REACT

#1 - Indecision APP

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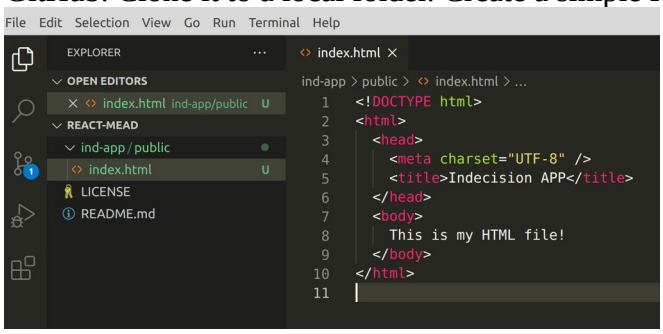
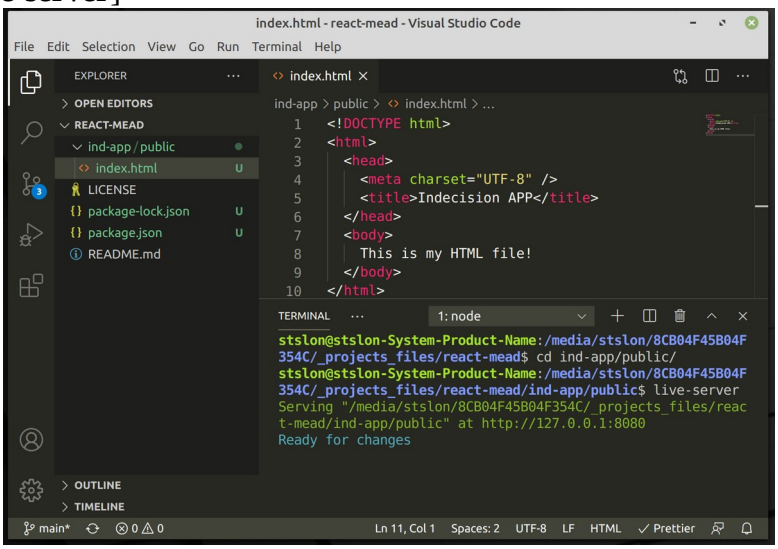
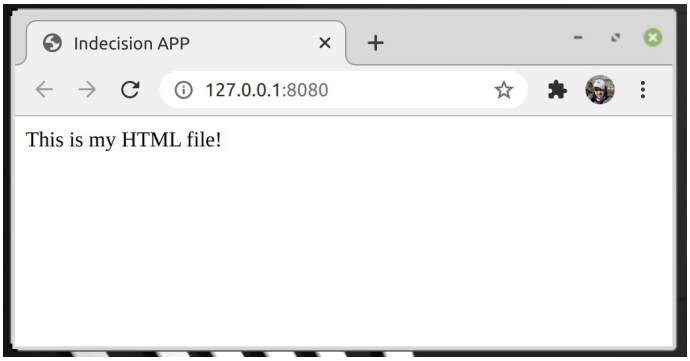
3 Start with REACT
3.1 Basic setup (before REACT) - 007

Create a new repository on GitHub. Clone it to a local folder. Create a simple HTML file.



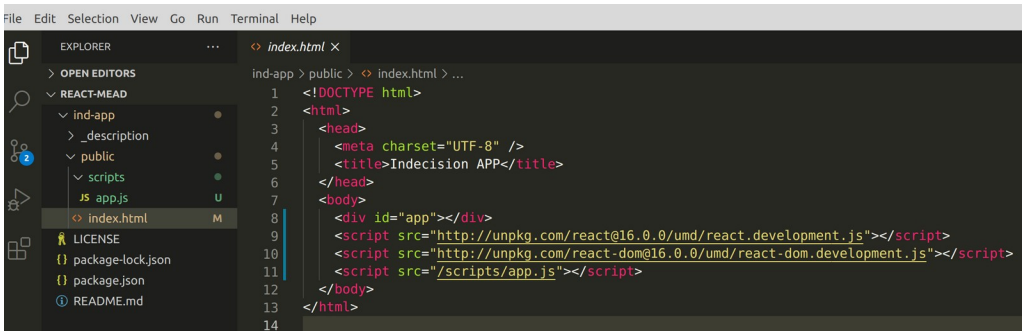
Npm init [CLI=> **npm init -y**]
Install live server [CLI=> **sudo npm install -g live-server**]
Go to a folder ind-app/public [CLI=> **cd ind-app/public**]
Start a server [CLI=> **live-server**]



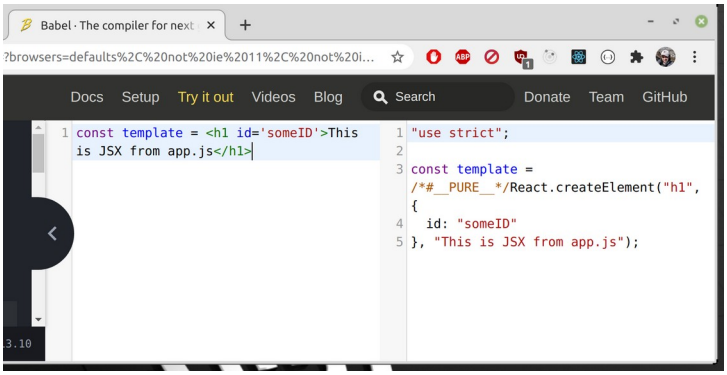


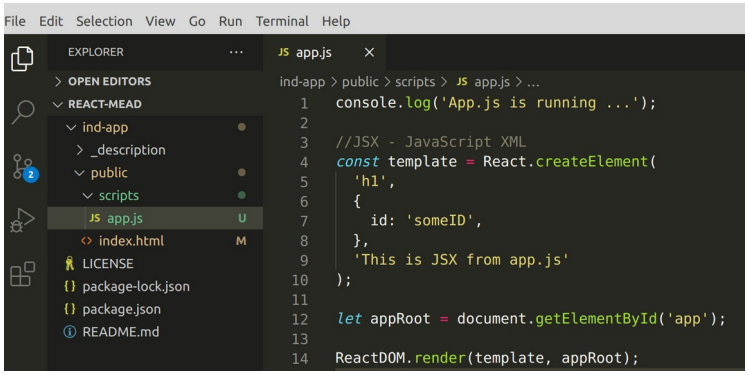
3.2 Create a React APP (scripts) - 008

Add div ‘app’ and 3 scripts to index.html and create **public/scripts/app.js**



JSX is a JavaScript XML. BABEL is a JavaScript compiler (it converts modern simple ES6 or ES7 to ES5)





3.3 Using BABEL to compile JSX to ES5 - 009

Install babel v.6.24.1 [CLI=> **npm i -g babel-cli@6.24.1**]

Install babel-preset-react v.6.24.1 and babel-preset-env v.1.5.2 [CLI=> **sudo npm i bable-preset-react@6.24.1 babel-preset-env@1.5.2**]

Now we are able to use JSX.

Create a file **src/app.js** with JSX

app.js

ind-app > src > app.js > ...

```
1   console.log('App.js is running ...');
2
3   //JSX - JavaScript XML
4   const template = (
5     <div>
6       <h1>Welcome to Indecision APP</h1>
7       <p>There is my test project for REACT course by Andrew Mead</p>
8       <ol>
9         <li>Item #1</li>
10        <li>Item #2</li>
11        <li>Item #3</li>
12        <li>Item #4</li>
13        <li>Item #5</li>
14      </ol>
15    </div>
16  );
17
18  let appRoot = document.getElementById('app');
19
20  ReactDOM.render(template, appRoot);
```

USE BABEL with CLI: [CLI=> **babel src/app.js --out-file=public/scripts/app.js –presets=env,react --watch**]

This command will create **public/scripts/app.js** with ES5 syntax of **src/app.js** and will track all the changes on **src/app.js** and immediately change **public/scripts/app.js**

app.js

ind-app > public > scripts > app.js > ...

```
1   'use strict';
2   console.log('App.js is running ...');
3   //JSX - JavaScript XML
4   var template = React.createElement('div', null,
5
6     React.createElement('h1', null,'Welcome to Indecision APP'),
7     React.createElement('p', null, 'There is my test project for REACT course by Andrew Mead'),
8
9     React.createElement('ol', null,
10      React.createElement('li', null, 'Item #1'),
11      React.createElement('li', null, 'Item #2'),
12      React.createElement('li', null, 'Item #3'),
13      React.createElement('li', null, 'Item #4'),
14      React.createElement('li', null, 'Item #5')
15    )
16  );
17
18  var appRoot = document.getElementById('app');
19
20  ReactDOM.render(template, appRoot);
```

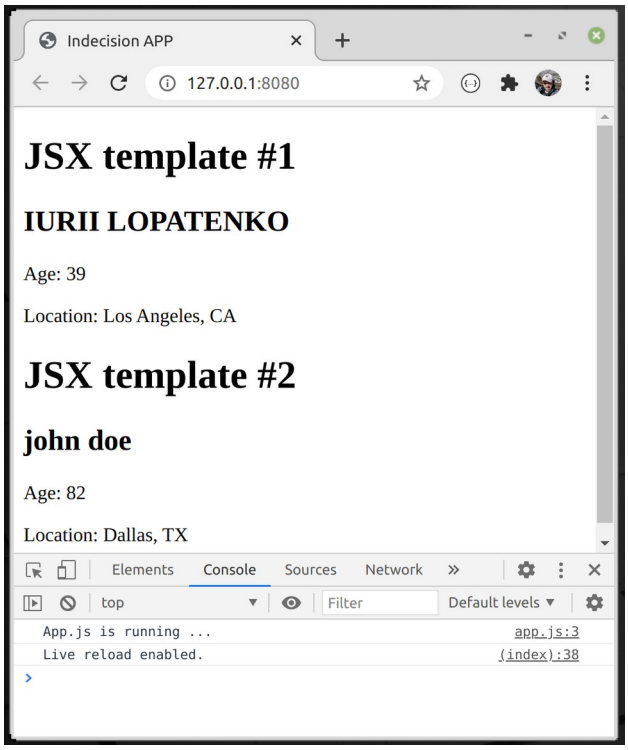
3.4 Exploring JSX - 010

Install VSCode extension BABEL ES6/ES7.
We have to pass to a RENDER all the information in **1 root tag**.

3.5 JS expressions inside JSX - 011

app.js

```
ind-app > src > app.js > ...
1   console.log('App.js is running ...');
2
3   //JSX - JavaScript XML
4
5   let userName = 'Iurii Lopatenko';
6   let userAge = 34;
7   let userLocation = 'Los Angeles, CA';
8
9   let user = {
10    name: 'John Doe',
11    age: 41,
12    location: 'Dallas, TX',
13  };
14  const templateTwo = (
15    <div>
16      <h1>JSX template #1</h1>
17      <h2>{userName.toUpperCase()}</h2>
18      <p>Age: {userAge + 5}</p>
19      <p>Location: {userLocation}</p>
20
21      <h1>JSX template #2</h1>
22      <h2>{user.name.toLowerCase()}</h2>
23      <p>Age: {user.age * 2}</p>
24      <p>Location: {user.location}</p>
25    </div>
26  );
27
28  let appRoot = document.getElementById('app');
29
30  ReactDOM.render(templateTwo, appRoot);
31
```



3.5 Conditional Rendering in JSX – 012

app.js

```
ind-app > src > app.js > ...
1   //JSX - JavaScript XML
2   //012 - THEORY
3   let user = {
4     name: 'Iurii Lopatenko',
5     age: 34,
6     location: 'Los Angeles, CA, USA',
7   };
8
9   //Ternary operator
10  const getLocation = user.location ? (
11    <p>Location: {user.location}</p>
12  ) : undefined;
13
14  //IF
15  const checkUserName = (nameToCheck) => {
16    if (nameToCheck) {
17      return nameToCheck;
18    } else {
19      return 'ANONYMOUS';
20    }
21  };
22
23  const templateTheory = (
24    <div>
25      <h1>JSX template</h1>
26      <h2>{checkUserName(user.name)}</h2>
27      {/*Logical compare*/}
28      {user.age && user.age >= 18 && <p>Age: {user.age}</p>}
29      {getLocation}
30    </div>
31  );
```

app.js

```
ind-app > src > app.js > ...
33  //012 PRACTICE
34  const app = {
35    title: 'Indecision App',
36    subtitle: 'There is something subtitle for an APP ...',
37    options: ['One', 'Two', 'Three'],
38  };
39
40  let templatePractice = (
41    <div>
42      <h1>{app.title}</h1>
43      {app.subtitle && <p>{app.subtitle}</p>}
44      {app.options.length > 0 ? 'Here are your options:' : 'No any options'}
45      {app.options.map((element, index) => (
46        <p key={index}>
47          Option #{index + 1} is: {element}
48        </p>
49      ))}
50    </div>
51  );
52  let appRoot = document.getElementById('app');
53  ReactDOM.render(templatePractice, appRoot);
54
```

3.6 ES6 aside: var vs const and let - 013

3.6.1 Declaring a variable

```
JS es6-let-const.js ×
ind-app > src > playground > JS es6-let-const.js > ...
1   var nameVar = 'Iurii';
2   console.log('variable nameVar is: ', nameVar);
3   var nameVar = 'Mike';
4   console.log('variable nameVar is: ', nameVar);
5   nameVar = 'John';
6   console.log('variable nameVar is: ', nameVar);
```

```
Elements  Console  Sources  Net
top  Filter
variable nameVar is:  Iurii
variable nameVar is:  Mike
variable nameVar is:  John
```

LET: we are **not able** to declare the same variable more than 1 time. We **can** declare a variable without any value: let variable; variable = 10;

```
7
8   let nameLet = 'Iurii';
9   console.log('variable nameLet is: ', nameLet);
10  let nameLet = 'Mike';
11  console.log('variable nameLet is: ', nameLet);
12
```

```
TypeError: src/playground/es6-let-const.js: Duplicate declaration "nameLet"
   8 | let nameLet = 'Iurii';
   9 | console.log('variable nameLet is: ', nameLet);
> 10 | let nameLet = 'Mike';
     |     ^
  11 | console.log('variable nameLet is: ', nameLet);
```

CONST: we are **not able** to declare the same variable more than 1 time or change this variable. We **can not** declare a variable without any value: const variable; variable = 10;

```
17  //CONST
18  console.log('CONST');
19  const nameConst = 'Iurii';
20  console.log('variable nameConst is: ', nameConst);
21  nameConst = 'Frank';
22  console.log('variable nameConst is: ', nameConst);
23  const nameConst = 'Mike';
24
```

```
SyntaxError: src/playground/es6-let-const.js: "nameConst" is read-only
  19 | const nameConst = 'Iurii';
  20 | console.log('variable nameConst is: ', nameConst);
> 21 | nameConst = 'Frank';
     | ^
  22 | console.log('variable nameConst is: ', nameConst);
  23 |
change src/playground/es6-let-const.js
TypeError: src/playground/es6-let-const.js: Duplicate declaration "nameConst"
  21 | nameConst = 'Frank';
  22 | console.log('variable nameConst is: ', nameConst);
> 23 | const nameConst = 'Mike';
     |       ^
```

3.6.2 Block and function scoping

```
25  //FUNCTION SCOPING
26  let functionLet = () => {
27    let justName = 'Mike';
28    return justName;
29  };
30  console.log(functionLet());
31  //console.log(justName); // justName is not defined
32
33  //BLOCK SCOPING
34  {
35    let variable = 'some text';
36  }
37  console.log(variable); //variable is not defined
```