# Debugging

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- Find a good IDE
- Auto format code & use shortcuts
- Use autocompletion & hints
- Explore extensions and settings

# Write code efficiently

- Use MDN!
- Googling before AI
- Use autocompletion & hints
- Don't be afraid to ask questions
- Trial and Error

# Finding help

- Read the error messages
- Console.log
- Browser debugging tools
- IDE debugging

# Debug your code

```
Prerender (html): /uk/how-does-natural-cycles-work -> build/client/uk/how-does-natural-cycles-work/index.
Prerender (data): /it/how-does-natural-cycles-work -> build/client/it/how-does-natural-cycles-work.data
TypeError: Cannot read properties of null (reading 'url')
    at file:///home/docker/actions-runner/_work/NCWeb/NCWeb/src/components/how-it-works-fertility-
partner/HowItWorksFertilityPartner.component.tsx:21:40
    at Array.map (<anonymous>)
```

```
> @naturalcycles/ncweb@1.0.0 migration:new /Users/duygu/@NaturalCycles/NCWeb
> tsx scripts/cms-migration.ts new --name=fill-out-all-popups-in-cm

node: 22.16.0 darwin arm64, cpus: 14, availableParallelism: 14, cpuLimit: undefined
NODE_OPTIONS: not defined, TZ: not defined
NODE_OPTIONS env variable is not defined. You may run into out-of-memory issues when running memory-i
ntensive scripts. It's recommended to set it to:
--max-old-space-size=12000
   datocms migrations:new --autogenerate=cms-dev-22642-c:master --api-token=undefined fill-out-all-po
pups-in-cm
/bin/sh: datocms: command not found
 × datocms migrations:new --autogenerate=cms-dev-22642-c:master --api-token=undefined fill-out-all-po
pups-in-cm took 4 ms and failed
runScript error: Error: spawn exited with code 127: datocms
    at Exec2.spawn (file:///Users/duygu/@NaturalCycles/NCWeb/node_modules/.pnpm/@naturalcycles+nodejs
-lib@15.20.2/node_modules/@naturalcycles/nodejs-lib/dist/exec2/exec2.js:66:19)
    at Object.handler (/Users/duygu/@NaturalCycles/NCWeb/scripts/cms-migration.ts:43:15)
    at file:///Users/duygu/@NaturalCycles/NCWeb/node_modules/.pnpm/yargs@18.0.0/node_modules/yargs/bu
ild/lib/command.js:245:54
    at maybeAsyncResult (file:///Users/duygu/@NaturalCycles/NCWeb/node_modules/.pnpm/yargs@18.0.0/nod
e_modules/yargs/build/lib/utils/maybe-async-result.js:9:15)
    at CommandInstance.handleValidationAndGetResult (file:///Users/duygu/@NaturalCycles/NCWeb/node_mo
dules/.pnpm/yargs@18.0.0/node_modules/yargs/build/lib/command.js:244:25)
    at CommandInstance.applyMiddlewareAndGetResult (file:///Users/duygu/@NaturalCycles/NCWeb/node_mod
ules/.pnpm/yargs@18.0.0/node_modules/yargs/build/lib/command.js:284:20)
    at CommandInstance.runCommand (file:///Users/duygu/@NaturalCycles/NCWeb/node_modules/.pnpm/yargs@
18.0.0/node_modules/yargs/build/lib/command.js:167:20)
    at [runYargsParserAndExecuteCommands] (file:///Users/duygu/@NaturalCycles/NCWeb/node_modules/.pnp
m/yargs@18.0.0/node_modules/yargs/build/lib/yargs-factory.js:1389:105)
    at YargsInstance.parse (file:///Users/duygu/@NaturalCycles/NCWeb/node_modules/.pnpm/yargs@18.0.0/
node_modules/yargs/build/lib/yargs-factory.js:704:63)
    at <anonymous> (/Users/duygu/@NaturalCycles/NCWeb/scripts/cms-migration.ts:107:6)
```

**Something went wrong!**

Go back to the homepage or try again later.

**Error:** Field '_allSlugLocales' doesn't exist on type 'PeriodCalculatorPageRecord'

- Observe
- Reproduce
- Pick a tool (Console / Network / Elements / Sources)
- Instrument (console.log, debugger;)
- Isolate (comment/guard)
- Fix & verify

# The process

# Example time!

# Thank you…