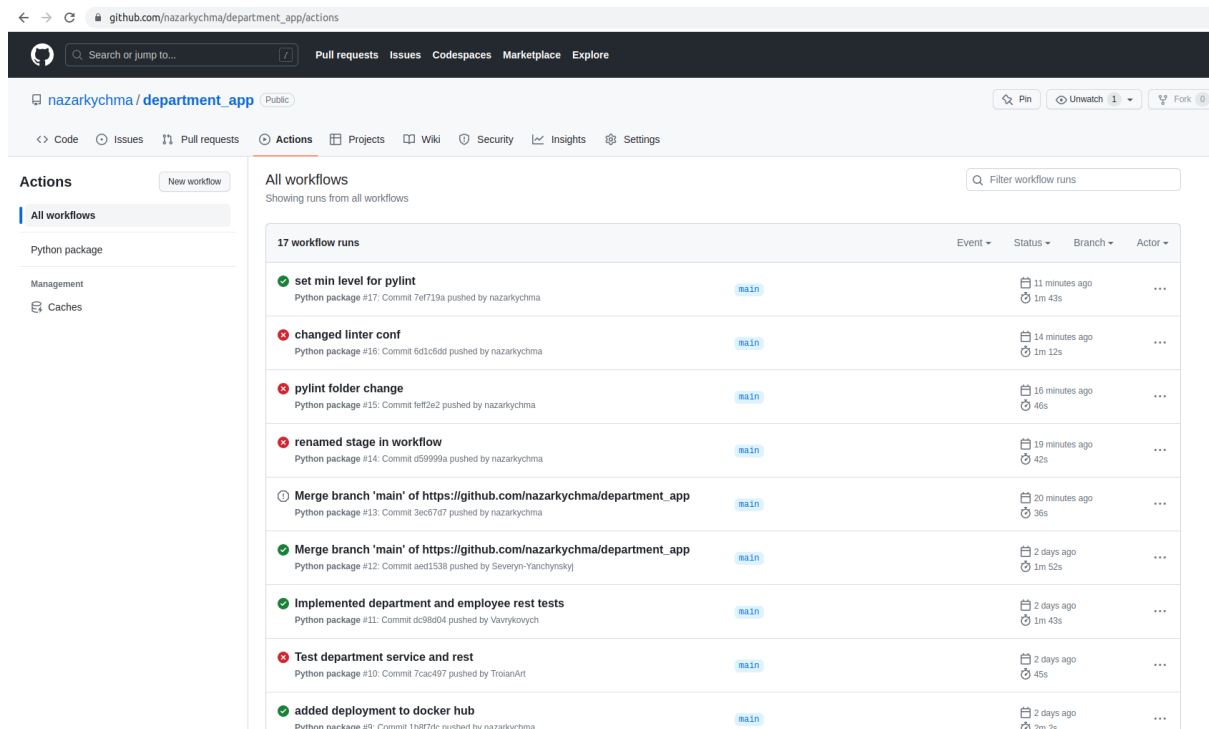


Our team has used Github Actions to create CI pipeline.



The screenshot displays the GitHub Actions interface for the repository `github.com/nazarkychma/departement_app`. The left sidebar shows the 'Actions' tab with a 'New workflow' button and a list of workflow categories: 'All workflows', 'Python package', 'Management', and 'Caches'. The main area is titled 'All workflows' and shows a list of 17 workflow runs. The runs are as follows:

Event	Status	Branch	Actor
set min level for pylint	Success	main	...
changed linter conf	Failure	main	...
pylint folder change	Failure	main	...
renamed stage in workflow	Failure	main	...
Merge branch 'main' of https://github.com/nazarkychma/departement_app	Success	main	...
Merge branch 'main' of https://github.com/nazarkychma/departement_app	Success	main	...
Implemented department and employee rest tests	Success	main	...
Test department service and rest	Failure	main	...
added deployment to docker hub	Success	main	...

Pipeline itself can be found here

https://github.com/nazarkychma/departement_app/blob/main/.github/workflows/main.yml

Pipeline is being triggered whenever commit is made to any branch.

It basically consist of this stages:

- 1) Setting up an environment

Firstly it installs Python3 and then installs project requirements, which are listed in requirements.txt file.


```
✓ Coverage test

1 ▶ Run coverage run -m unittest discover
12 .....
13 -----
14 Ran 88 tests in 3.144s
15
16 OK
17 Name                               Stmts  Miss  Cover
18 -----
19 department_app/__init__.py          32      1   97%
20 department_app/config_files/__init__.py      2      0  100%
21 department_app/config_files/config.py       12      0  100%
22 department_app/helpers/__init__.py           0      0  100%
23 department_app/helpers/populate_db.py       25      0  100%
24 department_app/log/__init__.py              1      0  100%
25 department_app/log/logger_config.py         11      0  100%
26 department_app/models/__init__.py            0      0  100%
27 department_app/models/departement.py       13      0  100%
28 department_app/models/employee.py          13      0  100%
29 department_app/rest/__init__.py              0      0  100%
30 department_app/rest/departement_api.py      39      2   95%
31 department_app/rest/employee_api.py        61      4   93%
32 department_app/service/__init__.py           0      0  100%
33 department_app/service/departement_service.py 56      2   96%
34 department_app/service/employee_service.py  69      0  100%
35 department_app/tests/__init__.py             0      0  100%
36 department_app/tests/conftest.py            14      0  100%
37 department_app/tests/test_departement_rest.py 49      0  100%
38 department_app/tests/test_departement_service.py 46      0  100%
39 department_app/tests/test_departement_view.py 39      0  100%
40 department_app/tests/test_employee_rest.py   91      0  100%
41 department_app/tests/test_employee_service.py 69      0  100%
42 department_app/tests/test_employee_view.py   63      0  100%
43 department_app/views/__init__.py             0      0  100%
44 department_app/views/departments_view.py    47      0  100%
45 department_app/views/employees_view.py      74      0  100%
46 -----
47 TOTAL                                826      9   99%
```

3) Next stage is linter. We are using pylint to check our code quality. If the code is rated at less than 8 out of 10, the workflow will fail and the new build will not be published.

```
Push to docker hub

1 Warning: Input 'repository' has been deprecated with message: v2 is now available through docker/build-push-action@v2
2 ▶ Run docker/build-push-action@v1
20 /usr/bin/docker run --name dockergithubactionsv1_f12245 --label ed966e --workdir /github/workspace --rm -e "pythonLocation" -e "PKG_CONFIG_PATH" -e "Python_ROOT_DIR" -e "Python2_ROOT_DIR"
"Python3_ROOT_DIR" -e "LD_LIBRARY_PATH" -e "INPUT_USERNAME" -e "INPUT_PASSWORD" -e "INPUT_REPOSITORY" -e "INPUT_TAG_WITH_REF" -e "INPUT_REGISTRY" -e "INPUT_TAGS" -e "INPUT_TAG_WITH_SHA" -e
"INPUT_PATH" -e "INPUT_DOCKERFILE" -e "INPUT_TARGET" -e "INPUT_ALWAYS_PULL" -e "INPUT_BUILD_ARGS" -e "INPUT_CACHE_FROMS" -e "INPUT_LABELS" -e "INPUT_ADD_GIT_LABELS" -e "INPUT_PUSH" -e "HOME"
"GITHUB_JOB" -e "GITHUB_REF" -e "GITHUB_SHA" -e "GITHUB_REPOSITORY" -e "GITHUB_REPOSITORY_OWNER" -e "GITHUB_REPOSITORY_OWNER_ID" -e "GITHUB_RUN_ID" -e "GITHUB_RUN_NUMBER" -e "GITHUB_RETENT
-e "GITHUB_RUN_ATTEMPT" -e "GITHUB_REPOSITORY_ID" -e "GITHUB_ACTOR_ID" -e "GITHUB_ACTOR" -e "GITHUB_TRIGGERING_ACTOR" -e "GITHUB_WORKFLOW" -e "GITHUB_HEAD_REF" -e "GITHUB_BASE_REF" -e
"GITHUB_EVENT_NAME" -e "GITHUB_SERVER_URL" -e "GITHUB_API_URL" -e "GITHUB_GRAPHQL_URL" -e "GITHUB_REF_NAME" -e "GITHUB_REF_PROTECTED" -e "GITHUB_REF_TYPE" -e "GITHUB_WORKFLOW_REF" -e
"GITHUB_WORKFLOW_SHA" -e "GITHUB_WORKSPACE" -e "GITHUB_ACTION" -e "GITHUB_EVENT_PATH" -e "GITHUB_ACTION_REPOSITORY" -e "GITHUB_ACTION_REF" -e "GITHUB_PATH" -e "GITHUB_ENV" -e "GITHUB_STEP
-e "GITHUB_STATE" -e "GITHUB_OUTPUT" -e "RUNNER_OS" -e "RUNNER_ARCH" -e "RUNNER_NAME" -e "RUNNER_TOOL_CACHE" -e "RUNNER_TEMP" -e "RUNNER_WORKSPACE" -e "ACTIONS_RUNTIME_URL" -e
"ACTIONS_RUNTIME_TOKEN" -e "ACTIONS_CACHE_URL" -e GITHUB_ACTIONS=true -e CI=true -v "/var/run/docker.sock":"/var/run/docker.sock" -v "/home/runner/work/_temp/_github_home":"/github/home" -v
"/home/runner/work/_temp/_github_workflow":"/github/workflow" -v "/home/runner/work/_temp/_runner_file_commands":"/github/file_commands" -v
"/home/runner/work/department_app/department_app":"/github/workspace" docker/github-actions:v1 "build-push"
21 Logging in to registry
22 WARNING! Using -*** the CLI is insecure. Use --password=stdin.
23 WARNING! Your password will be stored unencrypted in /github/home/.docker/config.json.
24 Configure a credential helper to remove this warning. See
25 https://docs.docker.com/engine/reference/commandline/login/#credentials-store
26
27 Login Succeeded
28 Building image [***:main]
29 Sending build context to Docker daemon 767kB
30
31 Step 1/5 : FROM python:3.8
32 3.8: Pulling from library/python
33 918547b94326: Already exists
34 5d79063a81c5: Already exists
35 4eedd9c5abf7: Already exists
36 9cdadd4065f5: Already exists
37 2a12d0931f3f: Pulling fs layer
38 d82a52c5af86: Pulling fs layer
39 931bfc3bc9d3: Pulling fs layer
40 08dd567f6040: Pulling fs layer
41 08dd567f6040: Waiting
42 931bfc3bc9d3: Verifying Checksum
43 931bfc3bc9d3: Download complete

PyLint stage

1 ▶ Run pylint --fail-under=8 *
11 ***** Module Dockerfile
12 Dockerfile:1:6: E0001: invalid syntax (<unknown>, line 1) (syntax-error)
13 ***** Module README
14 README.md:4:14: E0001: invalid syntax (<unknown>, line 4) (syntax-error)
15 ***** Module department_app.service.department_service
16 department_app/service/department_service.py:70:8: W1203: Use lazy % formatting in logging functions (logging-fstring-interpolation)
17 department_app/service/department_service.py:107:8: W1203: Use lazy % formatting in logging functions (logging-fstring-interpolation)
18 ***** Module department_app.service.employee_service
19 department_app/service/employee_service.py:57:8: W1203: Use lazy % formatting in logging functions (logging-fstring-interpolation)
20 department_app/service/employee_service.py:88:8: W1203: Use lazy % formatting in logging functions (logging-fstring-interpolation)
21 ***** Module department_app.logs
22 department_app/logs.log:1:7: E0001: leading zeros in decimal integer literals are not permitted; use an 0o prefix for octal integers (<unknown>, line 1) (syntax-error)
23 ***** Module requirements
24 requirements.txt:1:13: E0001: invalid syntax (<unknown>, line 1) (syntax-error)
25
26 -----
27 Your code has been rated at 9.69/10
28
```





4) The last stage is docker image build and publishing to docker hub (https://hub.docker.com/repository/docker/nazarkychma/department_app/general). As far as our project is written using python, there is no build stage, but you can see build details of docker image.

Tag (or version) of image is being matched with a branch name, so for example if we want to create version v.1.0.2, then we should create a branch with the same name.

18 workflow runs		Event ▾	Status ▾	Branch ▾	Actor ▾
<div><div></div><div>just some test</div><div>Python package #18: Commit d20f297 pushed by nazarkychma</div></div>		v.1	2 minutes ago		...
			2m 6s		

Tags

This repository contains 2 tag(s).

Tag	OS	Type	Pulled	Pushed
 v.1		Image	---	a few seconds ago
 main		Image	---	22 minutes ago

[See all](#)

[Go to Advanced Image Management](#)