

## Learning NextJS. Getting Started

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https://dmpsy.club

NextJS >= ReactJS + NodeJS

## Target Audience

The NextJS adepts, wishing to follow modern trends in full-stack Web apps development

Magic formula:

NextJS > = ReactJS (front-end) + NodeJS (back-end)



1	Node.js Installation from Scratch
2	Node.js Upgrade
3	Creating a new NextJS project using a Vercel template
4	Exploring the project structure
5	Running the development server at <u>http://localhost:3000/</u>

#### NextJS official training:

https://nextjs.org/learn/dashboard-app/getting-started

## Node.js Initial Installation on Windows

1	Open <u>https://nodejs.org/en</u>	
2	Press	Download Node.js (LTS) 🕑
3	Run	<mark>2 node-v20.15.0-x64</mark>
4	Verify in PowerSt node -v npm -v	stallation from nell:

NB. IMHO, the easiest way of installation on Windows; but if you want to perform updates and switching between node versions, pls install fnm:

https://nodejs.org/en/download/package-manager

# Node.js Initial Installation on Linux

```
Install Node.js v20.15.0 (LTS) \vee on \Delta Linux
                                                          using
                                                                 👻 nym
# installs nvm (Node Version Manager)
curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/v0.39.7/install.sh | bash
# download and install Node.js (you may need to restart the terminal)
nvm install 20
# verifies the right Node.js version is in the environment
node -v # should print `v20.15.0`
# verifies the right NPM version is in the environment
```

```
npm -v # should print `10.7.0`
```

## Node.js Initial Installation on MacOS

Link: https://nodejs.org/en/download/package-manager

Install Node.js

v20.15.0 (LTS)  $\vee$  on O macOS

using 👌 nvm  $\sim$ 

 $\vee$ 

# installs nvm (Node Version Manager) curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/v0.39.7/install.sh | bash

# download and install Node.js (you may need to restart the terminal) nvm install 20

# verifies the right Node.js version is in the environment node -v # should print `v20.15.0`

# verifies the right NPM version is in the environment npm -v # should print `10.7.0`

## Updating Node.js on Windows

1	Install fnm (fast node manager):	winget install Schniz.fnm

PS C:\Users\makarenk.LAPTOP-HC000G4D> winget install Schniz.fnm Найдено Fast Node Manager [Schniz.fnm] Версия 1.37.1 Лицензия на это приложение предоставлена вам владельцем. Корпорация Майкрософт не несет ответственность за сторонние пакеты и не предоставляет для н Скачивание https://github.com/Schniz/fnm/releases/download/v1.37.1/fnm-windows.zip

3.04 MB / 3.04 MB

Хэш установщика успешно проверен Извлечение архива... Архив извлечен Запуск установки пакета... Переменная среды пути изменена; перезапустите оболочку, чтобы использовать новое значение. Добавлен псевдоним командной строки: "fnm" Успешно установлено

2 Restart PowerShell

## Updating Node.js on Windows (2)

3	Check available versions	fnm list-remote
4	Check the current node version	fnm list fnm current node -v npm -v
5	Download and install new version (20)	fnm useinstall-if-missing 20
6	Verify the update	node -v npm -v

#### Best Practice for Node.js Installation & Update

Using **fnm** is seemingly the best way of node installation and upgrade: <u>https://nodejs.org/en/download/package-manager</u>



#### Example of Node.js Installation on Linux with fnm

dmitry@dmitry-virtual-machine:~\$ fnm use --install-if-missing 20 Installing Node v20.15.0 (x64) 24.43 MiB/24.43 MiB (1.68 MiB/s, 0s) 00:00:14 Using Node v20.15.0 dmitry@dmitry-virtual-machine:~\$ fnm list \* v20.15.0 default \* system dmitry@dmitry-virtual-machine:~\$ fnm current v20.15.0 dmitry@dmitry-virtual-machine:~\$ node -v v19.5.0 dmitry@dmitry-virtual-machine:~\$ npm -v 9.3.1 dmitry@dmitry-virtual-machine:~\$

## Creating a NextJS Project Using a Template ("old school", use **npm**)

npx create-next-app@latest dmpsy-club --use-npm --example "https://github.com/vercel/nextlearn/tree/main/dashboard/starter-example"

cd dmpsy-club npm install npm run dev

create-next-app@latest # use the latest create-next-app tool version
dmpsy-club # name of the project and its folder
-use-npm # use the npm package manager
-example # apply a template from the repository specified (vercel repo contains lots
of examples, you may want to browse them later on)
cd dmpsy-club # change to the project folder
npm install # download the required modules to the node\_modules folder
npm run dev # launch the project on the dev server running on localhost:3000



## Creating a NextJS Project Using a Template (recommended option, use **pnpm**)

1	Install the pnpm package	npm install -g pnpm
	manager globally	

dmitry@dmitry-virtual-machine:/opt/NextJS\_Training\$ npm install -g pnpm

added 1 package in 5s

1 package is looking for funding run `npm fund` for details dmitry@dmitry-virtual-machine:/opt/NextJS\_Training\$

#### Creating the **nexxt-app** Project Using the Vercel Template (2)

2	Create the nexxt-app NextJS project	npx create-next-app@latest nexxt-appexample "https://github.com/vercel/next-learn/tree/main/dashbo ard/starter-example"use-pnpm

create-next-app@latest # use the latest create-next-app tool version nexxt-app # name of the project and its folder -use-pnpm # use the pnpm package manager -example # apply a template from the Vercel repository

#### Output of the **nexxt-app** Project Creation

dmitry@dmitry-virtual-machine:/opt/NextJS\_Training\$ npx create-next-app@latest
nexxt-app --example "https://github.com/vercel/next-learn/tree/main/dashboard/s
tarter-example" --use-pnpm
Need to install the following packages:
create-next-app@14.2.4
Ok to proceed? (y) y

Creating a new Next.js app in /opt/NextJS\_Training/nexxt-app.

Downloading files from repo https://github.com/vercel/next-learn/tree/main/dash board/starter-example. This might take a moment.

Installing packages. This might take a couple of minutes.

Lockfile is up to date, resolution step is skipped Packages: +227

Downloading @img/sharp-libvips-linux-x64@1.0.2: 7.06 MB/7.06 MB, done Downloading @img/sharp-libvips-linuxmusl-x64@1.0.2: 7.20 MB/7.20 MB, done

### Output of the **nexxt-app** Project Creation (cont.)

already here, as well as

**next-auth** - authentication,

tailwind - for styling,

**bcrypt** - encryption,

As one can see, **Typescript**, **React**, **and Next** are

vercel/postgres - for Postgres DB connections,

dependencies:

- + @heroicons/react 2.1.4
- @tailwindcss/forms 0.5
- @vercel/postgres 0.8.0
- autoprefixer 10.4.19
- + bcrypt 5.1.1
- + clsx 2.1.1
- + next 15.0.0-canary.56
- + next-auth 5.0.0-beta.19
- + postcss 8.4.38
- + react 19.0.0-rc-f38c22b2**zod** data validation etc.
- + react-dom 19.0.0-rc-f38c22b244-20240704
- + tailwindcss 3.4.4
- + typescript 5.5.2
- + use-debounce 10.0.1
- + zod 3.23.8

#### devDependencies:

- + @types/bcrypt 5.0.2
  + @types/node 20.14.8
  + @types/react 18.3.3
- + @types/react-dom 18.3.0

Done in 57s

#### Output of the **nexxt-app** Project Creation (end)

Done in 57s

Success! Created nexxt-app at /opt/NextJS\_Training/nexxt-app Inside that directory, you can run several commands:

pnpm run dev Starts the development server.

pnpm run build Builds the app for production.

Runs the built app in production mode. However the most "popular" commands are:

We suggest that you begin by typing:

cd nexxt-app

Thus, we'll use **pnpm** to run the project scripts from now: **pnpm run dev** - launch dev server **pnpm run build** - build the production version **pnpm start** - run the production version

However. the most "popular" commands are: cd nexxt-app # change to the project folder pnpm run dev # launch the app on the dev server on <u>http://localhost:3000/</u>

dmitry@dmitry-virtual-machine:/opt/NextJS\_TrainingS

## Understanding the NextJS Project Structure

**3** Show the project structure

tree -d # outputs just folders



/app: routes, components, and logics of the application

/app/lib: functions used by the app, *e.g.*, for retrieving DB data

/app/ui: user interface components like cards, tables, and forms

/node\_modules: standard modules downloaded by pnpm as per the package.json dependencies

/public: static resources, say, images

Unc	derstanding the Next	S Project Structure (cont.)
4	Show the app folder structure	cd app tree #shows both folders and files
	page.tsx: the root page v	/rapped in layout.tsx
layout.tsx lib data_ts	data.ts: functions interac	ting with the DB via sql requests
definitions.ts	definitions.ts: Typescrip	t data types definitions including those for
placeholder-da	interaction with ORMs li	ke Prisma
page.tsx seed route.ts	placeholder-data.ts: te provisioning	st (JSON) data for the Postgres DB
ui	utils.ts: various re-usabl	e service functions

route.ts: the DB tables creation and provisioning script

### Understanding the NextJS Project Structure (end)

5	Show the ui folder structure	cd ui tree



The ui folder contains TypeScript files, the user interface components like buttons, forms, tables, charts *etc.*, and (global.css) styles as well

The UI components are grouped by the main page constituent parts: customers, dashboard, invoices

## Launching **nexxt-app** on the Dev Server

```
6
```

```
Launch the nexxt-app application<br/>on the development serverpnpm i # install the project node-modules<br/>pnpm dev # start the dev server
```

```
> @ dev /opt/NextJS_Training/nexxt-app
> next dev
```

```
Next.js 15.0.0-canary.56
Local: http://localhost:3000
Starting...
Ready in 11s
Compiling / ...
Compiled / in 10.8s (490 modules)
GET / 200 in 11876ms
```

## Launching **nexxt-app** on the Dev Server

7	Open the app main page link:	http://localhost:3000/
	$\dot{-} \rightarrow C$ $\bigcirc$ $\bigcirc$ localhost:3000	
	🕻 Getting Started 🛛 🤉 Release Kotlin 1.8.0 · J 🏾 🗬 Gra	adle   Installation 📃 Спасибо, что выбрал 🔶 Install IntelliJ IC
L	og in	ie <u>Next.js Learn Course</u> , brought to you by vercei.
8	Stop the dev server when necessary:	Ctrl-C

## Session Summary

1	We learned how to install, update and switch versions of Node.js on
	Windows, Linux, MacOS using both classic tools (*.msi, nvm) and a
	recommended one, the fast node manager fnm

- 2 With the recommended package manager pnpm, we created a template NextJS application named nexxt-app based on a template from Vercel and launched it on the development server (localhost:3000)
- 3 We understood the project folder structure, its components: files, libraries and modules

## See you at the next session: 2. CSS Styling / Applying Styles to a NextJS App

#### The presentation is available for download here:

https://dmpsy.club/references/NextJS/lesson 001 getting started eng.pdf

Donate the author: <u>https://www.donationalerts.com/r/dmitrymak</u>



