

## Some actual software tools suitable for IT education

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### Abstract.

IT is an industry where new knowledge comes with very high velocity. So, there is a need of fast update of IT education programs in schools and universities. Here we present some relatively new software tools which may be used in IT education.

**Keywords:** IT, education, Postman, Type Script.

### Introduction

IT is an industry where new knowledge comes with very high velocity. So, there is a need of fast update of education programs in schools and universities. Here we present some relatively new software tools which may be used in IT education.

### Postman

Postman is a full-featured platform for API development and testing (Postman, 2022).

Useful feature when working with Postman is the possibility to create collections of API calls of HTTP protocol – saved Postman requests - which may be further divided into folders and subfolders.

Also, environments can be created combining different sets of variables.

When working with Postman, we may use Newman. Newman is a command line collection runner for Postman. It allows you to run and test a Postman collection directly from the command line. It is build with extensibility in mind so that you can easily integrate it with your continuous integration servers and build systems.

To run Newman, we must have Node.js installed on our machine with version greater than or equal to v10. If we have Node.js installed, we most likely have also NPM installed and we may install Newman using the construction:

```
$ npm install -g newman
```

This command installs Newman globally on your machine. In this way, you are able to run it from anywhere. If you have to install it locally, just remove the -g flag.

The Newman run command allows you to specify a collection to be run. The Postman collection must be exported as a json file from the Postman and after it can be run by Newman using the command

```
$ newman run examples/sample-collection.json.
```

Newman can be used within your Java Script projects as a Node.js module. The following example (Newman, 2022) runs a collection by reading a json collection stored on disk:

```
const newman=require('newman');//require newman
newman.run({
  collection: require ('./sample-collection.json'),
  reporters: 'cli'
}, function (err) {
  if (err) {throw err;}
  console.log('collection run complete!');
});
```

## Type script

Type Script (Type Script, 2022) is actually Java Script upgraded with a type system.

Introducing type system helps to catch errors during development. By using “type annotations” we can analyze our code. Type system is only active during development. It does not provide any performance optimization.

To create software with Type Script, we must write in Type Script (which is Java Script with type annotations) and use Typescript Compiler which helps to translate Type Script code to plain old Java Script.

To check if Type Script compiler is installed on our machine we write in console

```
tsc -helo
```

To install Type Script compiler we use

```
npm install -g typescript ts-node
```

A good code editor for Type Script is VSCode (2022).

Here is one example how code in Type Script is transformed to Java Script code (Type Script, 2022) :

```
Type Callback<T>=(element: T, index: number)=>void;
Const for Each=<T>(collection: T[], callback:Callback<T>)
  For (let i=0;i<collection.length;i++){
    Callback (collection[i],i);
  }
};
```

After translation by Type Script compiler, we obtain the following Java Script code (Type Script, 2022) :

```
var for Each=function(collection, callback){
  for(var i=0;i<collection.length;i++){
    callback(collection[i],i);
  }
};
```

Type Script has no effect on how our code gets executed by the browser or Node.

## Conclusion

To keep in pace with fast developing information technologies, people in this branch of economy need to learn very fast. Also, it is good the educational programs in schools and universities to be updated at frequent basis in order to include new software tools. As an example, two software tools suitable for inclusion in university educational programs of IT-oriented students were considered here: Postman and Type script.

## References

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