

ÚVOD DO ECMASCRIPT 6

Juraj Kubala

@: juraj.alabuk@gmail.com

**KTO JE TO TEN
EKMASKRIPT?**

- špecifikácia jazyka
- release jún 2015
- ES6 = ES2015 = ECMAScript 6 = ECMAScript 2015
- spätná kompatibilita s ES5
- riešenia pre modulárne aplikácie
- množstvo nových features

FEATURES

- Arrow function
- Classes
- Modules
- Block scope
- Default params
- Rest params
- Spread operator
- Destructiong
- Promise
- Map
- Set
- ...

LET

```
var foo = "foo";

if(true){
  var foo = "kvak";
  console.log(foo);
}
console.log(foo);
```

```
> kvak
> kvak
```

ES5 má iba function scope

```
let foo = "foo";

if(true){
  let foo = "kvak";
  console.log(foo);
}
console.log(foo);
```

```
> kvak
> foo
```

Pri použití let sa vytvára block scope

CONST

```
const PI = 3.1415
```

- **immutable hodnota**
- **NIE immutable object !!!**

```
const PI = 3.14;  
PI = 19; // Error !  
const PI = 19; // Error !
```

```
const obj = {};  
obj = {"foo": 1}; // Error !a  
obj.foo = 1; // OK
```

ARROW FUNCTION

```
// ES5
var spocitaj = function(a, b) {
  return a + b;
}

// ES6 arrow function
let spocitaj = (a, b) => {
  return a + b;
}

let spocitaj = (a, b) => a + b;

let parne = [1,2,3,4].filter(x => x % 2 === 0);

let dvojnasobky = [1,2,3,4].map(x => x*2);
```


ARROW HELL !!

```
const injectMiddleware = deps => ({ dispatch, getState }) => next => action =>  
  next(typeof action === "function"  
    ? action({ ...deps, dispatch, getState })  
    : action  
  );
```

ARROW FUNCTION

```
var jozef = {  
  
  name: "Jozef",  
  
  sayHello: function(){  
  
    var self = this;  
  
    setTimeout(function(){  
      console.log("Hi "+self.name)  
    },1000);  
  }  
}  
  
jozef.sayHello(); // Hi Jozef
```

```
var jozef = {  
  
  name: "Jozef",  
  
  sayHello: function(){  
  
    setTimeout(() => {  
      console.log("Hi "+this.name)  
    },1000);  
  }  
}  
  
jozef.sayHello(); // Hi Jozef
```

TEMPLATE STRING

```
let name = "Juraj";  
  
//old school  
console.log("Hello, I'm " + name + ".");  
  
//ES6  
console.log(`Hello, I'm ${name}.`);
```

"TRIEDY" V ES5

```
function Person(name) {  
    this.name = name;  
}  
  
Person.prototype.greet = function() {  
    console.log("Hello world, I'm " + this.name);  
}  
  
var fero = new Person("Fero");  
fero.greet();  
  
> Hello world, I'm Fero
```

DEDENIE V ES5 1/2

```
var extend = function ( defaults, options ) {  
    var extended = {};  
    var prop;  
    for (prop in defaults) {  
        if (Object.prototype.hasOwnProperty.call(defaults, prop)) {  
            extended[prop] = defaults[prop];  
        }  
    }  
    for (prop in options) {  
        if (Object.prototype.hasOwnProperty.call(options, prop)) {  
            extended[prop] = options[prop];  
        }  
    }  
    return extended;  
};
```

DEDENIE V ES5 2/2

```
function Programmer(name, lang) {  
    Person.call(this, name);  
    this.lang = lang;  
}  
  
extend(Programmer, Person);
```

TRIEDY V ES6

```
class Person {  
  constructor(name) {  
    this.name = name;  
  }  
  
  greet() {  
    console.log(`Hello world, I'm ${this.name}`)  
  }  
  
  static foo() {  
  }  
}
```

```
Person.foo();
```

```
let Fero = new Person("Fero");  
fero.greet();
```

```
> Hello world, I'm Fero
```

TRIEDY V ES6

```
class Programmer extends Person {  
  constructor(name, lang) {  
    super(name);  
    this.lang = lang;  
  }  
  
  greet() {  
    super.greet();  
    console.log(`I know ${this.lang}`);  
  }  
}  
  
let Fero = new Programmer("Fero", "Javascript");  
fero.greet();  
  
> Hello world, I'm Fero  
> I know Javascript
```


GETTERS/SETTERS

```
class Config {  
  
    get version(){  
        return this._version  
    }  
  
    set version(version){  
        this._version = version;  
    }  
  
}  
  
let config = new Config();  
config.version = 19;  
console.log(config.version); // 19
```

MODULES

```
// lib/math.js
export function sum (x, y) { return x + y }
export const pi = 3.141593

// app1.js
import * as math from "lib/math"
console.log("2π = " + math.sum(math.pi, math.pi))

// app2.js
import { sum, pi } from "lib/math"
console.log("2π = " + sum(pi, pi))
```

MODULES 2.

```
// lib/myLib.js
export default class MySuperLongNameClass{
  ...
}
```

```
// app1.js
import ShortName from "lib/myLib"

let myClass = new ShortName();
```

DEFAULT PARAMS 1.

```
function add(a, b){  
  a = a || 1;  
  b = b || 2;  
  return a + b;  
}
```

```
add();  
add(0, 1);
```

```
> 3
```

```
> 2
```

DEFAULT PARAMS 2.

```
function add(a, b){  
  if(typeof a === "undefined"){  
    a = 1;  
  }  
  if(typeof b === "undefined"){  
    b = 2;  
  }  
  return a + b;  
}
```

```
add();  
add(0, 1);
```

```
> 3
```

```
> 1
```

DEFAULT PARAMS 3.

```
function add(a = 1, b = 2){  
    return a + b;  
}
```

```
add();  
add(0, 1);
```

```
> 3
```

```
> 1
```

DESTRUCTURING

```
let car = {  
  color: "black",  
  type: "SUV",  
  price: 16599  
};
```

```
let color = car.color;  
let type = car.type;  
let price = car.price;
```

```
console.log(`${color} ${type}, price: ${price}`);  
//black SUV, price: 16599
```

```
let car = {  
  color: "black",  
  type: "SUV",  
  price: 16599  
};
```

```
let {color, type, price} = car;
```

```
console.log(`${color} ${type}, price: ${price}`);  
//black SUV, price: 16599
```

PROMISE

```
function ajaxCall (params) {  
  return new Promise((resolve, reject) => {  
    // make call ...  
    if(error){  
      reject(error);  
    }else{  
      resolve(result);  
    }  
  })  
}  
  
ajaxCall({ /* params */ }).then((result) => {  
  console.log('Mame radost Vincente');  
}).catch((error) => {  
  console.log('Mame error Vincente');  
})
```


PROMISE 2.

```
Promise.all([
  ajaxCall({/* params_1 */}),
  ajaxCall({/* params_2 */}),
  ajaxCall({/* params_3 */})
]).then(results => {
  console.log(result[0])
  console.log(result[1])
  console.log(result[2])
})
```

PEKNÉ VŠAK?

RIEŠNIE?

**TRANSPILOVAŤ, KOMPILOVAŤ,
BUNDLOVAŤ, ...**

- **webpack** - bundlovací nástroj
- **babel** - transpiler - prekladá ES6 do ES5
- **npm** - node package manager

NPM - NODE PACKAGE MANAGER

- správca závislostí
- konfigurácia cez **package.json**
- **npmjs.com**
- knižnice sa sťahujú do **node_modules**

```
npm init
npm install
npm install package_name [--save] [--save-dev] [-g]
npm update
```

NPM - NODE PACKAGE MANAGER

```
{  
  "name": "appname",  
  "version": "1.0.0",  
  "description": "Popis",  
  "main": "index.js",  
  "dependencies": {  
    "react": "^0.14.3",  
    "react-dom": "^0.14.3",  
    ...  
  },  
  "devDependencies": {  
    ...  
  }  
}
```


NPM.I.ETECH.SK

- projekt **rslib/js_components**

```
npm set registry http://npm.i.etch.sk
```

```
//package.json
{
  "name": "rs-widget-questionnaire",
  "version": "1.2.7",
  ...
}

-- zmena kodu

"version": "1.2.8" -- povysenie verzie balicka

commit + push origin master

npm update
```

WEBPACK

- bundlovací nástroj
- konfigurácia cez **webpack.config.js**

```
npm install webpack -g
```

```
webpack [--watch] [--progress]
```

WEBPACK.CONFIG.JS

```
var ExtractTextPlugin = require("extract-text-webpack-plugin");

var plugins = [
  new ExtractTextPlugin("bundle.css", {allChunks: true})
]

module.exports = {
  entry: './assets/compose.js',
  output: {
    filename: 'bundle.js',
    path: './assets/build/'
  },
  module: {
    loaders: [
      { test: /\.jsx?$/, loader: 'babel?presets[]=react&presets[]=es2015&compact=false' },
      { test: /\.styl$/, loader: ExtractTextPlugin.extract("stylus", "css-loader?sourceMap!stylus") },
      { test: /\.less$/, loader: ExtractTextPlugin.extract("less-loader", "css-loader?sourceMap!less") },
      { test: /\.css$/, loader: ExtractTextPlugin.extract("css-loader", "css-loader?sourceMap") },
      { test: /\.(gif|jpg|png|woff|woff2|eot|ttf|svg)$/, loader: 'url-loader?limit=500' }
    ]
  },
  devtool: "#inline-source-map",
  plugins: plugins
};
```

IMPORT ŠTÝLOV

```
import './style/base.css';  
import './style/style_1.less';  
import './style/style_2.styl';
```

```
...
```

ENTRY POINT

```
import 'rs-tracker';  
...  
  
import 'rs-css-base';  
import 'rs-css-base-layout';  
...  
  
import MojaApp from './assets/js/MojaApp.js';  
  
window.Projekt = window.Projekt || {};  
window.Projekt.MojaApp = MojaApp;  
  
//HTML  
<script>  
  var app = new MojaApp();  
</script>
```

ĎAKUJEM ZA POZORNOST

:)

<React />

Juraj Kubala

@: juraj.alabuk@gmail.com

- nie framework, just "**V**" in MVC
- lib na vytvaranie UI
- veľký hráči - FB, New York Times, Instagram, ...
- **Virtual DOM**

VŠETKO JE KOMPONENTA

```
import React from "react";

export default class MojaKomponenta extends React.Component {

  render() {
    return (
      <h1>Ahoj, ja som react komponenta</h1>
    );
  }

}
```

WTF ?

```
return (  
  <h1>Ahoj, ja som react komponenta</h1>  
);
```

JSX = JS + XML

- class => **className**
- for => **htmlFor**
- **<Komponenta></Komponenta>**
- **<div></div>**

VSTUPNÝ BOD

```
<div id="react-view"></div>
```

```
import React from 'react';  
import ReactDOM from 'react-dom';  
import MojaKomponenta from './src/MojaKomponenta.js';
```

```
ReactDOM.render(  
  <MojaKomponenta />,  
  document.getElementById('react-view')  
);
```

```
import React from "react";

export default class MojaKomponenta extends React.Component {

  render() {
    return (
      <h1>Ahoj, ja som react komponenta</h1>
    );
  }

}
```

Props

```
export default class MojaKomponenta extends React.Component {  
  
  render() {  
    return (  
      <h1>Ahoj, ja som {this.props.name}</h1>  
    );  
  }  
  
}
```



```
<MojaKomponenta name="Fero" />
```

State

```
export default class Counter extends React.Component {  
  constructor(){  
    super(arguments);           //parent constructor  
    this.state = { count: 0 };   //initial state  
    this.onClick = this.onClick.bind(this);  
  }  
  
  onClick() {  
    this.setState({count: this.state.count + 1}) // set a new state  
  }  
  
  render() {  
    return (  
      <h1 onClick={this.onClick}> {/* call onClick function */}  
        Pocet klikov je {this.state.count} {/* state value */}  
      </h1>  
    );  
  }  
}
```

LIFECYCLE METHODS

- > Initial render
- > Props changed
- > State changed
- > Component unmount

Initial render

```
export default class Counter extends React.Component {  
  
  componentWillMount() {  
    // zavola sa iba raz, pred prvym renderom komponenty  
  }  
  
  render() {  
    // renderovanie komponenty  
  }  
  
  componentDidMount() {  
    // zavola sa iba raz, po prvom renderi komponenty  
  }  
  
}
```


Props changed

```
export default class Counter extends React.Component {  
  
  componentWillReceiveProps(nextProps) {  
  }  
  
  shouldComponentUpdate(nextProps, nextState) {  
    return true / false;  
  }  
  
  componentWillUpdate(nextProps, nextState) {  
  }  
  
  render() {  
  }  
  
  componentDidUpdate(prevProps, prevState) {  
  }  
}
```

State changed

```
export default class Counter extends React.Component {  
  
  shouldComponentUpdate(nextProps, nextState) {  
    return true / false;  
  }  
  
  componentWillUpdate(nextProps, nextState) {  
  }  
  
  render() {  
  }  
  
  componentDidUpdate(prevProps, prevState) {  
  }  
}
```

Component unmount

```
export default class Counter extends React.Component {  
  
  componentDidWillUnmount() {  
    // cistenie  
  }  
}
```

Príklad

Afghánistán
Albánie
Alžírsko
Andorra
Angola
Antigua a Barbuda
Argentina

```
import React from "react";

export default class List extends React.Component {

  render() {

    const items = this.props.items.map((item, i) => {
      return (<li key={i}>{item}</li>);
    })

    return (
      <ul>
        {items}
      </ul>
    );
  }

}
```

```
import './css.css';
import React from "react";
import List from "./List.js";

export default class FilteredList extends React.Component {
  constructor() {
    super(arguments);
    this.state = {
      items: [ ... ],
      filter: ''
    };
  }

  filter(event) {
    this.setState({filter: event.target.value.toLowerCase()});
  }

  render() {
    const items = this.state.items.filter((item) => {
      return item.toLowerCase().search(
        this.state.filter
      ) !== -1;
    });

    return (
      <div className="filter-list">
        <input type="text" onChange={this.filter.bind(this)}/>
        <List items={items}/>
      </div>
    );
  }
}
```

Afghánistán
Albánie
Alžírsko
Andorra
Angola
Antigua a Barbuda
Argentina
Arménie
Austrálie
Ázerbajdžán
Bahamy

ĎAKUJEM ZA POZORNOST 2.0

:)