

Intro to Web Dev and React

3DC

Bryce Goh



Basic React Introduction

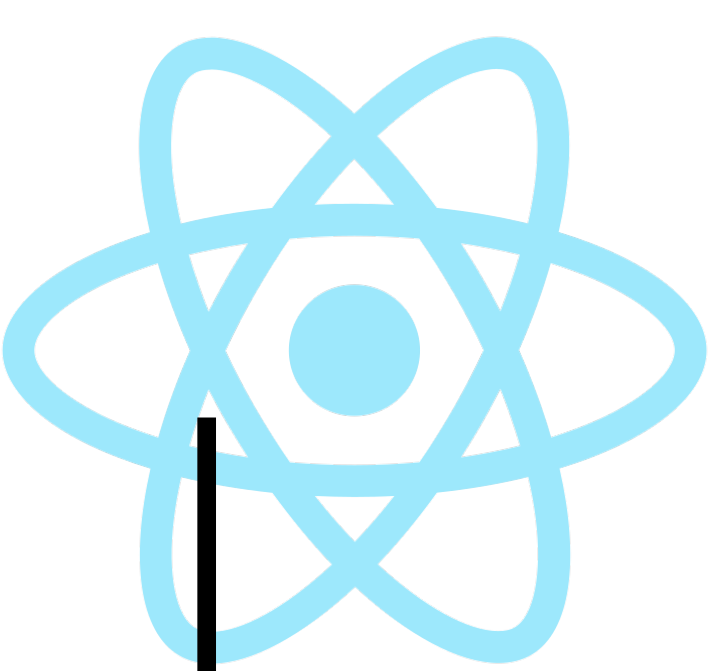
Basic overview of the web

Why react

Javascript Refreshers

Components and JSX

To-do App



Basic overview of the web



Browser

HTTP Request

GET

POST

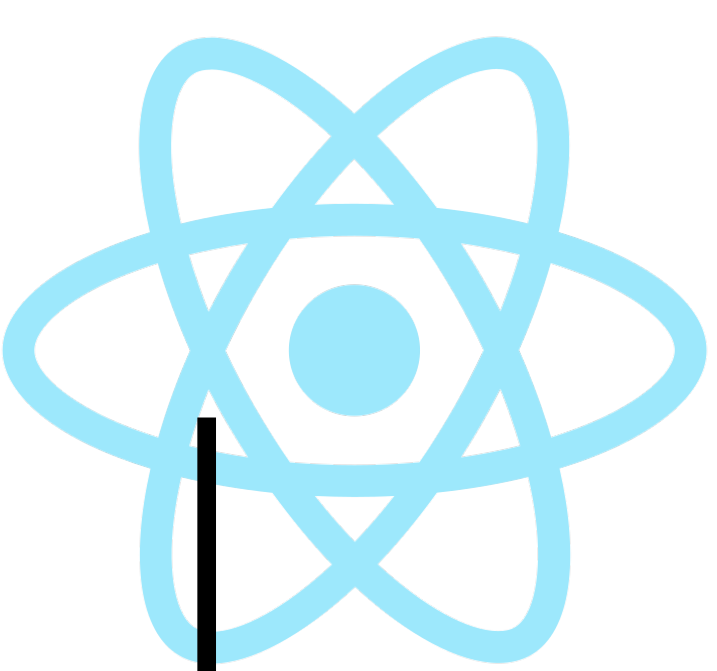
DELETE

PUT



Host Server

HTTP Response



Basic overview of the web

www.sutd.edu.sg



Browser

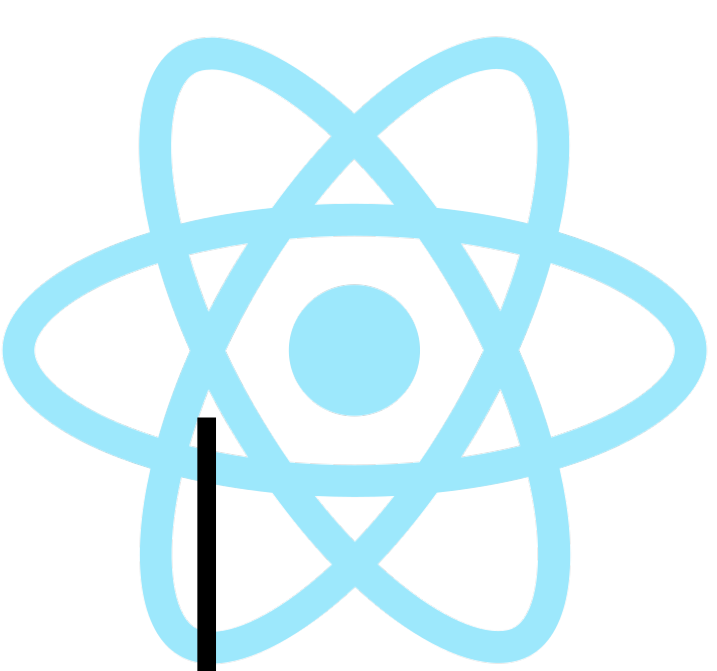
**HTTP Request
GET**



Domain Name System Server

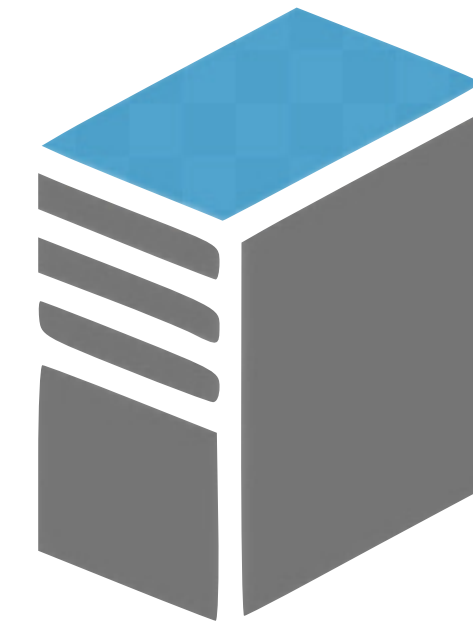


Host Server



Basic overview of the web

www.sutd.edu.sg



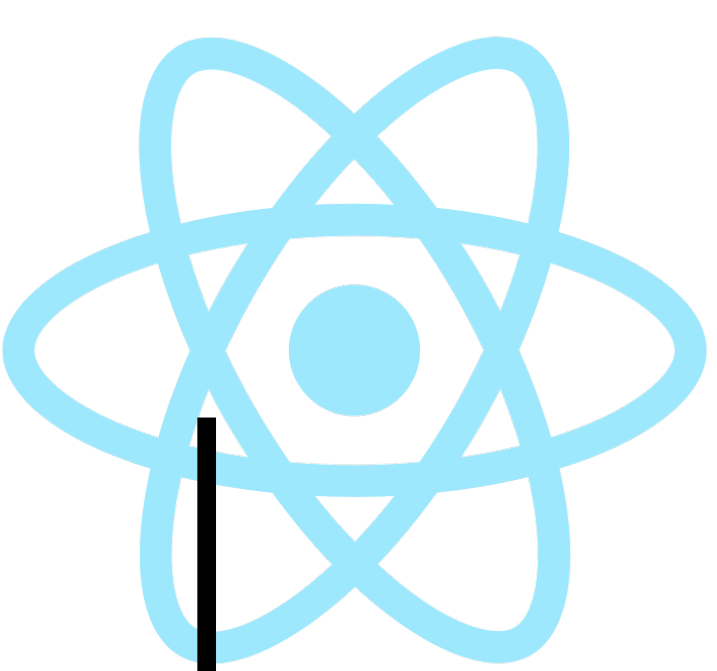
Domain Name System Server



Browser



Host Server



Basic overview of the web



123.123.321.321
Internet Protocol Address

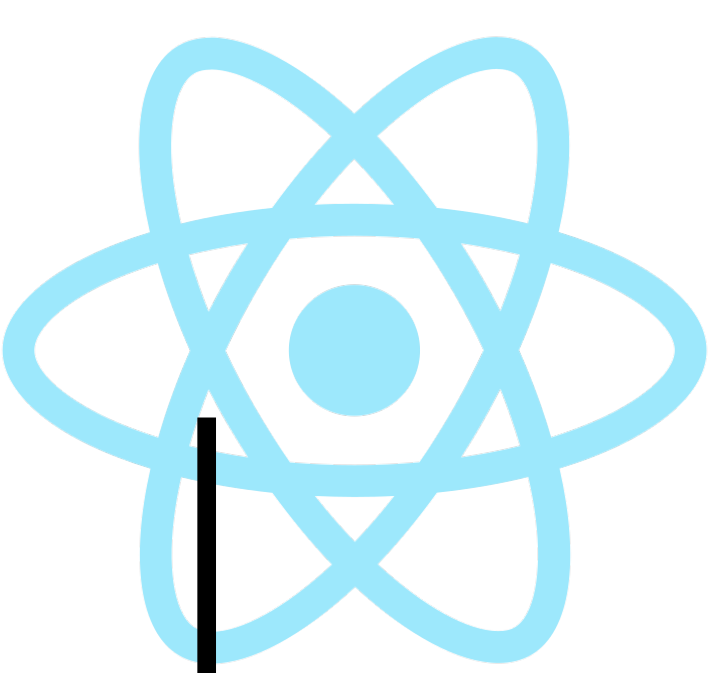
Domain Name System Server



Browser



Host Server



Basic overview of the web



Domain Name System Server

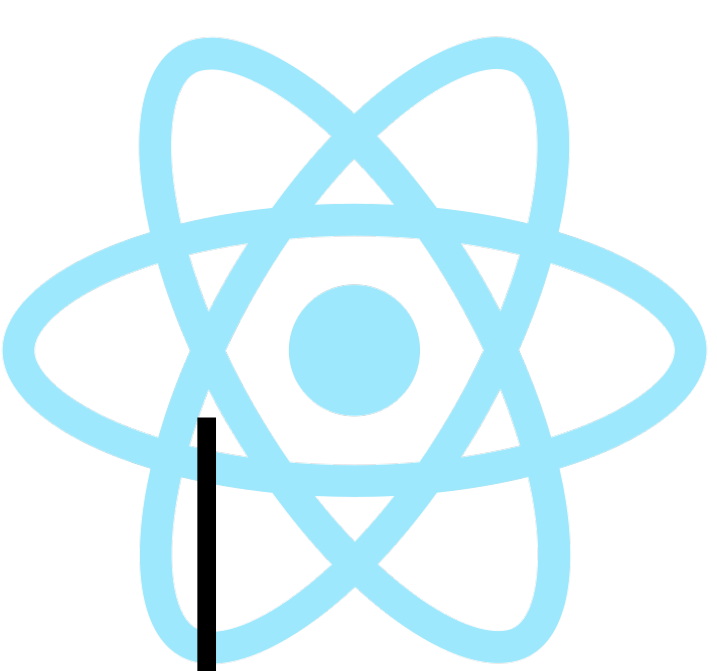


Browser

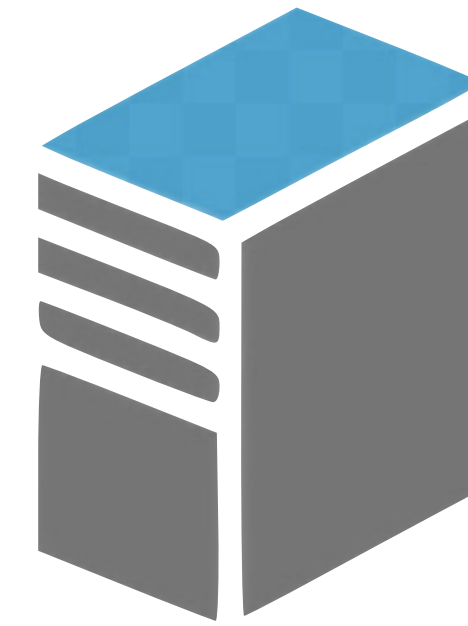
123.123.321.321



Host Server



Basic overview of the web

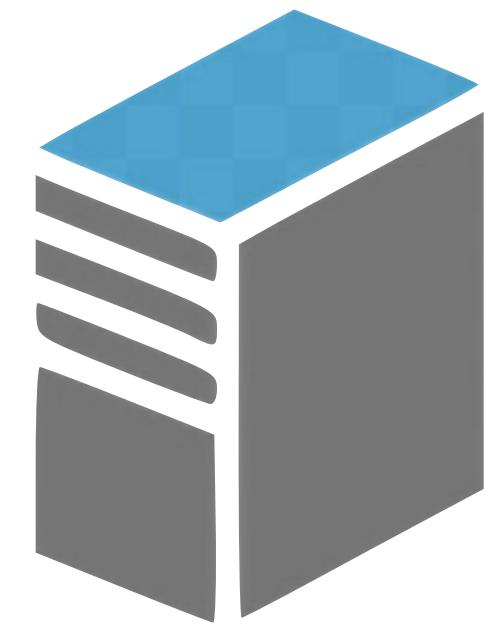


Domain Name System Server

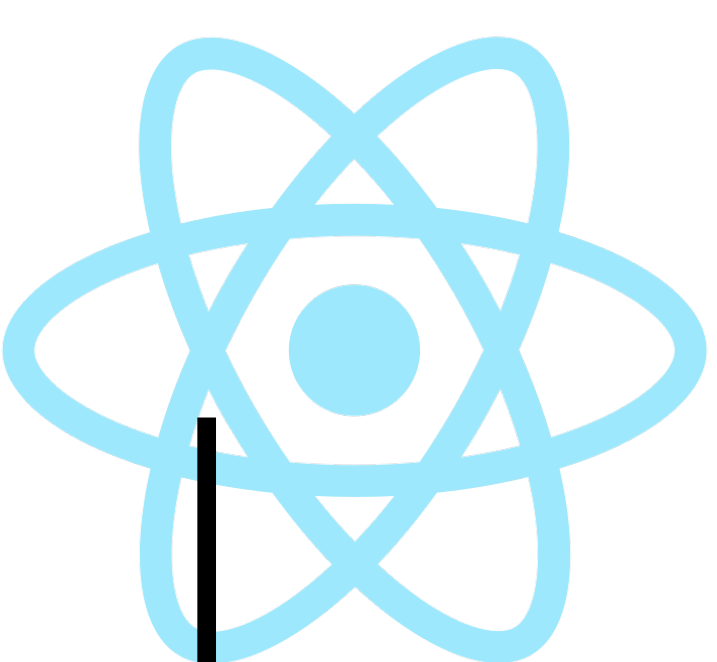


Browser

IP address



Host Server



Basic overview of the web

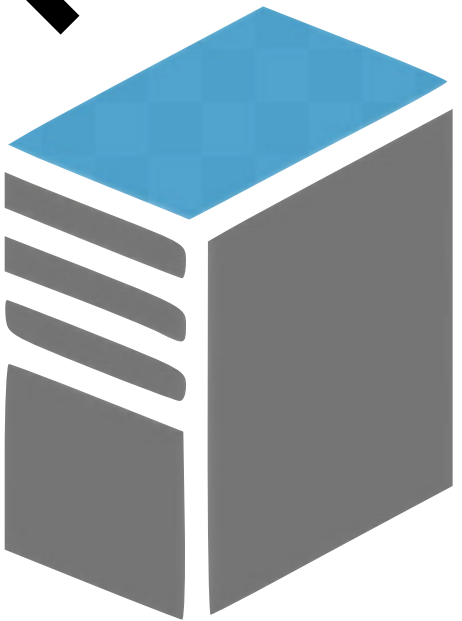
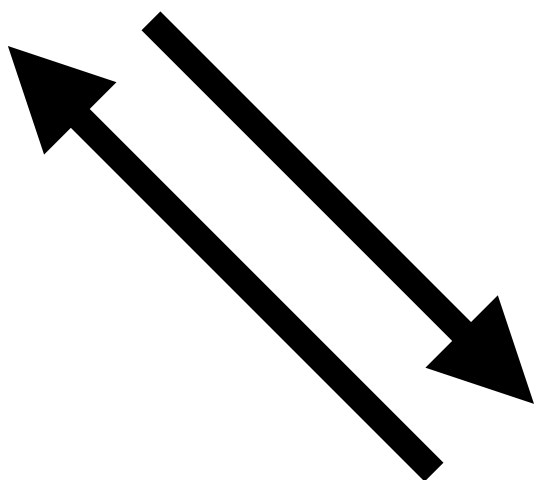
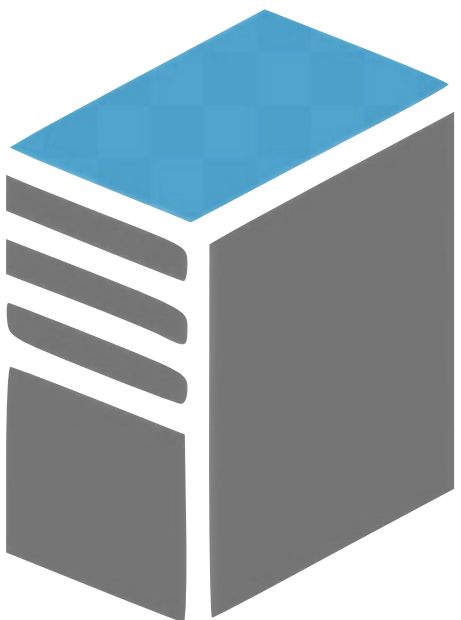
Application Programming Interface endpoint



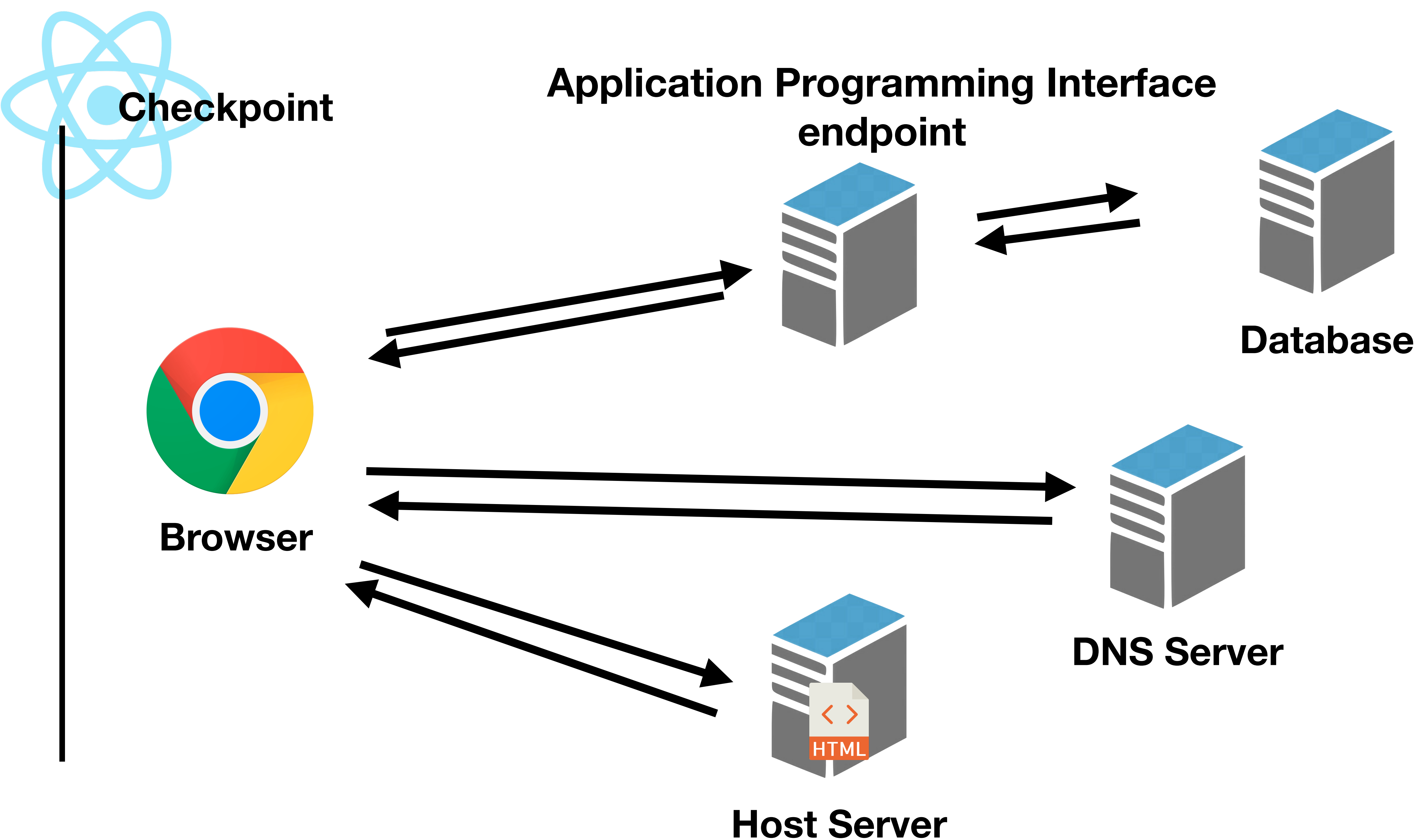
Browser

HTTP Request
GET

Response



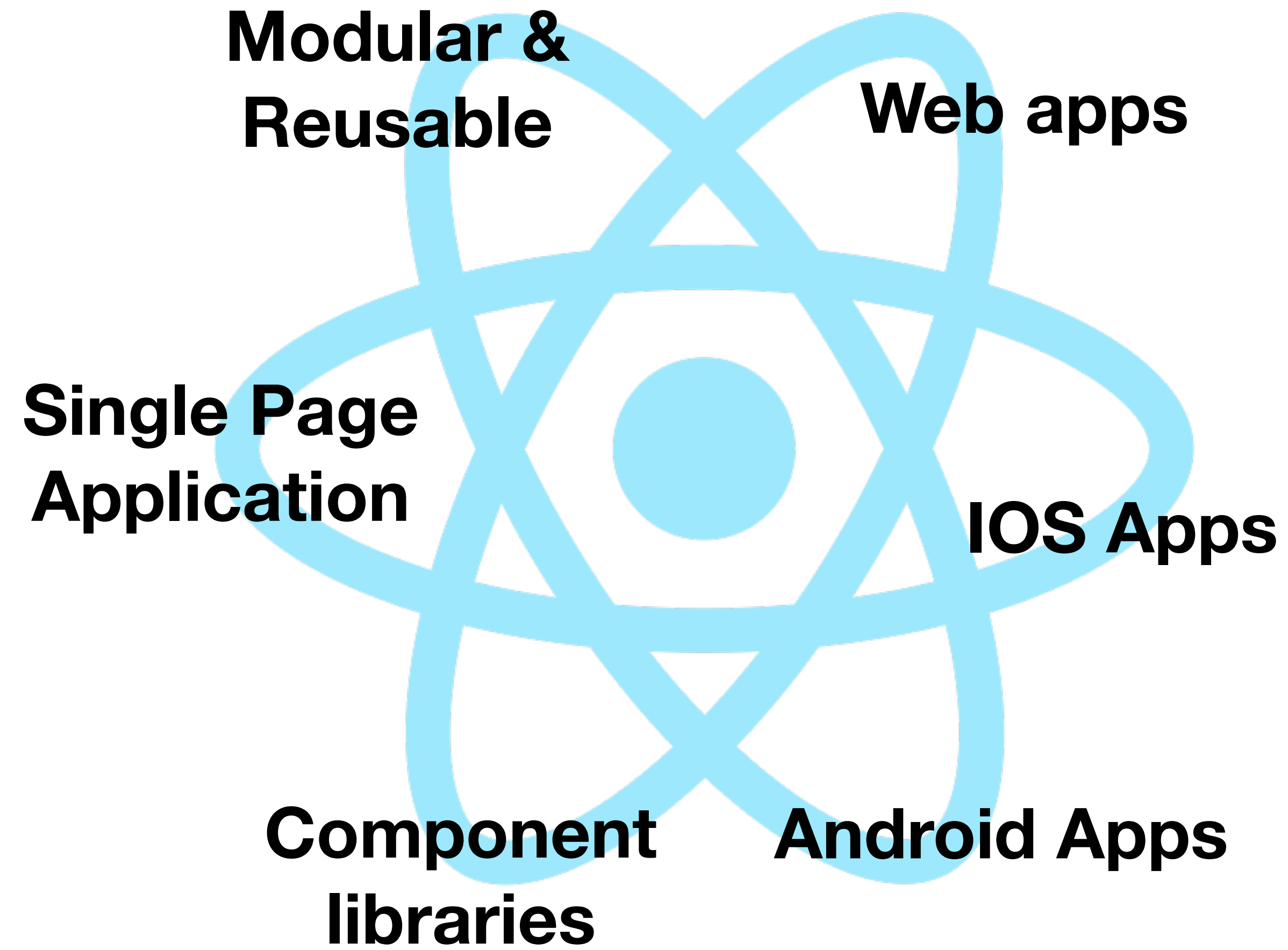
Database



Checkpoint

Questions?

Why react



Javascript Refreshers

Defining Variables

variable_name = “hello world”

Const variableName = “hello world”
Let variableName = “hello world”

List/Array & Objects/ Dictionary

List = [....]

**Dictionary = {
 Key: value
}**

Const list = [....]

**Const dictionary = {
 Key: value
}**

Javascript Refreshers

Functions

Def function_name(argument):

...

...

return(...)

Const functionName = (argument) => {

...

...

return(...)

}

Loops

For x in list:

print(x)

list.map((x , index) => {

console.log(x)

}

)

Checkpoint

Questions?

HTML/CSS Refreshers

```
1 <div>
2   <input/>
3 <button> save </button>
4 <div>
5   list 1
6 </div>
7 <div>
8   list 2
9 </div>
10 <div>
11   list 3
12 </div>
13 </div>
```

save

list 1

list 2

list 3

HTML/CSS Refreshers

<div>

<div/>

HTML/CSS Refreshers

<div>

<input>

</input>

<button

</button>

</div>

HTML/CSS Refreshers

<div>

<input>

.className{

background-colour:red

}

</input>

<button

</button>

</div>

HTML/CSS Refreshers

<div>

<input>

```
.className{  
background-colour:red  
}
```

</input>

<button

```
.className{  
align: center  
}
```

</button>

</div>

GOAL

Submit

HTML/CSS Refreshers

```
1 <div>
2   <input type="text"/>
3   <button> save </button>
4   <div>
5     list 1
6   </div>
7   <div>
8     list 2
9   </div>
10  <div>
11    list 3
12  </div>
13 </div>
```

save

list 1

list 2

list 3

Checkpoint

Questions?

REACT

Browser

Components

Components

REACT

Function

Props → Components → JSX



REACT

Function

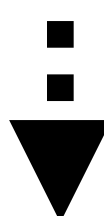
Props
OBJECT



Components



JSX



Objects

Arrays

Functions

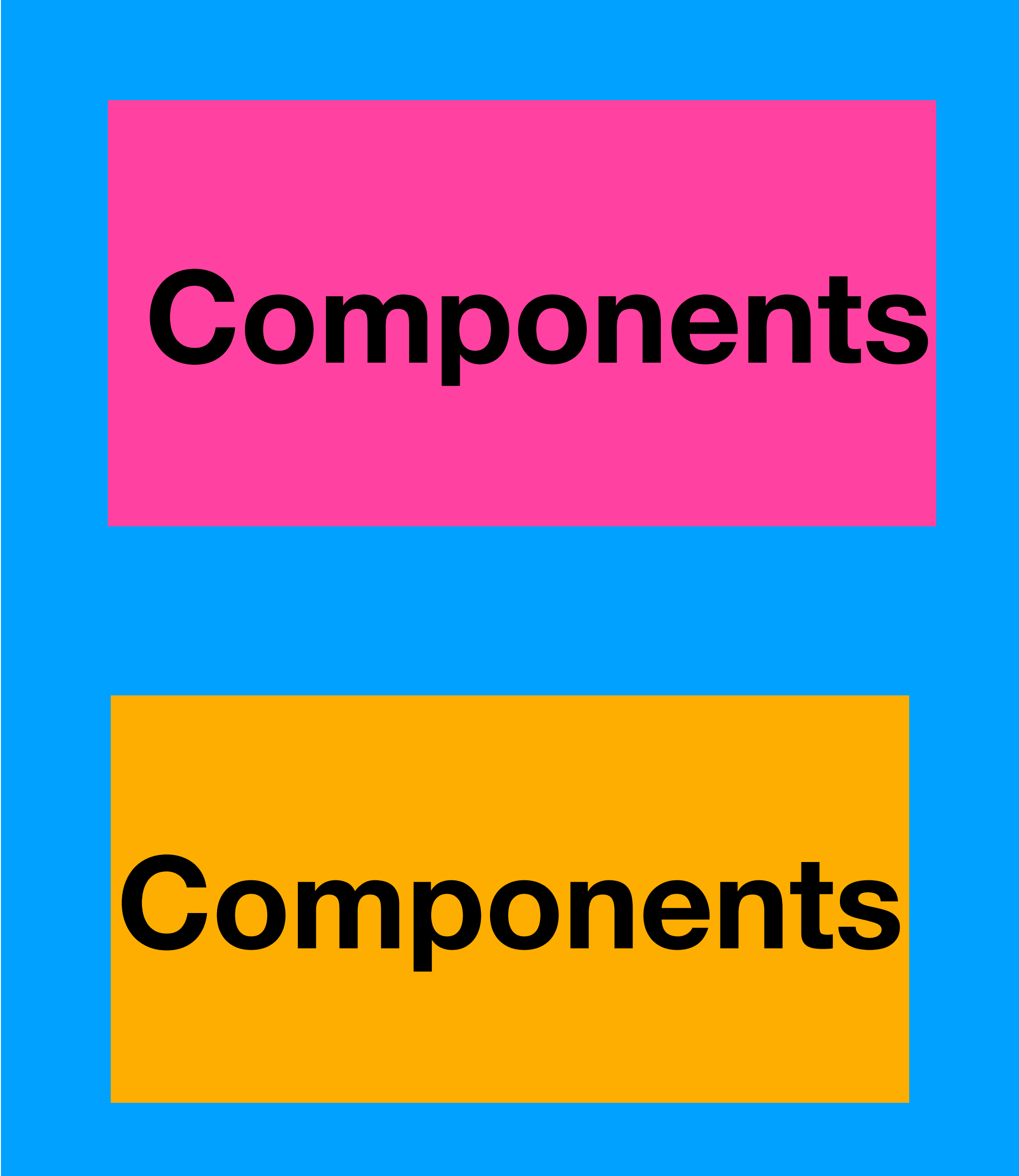
HTML

in javascript

Checkpoint

Questions?

REACT



State



DEMO For today

State

INPUT FIELD

SAVE BUTTON



DEMO For today

State

INPUT FIELD

DATA

SAVE BUTTON

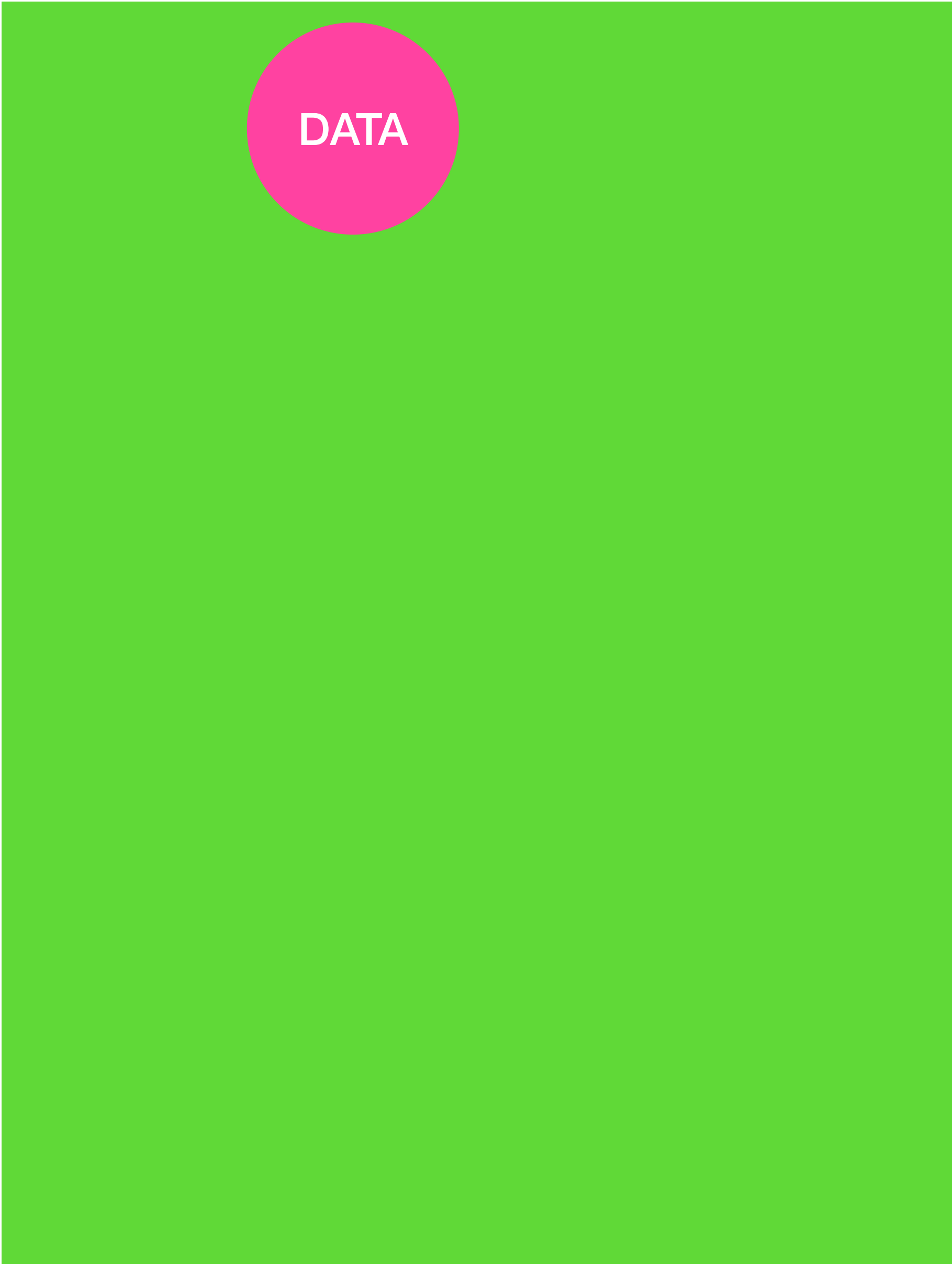


DEMO For today

INPUT FIELD

SAVE BUTTON

State

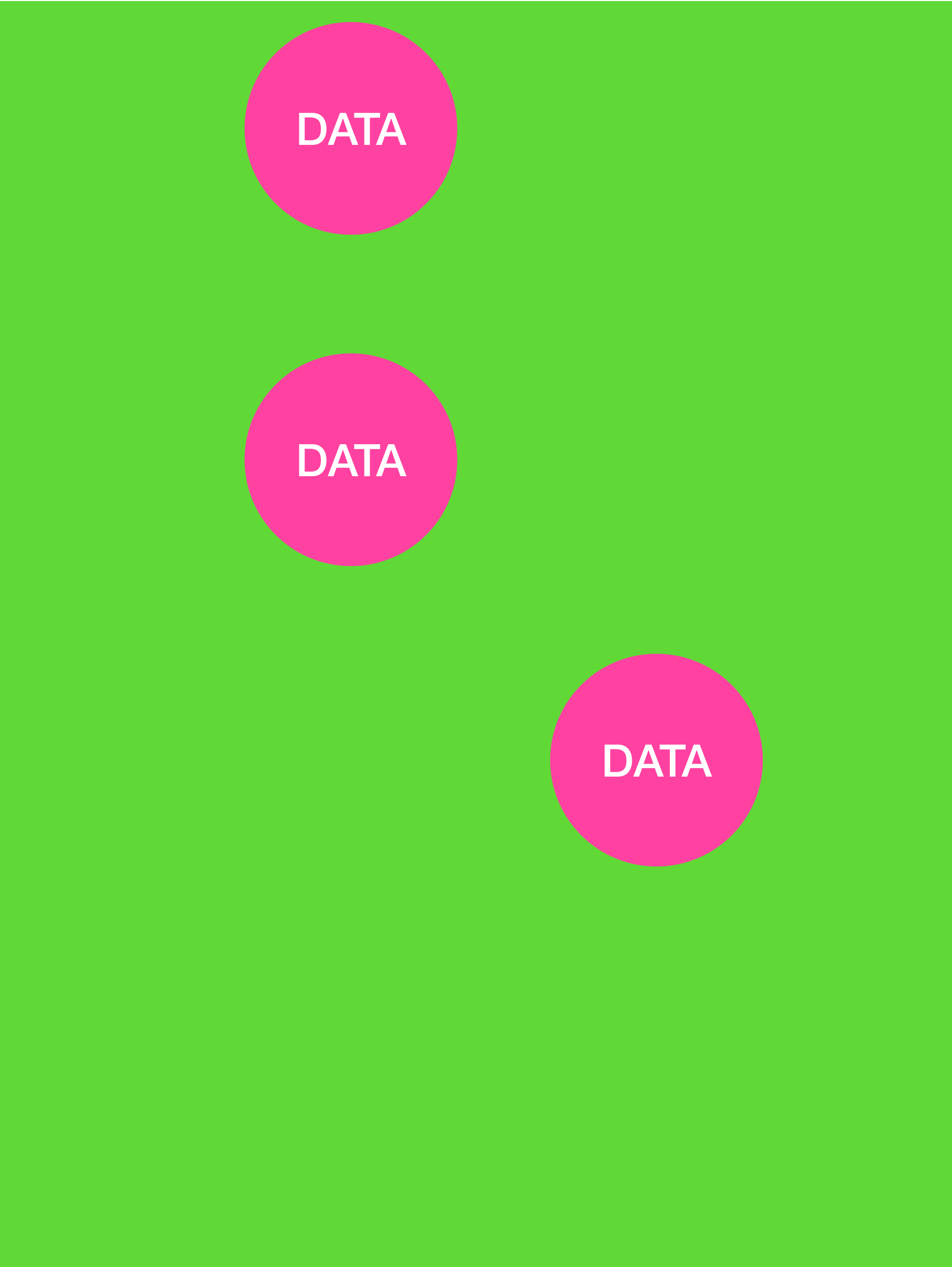


DEMO For today

INPUT FIELD

SAVE BUTTON

State



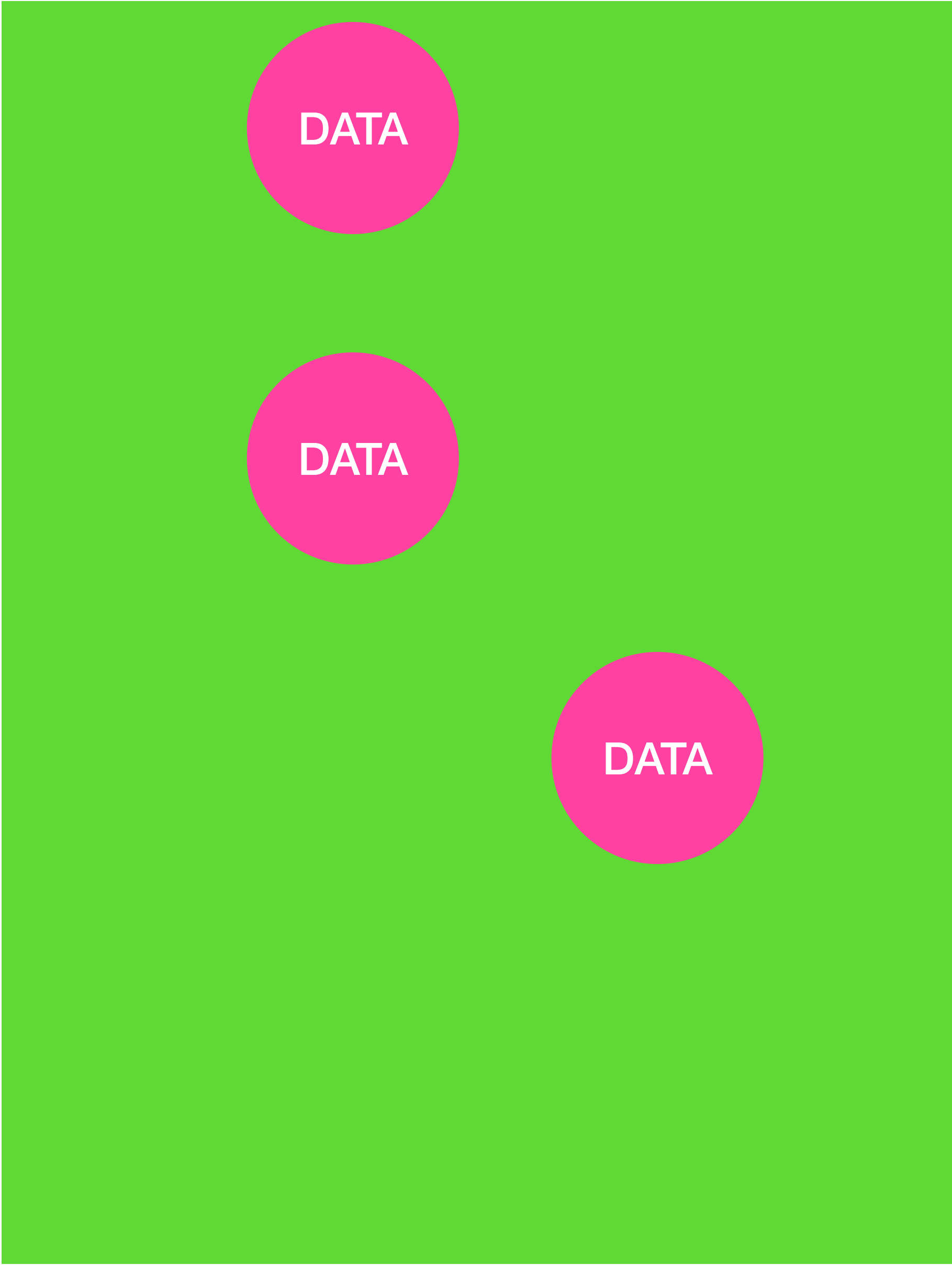
DEMO For today

INPUT FIELD

SAVE BUTTON

REMINDER ROW COMPONENT	DATA	DEL
REMINDER ROW COMPONENT	DATA	DEL
REMINDER ROW COMPONENT	DATA	DEL

State



DEMO For today

INPUT FIELD

SAVE BUTTON

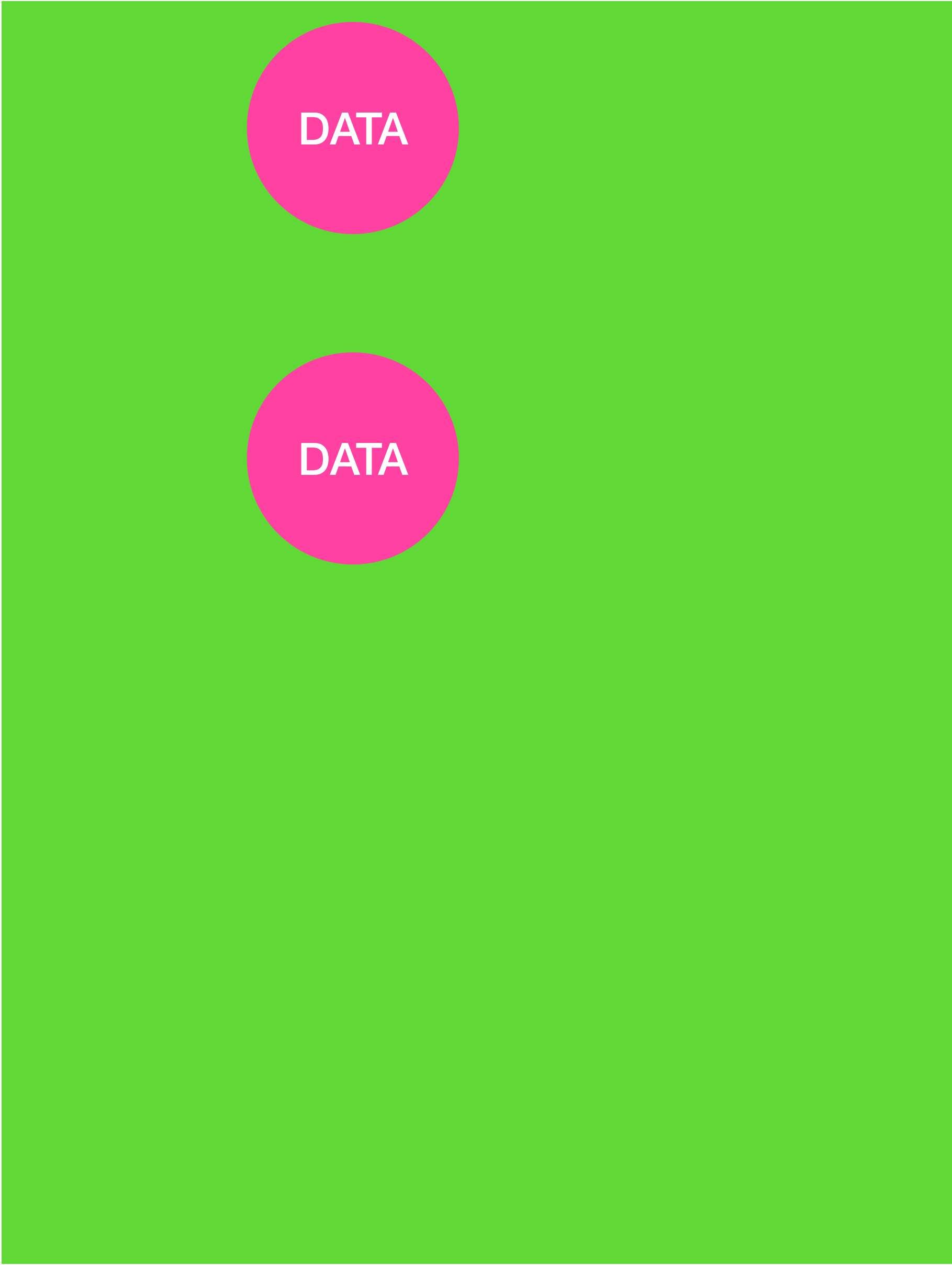
REMINDER ROW COMPONENT

DEL

REMINDER ROW COMPONENT

DEL

State



DEMO For today

INPUT FIELD

SAVE BUTTON

REMINDER ROW COMPONENT

DEL

REMINDER ROW COMPONENT

DEL

REMINDER ROW COMPONENT

DEL

State



Checkpoint

Questions?

DEMO For today

Flexbox

State

INPUT FIELD

SAVE BUTTON

REMINDER ROW COMPONENT

DEL

REMINDER ROW COMPONENT

DEL

REMINDER ROW COMPONENT

DEL



<div>

<input>

.className{

background-colour:red

}

<input/>

<button

.className{

.align: center

}

<button/

<div/>

**className =
“mainContainer”**

DIV

DIV

DIV

```
.mainContainer{  
  display: flex;  
}
```

DIV

DIV

DIV

```
.className{
```

```
  display: flex;  
  flex-direction: row;
```

```
}
```


DIV

DIV

DIV

```
.className{
```

```
display: flex;  
flex-direction: row;
```

```
Justify-content:  
space-around;
```

```
}
```

DIV

DIV

DIV

```
.className{
```

```
display: flex;  
flex-direction: row;
```

```
Justify-content:  
space-around;
```

```
Align-content:  
Centre  
}
```

Checkpoint

Questions?

DEMO For today

<div> Flex-direction : column

<div> Flex-direction : row

INPUT FIELD

SAVE BUTTON

</div>

<div> Flex-direction : column

REMINDER ROW COMPONENT

DEL

REMINDER ROW COMPONENT

DEL

REMINDER ROW COMPONENT

DEL

</div>

</div>

DEMO For today

<div> Flex-direction : column

<div> Flex-direction : row

<input/>

<button/>

</div>

<div> Flex-direction : column

REMINDER ROW COMPONENT

DEL

REMINDER ROW COMPONENT

DEL

REMINDER ROW COMPONENT

DEL

</div>

</div>

DEMO For today

<div> Flex-direction : column

<div> Flex-direction : row

<input/>

<button/>

</div>

<div> Flex-direction : column

<div> Flex-direction : row

DEL

<div> </div>

<button/>

DEL

</div>

DEL

</div>

</div>

Checkpoint

Questions?

DEMO For today

```
<div> Flex-direction : column
  <div> Flex-direction : row
    <input/>
    <button/>
  </div>
  <div> Flex-direction : column
    <div> Flex-direction : row
      <div> </div>
      <button/>
    </div>
  </div>
</div>
```

State

```
inputValue=""

todoList = [
  {
    Id: UNIQUE
    ID,
    Content:
    "lorem
    ipsum"
  }
]
```


DEMO For today

```
<div> Flex-direction : column
  <div> Flex-direction : row
    <input/>
    <button/>
  </div>
  <div> Flex-direction : column
    {
      todoList.forEach(x=>
        <div>
          <div> {x.content} </div>
          <button> Delete </button>
        </div>
      )
    }
  </div>
</div>
```

State

```
inputValue=""

todoList = [
  {
    Id: UNIQUE
    ID,
    Content:
    "lorem
    ipsum"
  }
]
```

Checkpoint

Questions?

DEMO For today

```
inputValue=""

todoList = [
  {
    Id: UNIQUE
    ID,
    Content:
    "lorem
    ipsum"
  }
]
```

Initialise state

```
[ inputValue, setInputValue ] = useState( "" )
```

```
[ todoList, setTodoList ] = useState( [ ] )
```

DEMO For today

```
inputValue=""
```

```
todoList = [ ]
```

Initialise state

```
[ inputValue, setInputValue ] = useState( "" )
```

```
[ todoList, setTodoList ] = useState( [ ] )
```

Checkpoint

Questions?

DEMO For today

```
<div> Flex-direction : column  onClick={saveWhatIType}
  <div> Flex-direction : row
    <input/ >
    <button/ >
  </div>
  onChange={displayWhatIType}
  <div> Flex-direction : column
    {
      todoList.forEach(x=>
        <div>
          <div> {x.content} </div>
          <button> Delete </button>
        </div>
        onClick={deleteThisTodo}
      )
    }
  </div>
</div>
```

State

```
inputValue=""

todoList = [
  {
    Id: UNIQUE
    ID,
    Content:
    "lorem
    ipsum"
  }
]
```

DEMO For today

```
[ inputValue, setInputValue ] = useState( "" )
```

```
[ todoList, setTodoList ] = useState( [ ] )
```

```
onChange={displayWhatIType}
```

```
onClick={saveWhatIType}
```

```
onClick={deleteThisTodo}
```

DEMO For today

`onChange={displayWhatIType} setInputValue`

`onClick={saveWhatIType} setTodoList`

`onClick={deleteThisTodo}`

DEMO For today

onChange={displayWhatIType}

```
Const displayWhatIType = ( e ) => {  
  setInputValue( e.target.value )  
}
```

onClick={saveWhatIType}

onClick={deleteThisTodo}

DEMO For today

onClick={saveWhatIType}

```
Const saveWhatIType = () => {
```

```
  Let newContent = {
```

```
    Id: math.random.toString().replace("0.", ""),
```

```
    Content: inputValue.trim()
```

```
  }
```

```
  Let copy = [...todoList]
```

```
  copy.push( newContent )
```

```
  setTodoList( copy )
```

```
  setInputValue( "" )
```

```
}
```

onChange={displayWhatIType}

onClick={deleteThisTodo}

DEMO For today

onClick={deleteThisTodo}

```
Const deleteThisTodo = (id) => {  
  setTodoList(  
    todoList.filter( item => item.id !== id )  
  )  
}
```

onClick={saveWhatIType}

onChange={displayWhatIType}

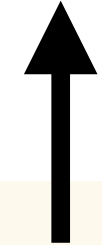
DEMO For today

<div> Flex-direction : column onClick={saveWhatIType}

<div> Flex-direction : row

<input/>>

<button/>>



onChange={displayWhatIType}

</div>
<div> Flex-direction : column
{

todoList.forEach(x=>

<div>

<div> {x.content} </div>

<button> Delete </button>

</div>

) onClick={ ()=>deleteThisTodo(id) }

}

</div>

</div>

State

inputValue=""

```
todoList = [
  {
    Id: UNIQUE
    ID,
    Content:
    "lorem
    ipsum"
  }
]
```

Checkpoint

Questions?

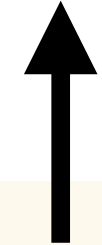
DEMO For today

<div> Flex-direction : column onClick={saveWhatIType}

<div> Flex-direction : row

<input/>>

<button/>>



onChange={displayWhatIType}

</div>
<div> Flex-direction : column
{

todoList.forEach(x=>

<div>

<div> {x.content} </div>

<button> Delete </button>

</div>

) onClick={ ()=>deleteThisTodo(id) }

}

</div>

</div>


State

inputValue=""

```
todoList = [
  {
    Id: UNIQUE
    ID,
    Content:
    "lorem
    ipsum"
  }
]
```

DEMO For today

```
<div> Flex-direction : column
{
  todoList.forEach(x=>
    <div>
      <div> {x.content} </div>
      <button> Delete </button>
    </div>
    ) onClick={ ()=>deleteThisTodo(id) }
  }
</div>
```



DEMO For today

```
<div>Flex-direction : column
{
  todoList.forEach(x=>
    <TodoRow/>
  )
}
</div>
```


DEMO For today

```
<div>Flex-direction : column
{
  todoList.forEach(x=>
    <TodoRow data={x} deleteThisTodoProp={deleteThisTodo} />
  )
}
</div>
```

```
Const TodoRow = (props) =>{
  Let { data , deleteThisTodoProp } = props
  <div>
    <div> {data.content} </div>
    <button> Delete </button>
  </div>
  }
  onClick={ ()=>deleteThisTodoProp(data.id) }
```

Checkpoint

Let's code everything out

Things to explore

REACT

React lifecycles

React Browser Router

Class based components

Redux / React context

Component libraries

- antd

MOBILE

React Native with expo

BACKEND

NodeJS Express

- API

- Middleware

- Managing sessions

- Account system

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