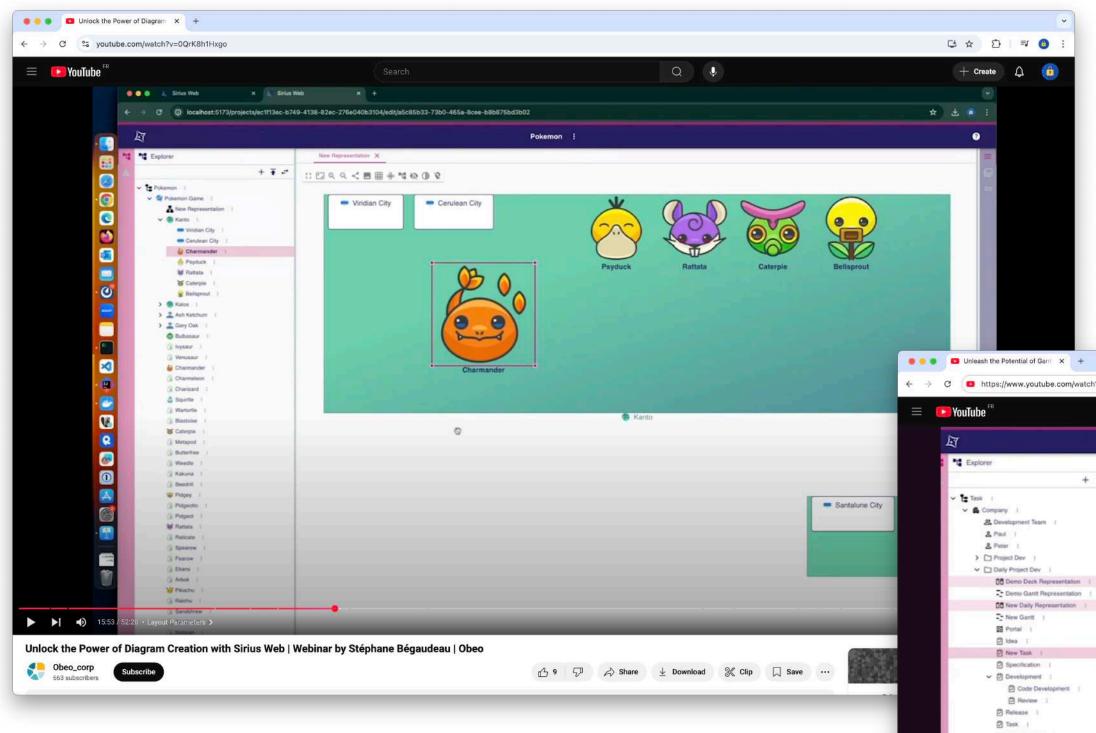
- Diagram
- Deck
- Gantt
- Portal
- Table
- Form
- Tree







Webinars



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Webinars

- Diagrams <u>https://www.youtube.com/watch?v=0QrK8h1Hxgo</u>
- Product tour, roadmap...

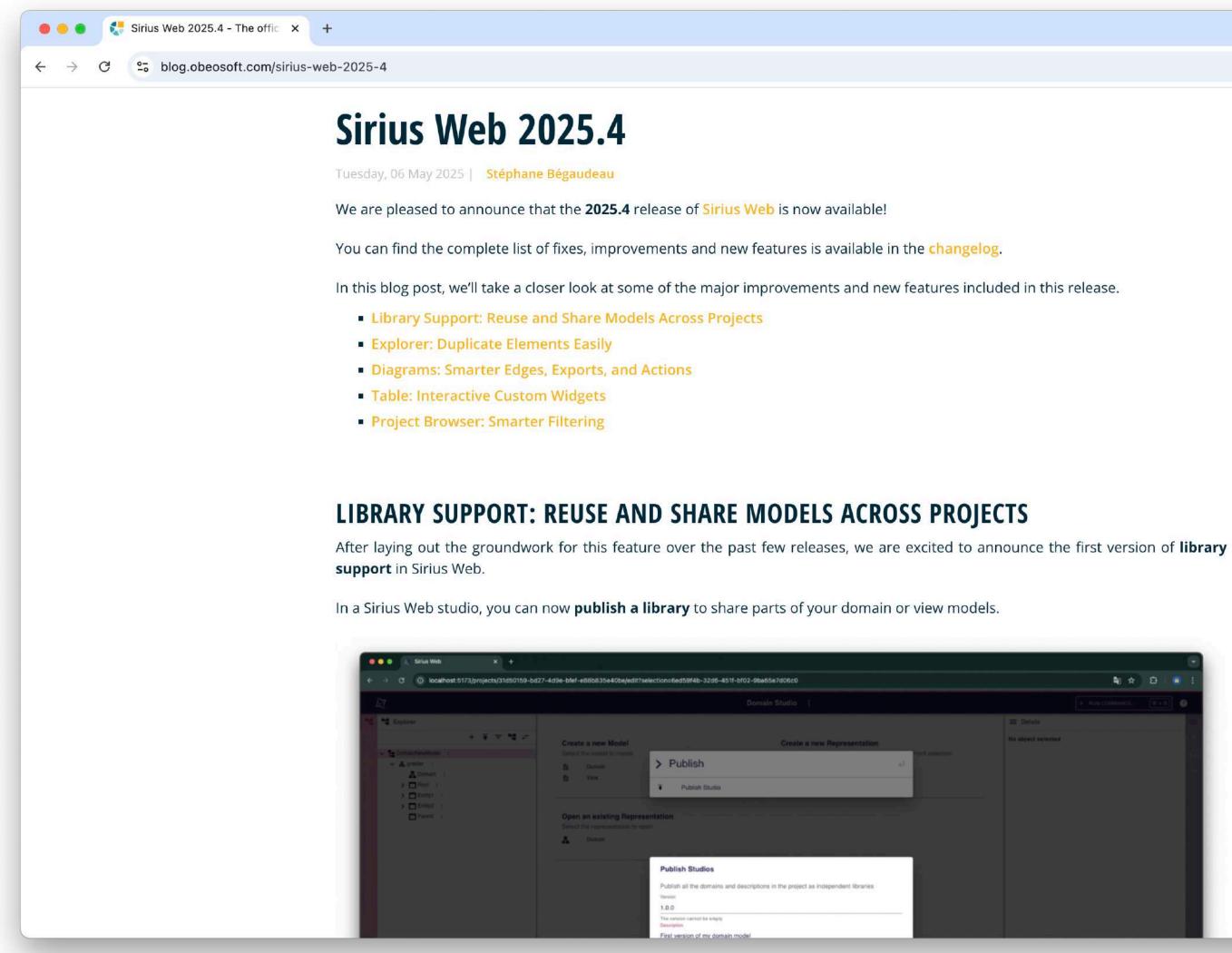
Gantt, Deck & Portal <u>https://www.youtube.com/watch?v=W_1D3zdGYz0</u>







https://blog.obeosoft.com

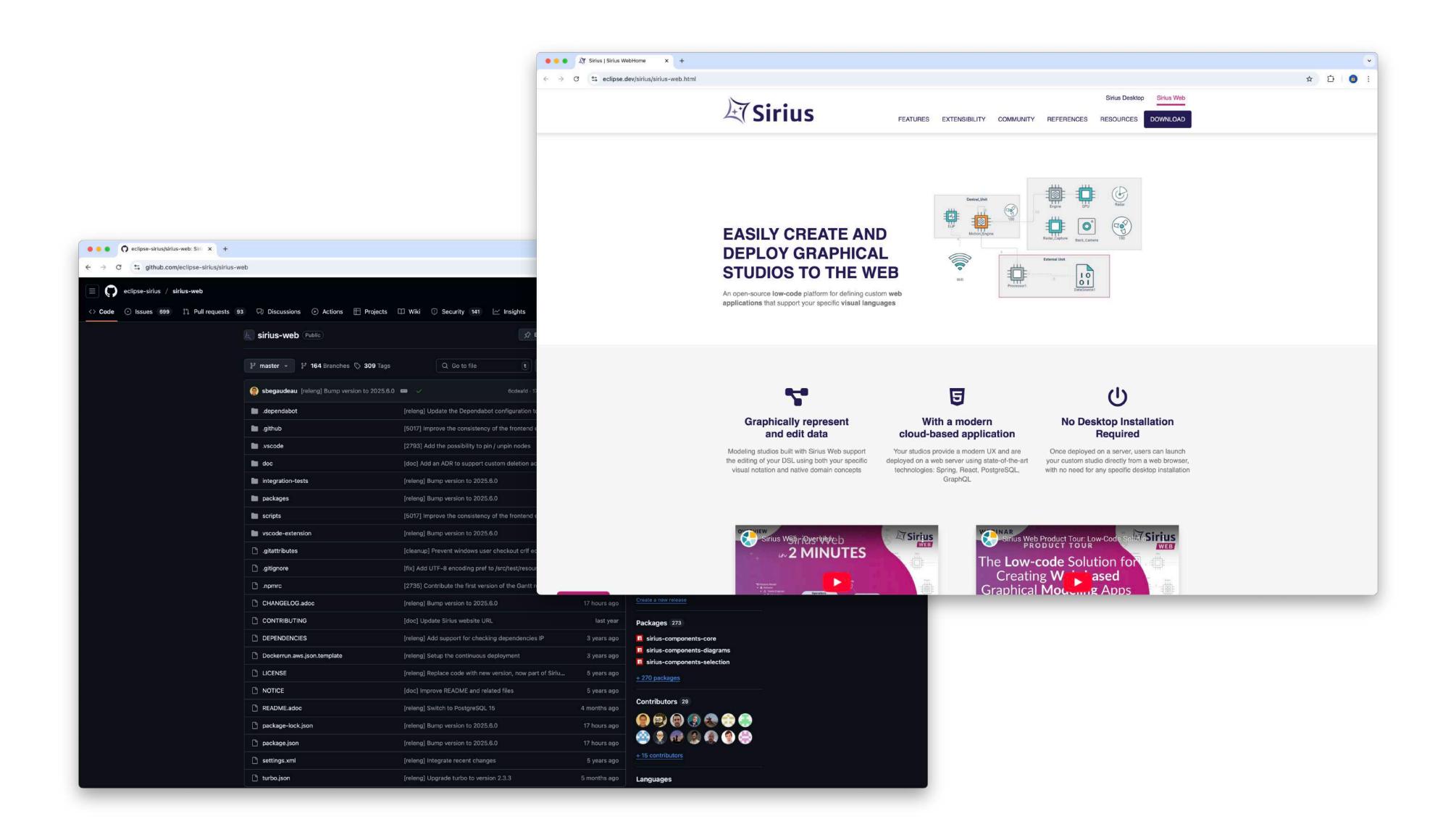








https://eclipse.dev/sirius/sirius-web.html









How to get started?

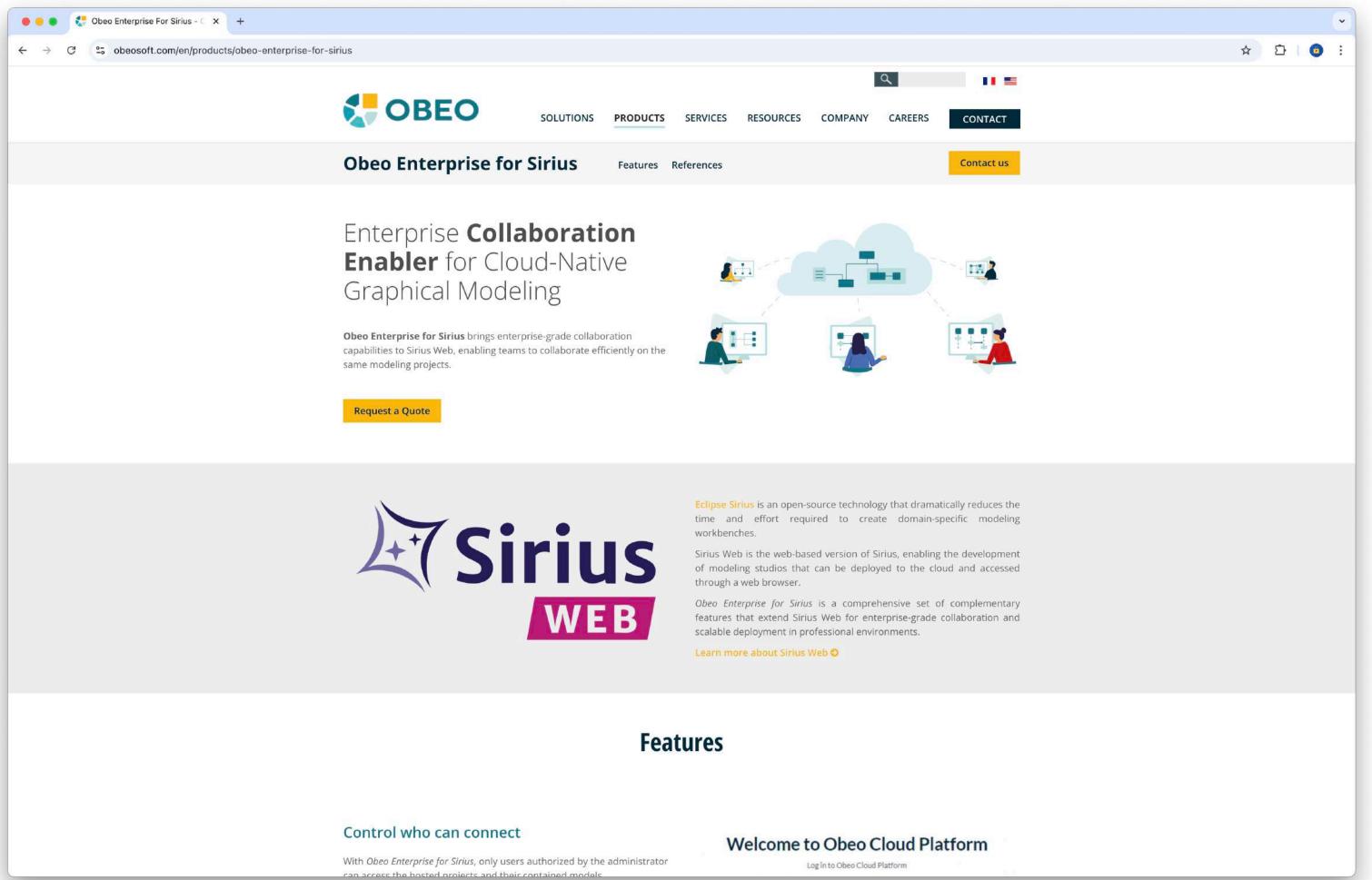
- Download Sirius Web and run it
 - See <u>https://github.com/eclipse-sirius/sirius-web</u>
- Integrate parts of Sirius Web in your own application
- Build a Sirius Web based application







Obeo Enterprise for Sirius









Obeo Enterprise for Sirius

- Extension for Sirius Web based applications
 - Authentication (login + password, OAuth2)
 - Authorization (private projects, team based access control, ...)
 - Webhooks
 - And more







Thank you for watching!







Questions?





