

Practical 6 (Working with Circle CI for continuous integration)

Step 1 - Create a repository

1. Log in to GitHub and begin the process to create a new repository.
2. Enter a name for your repository (for example, hello-world).
3. Select the option to initialize the repository with a README file.
4. Finally, click Create repository.
5. There is no need to add any source code for now.

github.com/new

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner * Mehdi5824 / Repository name * hello-world-p ✓

Great repository names are short and memorable. Need inspiration? How about [redesigned-goggles?](#)

Description (optional)

☒ Public
Anyone on the internet can see this repository. You choose who can commit.

☐ Private
You choose who can see and commit to this repository.

Initialize this repository with:
Skip this step if you're importing an existing repository.

☒ Add a README file
This is where you can write a long description for your project. [Learn more.](#)

Add .gitignore
Choose which files not to track from a list of templates. [Learn more.](#)

.gitignore template: None

Choose a license
A license tells others what they can and can't do with your code. [Learn more.](#)

License: None

This will set main as the default branch. Change the default name in your [settings](#).

① You are creating a public repository in your personal account.

[Create repository](#)

Login to Circle CI <https://app.circleci.com/> Using GitHub Login, Once logged in navigate to Projects.

app.circleci.com/projects/project-dashboard/github/Mehdi5824/

Mehdi5824
Mehdi Rezale

- Dashboard
- Projects**
- Insights
- Organization Settings
- Plan

Can't find an organization?
[Check permissions](#) and update access to the ones you want.

Notifications 1

Status **DEGRADED**

Docs

Orbs

Support

Set up new projects or follow projects already building on CircleCI.
Following a project adds it to your dashboard.

Projects

Repo name

Follow All ...

Repo	
hello-world	Set Up Project ...
MyRepos	Set Up Project ...

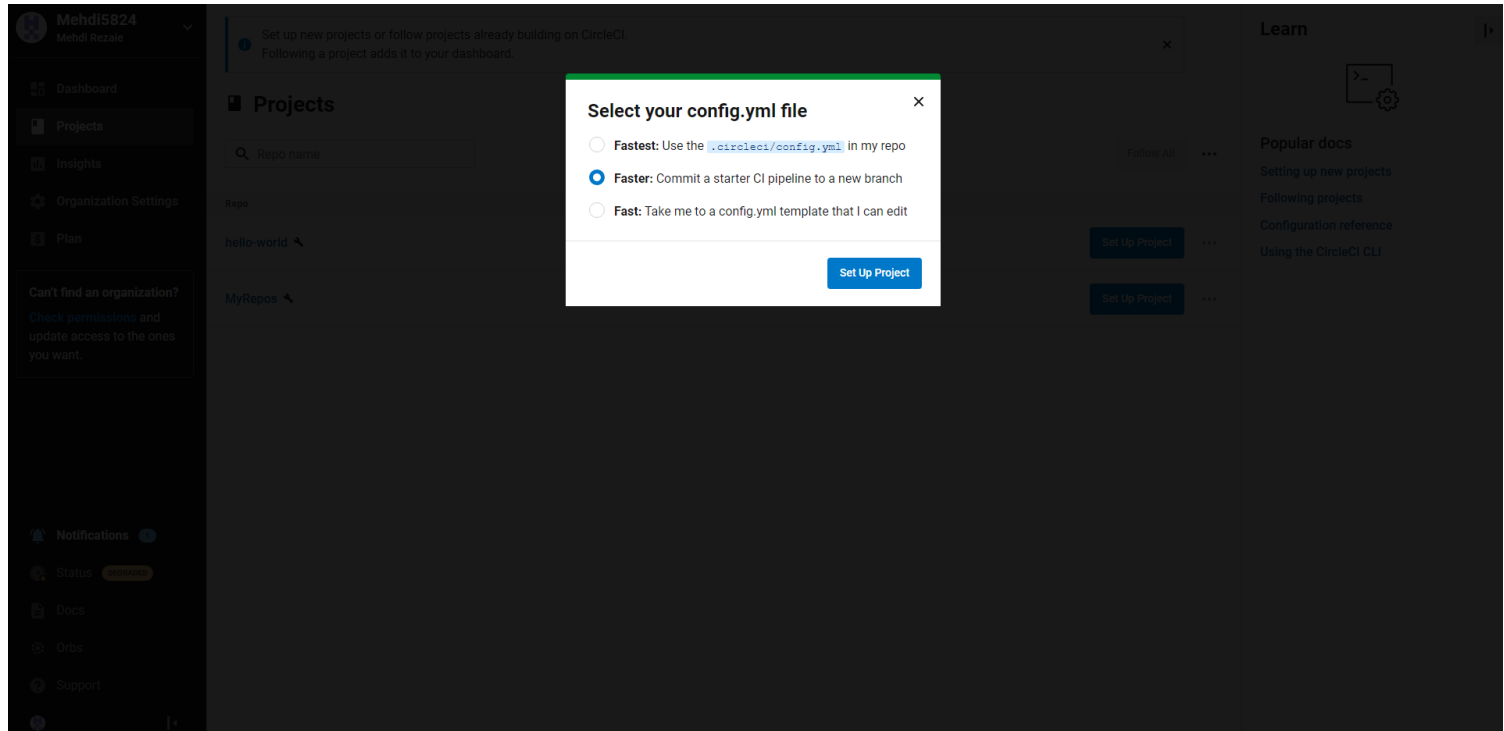
Learn

Popular docs

- [Setting up new projects](#)
- [Following projects](#)
- [Configuration reference](#)
- [Using the CircleCI CLI](#)

Step 2 - Set up CircleCI

1. Navigate to the CircleCI Projects page. If you created your new repository under an organization, you will need to select the organization name.
2. You will be taken to the Projects dashboard. On the dashboard, select the project you want to set up (hello-world).
3. Select the option to commit a starter CI pipeline to a new branch, and click Set Up Project. This will create a file `.circleci/config.yml` at the root of your repository on a new branch called `circleci-project-setup`.



Step 3 - Your first pipeline

On your project's pipeline page, click the green Success button, which brings you to the workflow that ran (say-hello-workflow).

Within this workflow, the pipeline ran one job, called say-hello. Click say-hello to see the steps in this job:

- a. Spin up environment
- b. Preparing environment variables
- c. Checkout code
- d. Say hello

Now select the "say-hello-workflow" to the right of Success status column

Mehdi5824

Mehdi Rezaie

Dashboard

Projects

Insights

Organization Settings

Plan UPGRADE

Can't find an organization?

Check permissions and update access to the ones you want.

Notifications 1

Status DEGRADED

Docs

Orbs

Support

Dashboard

Project

All Pipelines > hello-world

hello-world

Add team members

Edit Config

Trigger Pipeline

Project Settings

Filters

Everyone's Pipelineshello-worldAll Branches

Auto-expand

Pipeline	Status	Workflow	Branch / Commit	Start	Duration	Actions
hello-world 1	Success	say-hello-workflow	circlecic-project-setup6b308f0	3m ago	5s	<div></div> <div></div> <div></div> <div></div>

Select “say-hello” Job with a green tick

Mehdi5824

Mehdi Rezaie

Dashboard

Projects

Insights

Organization Settings

Plan UPGRADE

Can't find an organization?

Check permissions and update access to the ones you want.

Notifications 1

Status DEGRADED

Docs

Orbs

Support

Dashboard

Project

Branch

Workflow

All Pipelines > hello-world > circlecic-project-setup > say-hello-workflow

say-hello-workflow

Success

Insights

Rerun

Duration / Finished

Branch

Commit

Author

5s / 8m ago

circlecic-project-setup

6b308f0

Mehdi5824

say-hello3s

Did you know? CircleCI teams that commit 4x as often fix failed builds 2x faster.

20 pipelines/day

5 pipelines/day

70 min to recovery

142 min

Learn more

Mehdi5824 Mehdi Rezaie

Dashboard Projects Insights Organization Settings Plan **UPGRADE**

Can't find an organization? Check permissions and update access to the ones you want.

Notifications 1

Status DEGRADED

Docs

Orbs

Support

Dashboard Project Branch Workflow Job

All Pipelines > hello-world > circleci-project-setup > say-hello-workflow > say-hello (1)

say-hello **Success** Rerun ...

Duration / Finished	Queued	Executor / Resource Class	Branch	Commit	Author
2s / 9m ago	0s	Docker / Large	circleci-project-setup		Mehdi Rezaie

STEPS TESTS TIMING **BETA** ARTIFACTS RESOURCES **NEW**

Parallel runs 1 / 16 parallel runs

0 00:02 Use parallelism to run faster tests. Parallelism speeds up tests by splitting them across multiple executors. Go to Docs X

Spin up environment	1s	📄	⬇
Preparing environment variables	0s	📄	⬇
Checkout code	0s	📄	⬇
Say hello	0s	📄	⬇

Select Branch and option circleci-project-setup

github.com/Mehdi5824/hello-world

Search or jump to... Pull requests Issues Marketplace Explore

Mehdi5824 / hello-world Public

Pin Unwatch 1 Fork 0 Star 0

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

circleci-project-setup had recent pushes 13 minutes ago Compare & pull request

main 2 branches 0 tags Go to file Add file Code

Switch branches/tags

Find or create a branch...

Branches Tags

main default

circleci-project-setup

View all branches

Initial commit 2 hours ago

1 commit 2 hours ago

About

No description, website, or topics provided.

Readme

0 stars

1 watching

0 forks

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

© 2022 GitHub, Inc. Terms Privacy Security Status Docs Contact GitHub Pricing API Training Blog About

Step 4 - Break your build

In this section, you will edit the `.circleci/config.yml` file and see what happens if a build does not complete successfully.

It is possible to edit files directly on GitHub.

github.com/Mehdi5824/hello-world/tree/circleci-project-setup

Search or jump to...

[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)

Mehdi5824 / hello-world Public

<> Code Issues Full requests Actions Projects Wiki Security Insights Settings

circleci-project-setup had recent pushes 14 minutes ago

Compare & pull request

circleci-proje...

2 branches

0 tags

Go to file

Add file

Code

This branch is 1 commit ahead of main.

Contribute

Mehdi5824 Add .circleci/config.yml

60308f0 14 minutes ago 2 commits

.circleci

Add .circleci/config.yml

14 minutes ago

README.md

Initial commit

2 hours ago

README.md

hello-world

About

No description, website, or topics provided.

Readme

0 stars

1 watching

0 forks

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

© 2022 GitHub, Inc.

[Terms](#) [Privacy](#) [Security](#) [Status](#) [Docs](#) [Contact GitHub](#) [Pricing](#) [API](#) [Training](#) [Blog](#) [About](#)

github.com/Mehdi5824/hello-world/blob/circleci-project-setup/.circleci/config.yml

Search or jump to...

Pull requestsIssuesMarketplaceExplore

PinUnwatchForkStar

CodeIssuesPull requestsActionsProjectsWikiSecurityInsightsSettings

circleci-proje...hello-world / .circleci / config.yml

Go to file...

Mehdi5824 Add .circleci/config.yml ✓

Latest commit 6a388f0 16 minutes agoHistory

1 contributor

26 lines (24 sloc) | 944 Bytes

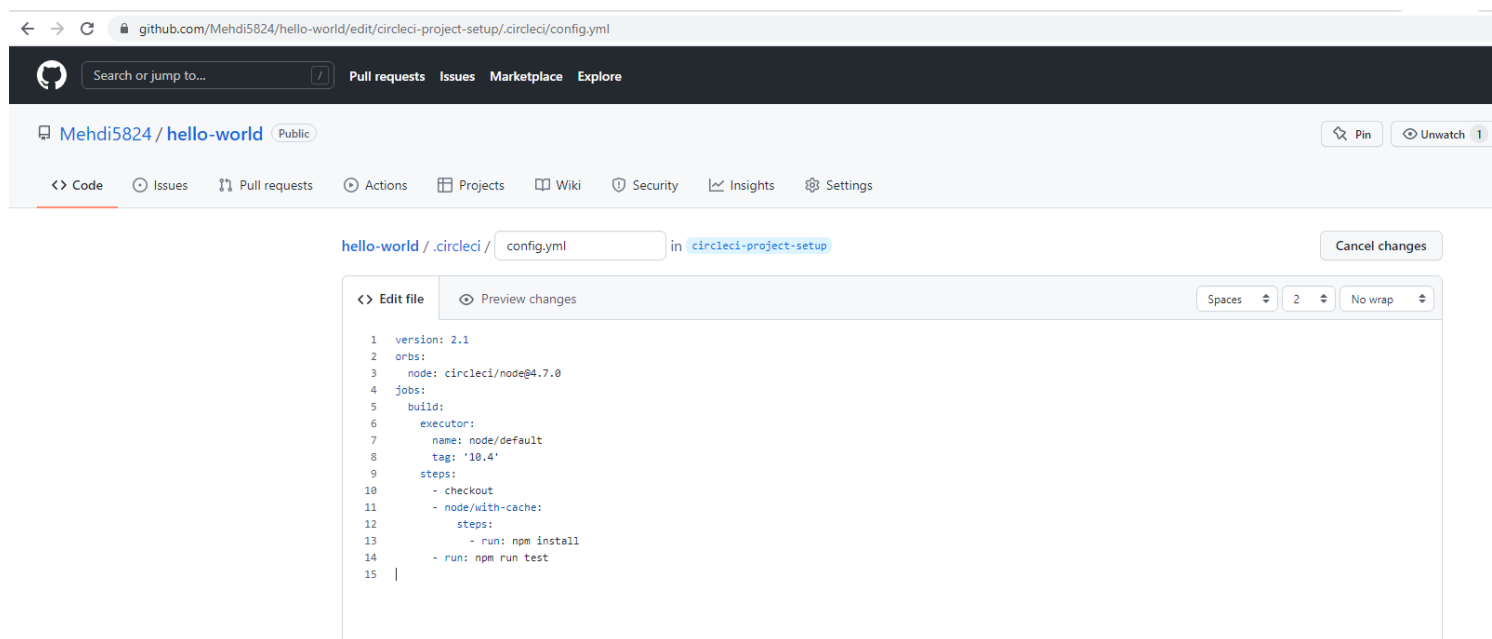
RawBlame

```
1 # Use the latest 2.1 version of CircleCI pipeline process engine.
2 # See: https://circleci.com/docs/2.0/configuration-reference
3 version: 2.1
4
5 # Define a job to be invoked later in a workflow.
6 # See: https://circleci.com/docs/2.0/configuration-reference/#jobs
7 jobs:
8   say-hello:
9     # Specify the execution environment. You can specify an image from Dockerhub or use one of our Convenience Images from CircleCI's Developer Hub.
10    # See: https://circleci.com/docs/2.0/configuration-reference/#docker-machine-macos-windows-executor
11    docker:
12      - image: cimg/base:stable
13    # Add steps to the job
14    # See: https://circleci.com/docs/2.0/configuration-reference/#steps
15    steps:
16      - checkout
17      - run:
18        name: "say hello"
19        command: "echo Hello, World!"
20
21 # Invoke jobs via workflows
22 # See: https://circleci.com/docs/2.0/configuration-reference/#workflows
23 workflows:
24   say-hello-workflow:
25     jobs:
26       - say-hello
```

Let's use the [Node orb](#). Replace the existing config by pasting the following code:

```
1  version: 2.1
2  orbs:
3    node: circleci/node@4.7.0
4  jobs:
5    build:
6      executor:
7        name: node/default
8        tag: '10.4'
9      steps:
10       - checkout
11       - node/with-cache:
12         steps:
13           - run: npm install
14           - run: npm run test
```

The GitHub file editor should look like this



Scroll down and Commit your changes on GitHub

```

10 - checkout
11 - node/with-cache:
12   steps:
13     - run: npm install
14   - run: npm run test
15

```



Commit changes

Update config.yml

we have updated to config.yml file

☒ Commit directly to the circleci-project-setup branch.

☐ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)

Commit changes

Cancel



© 2022 GitHub, Inc.

[Terms](#)

[Privacy](#)

[Security](#)

[Status](#)

[Docs](#)

[Contact GitHub](#)

[Pricing](#)

[API](#)

[Training](#)

[Blog](#)

[About](#)

After committing your changes, then return to the Projects page in CircleCI. You should see a new pipeline running... and it will fail! What's going on? The Node orb runs some common Node tasks. Because you are working with an empty repository, running `npm run test`, a Node script, causes the configuration to fail. To fix this, you need to set up a Node project in your repository.

Mehdi5824
Mehdi Rezaie

Dashboard
Projects
Insights
Organization Settings
Plan UPGRADE

Can't find an organization?
Check permissions and update access to the ones you want.

Notifications 1
Status DEGRADED
Docs
Orbs
Support

Dashboard
All Pipelines

Everyone's Pipelines
All Projects
All Branches
Auto-expand

Pipeline	Status	Workflow	Branch / Commit	Start	Duration	Actions
hello-world 2	Failed	Build Error	circleci-project-setup ca5ab74 Update config.yml	3m ago	6s	
hello-world 1	Success	say-hello-workflow	circleci-project-setup 6b308f0	22m ago	5s	

No more pipelines to load

Step 5 – Use Workflows

You do not have to use orbs to use CircleCI. The following example details how to create a custom configuration that also uses the workflow feature of CircleCI.

- 1) Take a moment and read the comments in the code block below. Then, to see workflows in action, edit your `.circleci/config.yml` file and copy and paste the following text into it.

```
1  version: 2
2  jobs: # we now have TWO jobs, so that a workflow can coordinate them!
3    one: # This is our first job.
4      docker: # it uses the docker executor
5        - image: cimg/ruby:2.6.8 # specifically, a docker image with ruby 2.6.8
6          auth:
7            username: mydockerhub-user
8            password: $DOCKERHUB_PASSWORD # context / project UI env-var reference
9        # Steps are a list of commands to run inside the docker container above.
10     steps:
11       - checkout # this pulls code down from GitHub
12       - run: echo "A first hello" # This prints "A first hello" to stdout.
13       - run: sleep 25 # a command telling the job to "sleep" for 25 seconds.
14     two: # This is our second job.
15       docker: # it runs inside a docker image, the same as above.
16         - image: cimg/ruby:3.0.2
17           auth:
18             username: mydockerhub-user
19             password: $DOCKERHUB_PASSWORD # context / project UI env-var reference
20       steps:
21         - checkout
22         - run: echo "A more familiar hi" # We run a similar echo command to above.
23         - run: sleep 15 # and then sleep for 15 seconds.
24   # Under the workflows: map, we can coordinate our two jobs, defined above.
25   workflows:
26     version: 2
27     one_and_two: # this is the name of our workflow
28       jobs: # and here we list the jobs we are going to run.
29         - one
30         - two
```

You don't need to write the comments which are the text after #

- 2) Commit these changes to your repository and navigate back to the CircleCI Pipelines page. You should see your pipeline running.

o-world

Public

Pin

Unwatch 1

Pull requests

Actions

Projects

Wiki

Security

Insights

Settings

hello-world / .circleci /

config.yml

in circleci-project-setup

Cancel changes

<> Edit file

Preview changes

Spaces 2 No wrap

```

1  version: 2
2  jobs: # we now have TWO jobs, so that a workflow can coordinate them!
3    one: # This is our first job.
4      docker: # it uses the docker executor
5        - image: cimg/ruby:2.6.8 # specifically, a docker image with ruby 2.6.8
6          auth:
7            username: mydockerhub-user
8            password: $DOCKERHUB_PASSWORD # context / project UI env-var reference
9      # Steps are a list of commands to run inside the docker container above.
10     steps:
11       - checkout # this pulls code down from GitHub
12       - run: echo "A first hello" # This prints "A first hello" to stdout.
13       - run: sleep 25 # a command telling the job to "sleep" for 25 seconds.
14     two: # This is our second job.
15       docker: # it runs inside a docker image, the same as above.
16         - image: cimg/ruby:3.0.2
17           auth:
18             username: mydockerhub-user
19             password: $DOCKERHUB_PASSWORD # context / project UI env-var reference
20       steps:
21         - checkout
22         - run: echo "A more familiar hi" # We run a similar echo command to above.
23         - run: sleep 15 # and then sleep for 15 seconds.
24     # Under the workflows: map, we can coordinate our two jobs, defined above.
25   workflows:
26     version: 2
27     one_and_two: # this is the name of our workflow
28       jobs: # and here we list the jobs we are going to run.
29         - one
30         - two
31

```

3) Click on the running pipeline to view the workflow you have created. You should see that two jobs ran (or are currently running!) concurrently.

Mehdi5824

Mehdi Rezaie

Dashboard

Projects

Insights

Organization Settings

Plan UPGRADE

Can't find an organization?

Check permissions and update access to the ones you want.

Dashboard

All Pipelines

Everyone's Pipelines


All Projects

All Branches

Auto-expand

Pipeline	Status	Workflow	Branch / Commit	Start	Duration	Actions
hello-world 3	Running	one_and_two	circleci-project-setup e11ad95 Update config.yml	14s ago	13s	🔄 🔄 🔄 ...
hello-world 2	Failed	Build Error	circleci-project-setup ca5ab74 Update config.yml	9m ago	6s	🔄 🔄 🔄 ...
hello-world 1	Success	say-hello-workflow	circleci-project-setup 6b308f0	29m ago	5s	🔄 🔄 🔄 ...

No more pipelines to load



Mehdi5824
Mehdi Rezaie

Dashboard

Projects


Insights

Organization Settings

Plan UPGRADE

Can't find an organization?

Check permissions and update access to the ones you want.


Notifications
1

Dashboard
Project
Branch
Workflow

All Pipelines > hello-world > circleci-project-setup > one_and_two

one_and_two
Success

Duration / Finished	Branch	Commit	Author & Message
34s / 3s ago	circleci-project-setup	e11ad95	Update config.yml

two	19s
one	31s

Step 5 – Add some changes to use workspaces

Each workflow has an associated workspace which can be used to transfer files to downstream jobs as the workflow progresses. You can use workspaces to pass along data that is unique to this run and which is needed for downstream jobs. Try updating config.yml to the following:

```

1  version: 2
2  jobs:
3    one:
4      docker:
5        - image: cimg/ruby:3.0.2
6          auth:
7            username: mydockerhub-user
8            password: $DOCKERHUB_PASSWORD # context / project UI env-var reference
9      steps:
10       - checkout
11       - run: echo "A first hello"
12       - run: mkdir -p my_workspace
13       - run: echo "Trying out workspaces" > my_workspace/echo-output
14       - persist_to_workspace:
15         # Must be an absolute path, or relative path from working_directory
16         root: my_workspace
17         # Must be relative path from root
18         paths:
19           - echo-output
20    two:
21      docker:
22        - image: cimg/ruby:3.0.2
23          auth:
24            username: mydockerhub-user
25            password: $DOCKERHUB_PASSWORD # context / project UI env-var reference
26      steps:
27       - checkout
28       - run: echo "A more familiar hi"
29       - attach_workspace:
30         # Must be absolute path or relative path from working_directory
31         at: my_workspace

```

```

32
33     - run: |
34         if [[ $(cat my_workspace/echo-output) == "Trying out workspaces" ]]; then
35             echo "It worked!";
36         else
37             echo "Nope!"; exit 1
38         fi
39 workflows:
40   version: 2
41   one_and_two:
42     jobs:
43       - one
44       - two:
45         requires:
46           - one

```

Updated config.yml in GitHub file editor should be updated like this

hello-world / .circleci / config.yml in circleci-project-setup

Cancel changes

<> Edit file

Preview changes

Spaces

2

No wrap

```

1  version: 2
2  jobs:
3    one:
4      docker:
5        - image: cimg/ruby:3.0.2
6          auth:
7            username: mydockerhub-user
8            password: $DOCKERHUB_PASSWORD # context / project UI env-var reference
9      steps:
10       - checkout
11       - run: echo "A first hello"
12       - run: mkdir -p my_workspace
13       - run: echo "Trying out workspaces" > my_workspace/echo-output
14       - persist_to_workspace:
15         # Must be an absolute path, or relative path from working_directory
16         root: my_workspace
17         # Must be relative path from root
18         paths:
19           - echo-output
20     two:
21       docker:
22         - image: cimg/ruby:3.0.2
23           auth:
24             username: mydockerhub-user
25             password: $DOCKERHUB_PASSWORD # context / project UI env-var reference
26       steps:
27         - checkout
28         - run: echo "A more familiar hi"
29         - attach_workspace:
30           # Must be absolute path or relative path from working_directory
31           at: my_workspace
32
33       - run: |
34         if [[ $(cat my_workspace/echo-output) == "Trying out workspaces" ]]; then
35             echo "It worked!";

```



Commit changes



Commit changes

Update config.yml

3rd Update


☒ Commit directly to the circleci-project-setup branch.

☐ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)

Commit changes

Cancel

Finally your workflow with the jobs running should look like this



Mehdi5824

Mehdi Rezaie

Dashboard

Projects

Insights

Organization Settings

Plan UPGRADE

Can't find an organization?

[Check permissions](#) and update access to the ones you want.

Dashboard

Project

Branch

Workflow

All Pipelines

 >

hello-world

 >

circleci-project-setup

 >

one_and_two

one_and_two

Running

Insights

Rerun

Duration

Branch

Commit

Author & Message

15s

circleci-project-setup

bfce97c

Update config.yml

one 4s

two 3s