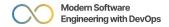




## **Introduction to GitHub Actions**



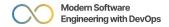
### **GitHub Actions**



Automation platform integrated into GitHub

Used to create custom, automated software development workflows

Saves time and increases productivity



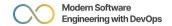
### **Workflows**



Defined as a YAML file (\*.yml or \*.yaml)

Text files with indented, hierarchical format of colon-separated key-value pairs

Stored in GitHub repository at .github/workflows/

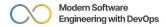


# **Building GitHub Actions**



How does GitHub Actions work?

- 1) an event triggers a workflow
- 2) the workflow contains a job
- 3) the job contains steps of actions that will run in a specified order



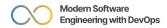
#### **Events**



Trigger workflows anywhere in your development lifecycle

Such as when:
an issue is opened
a pull request is made
code is pushed to a certain branch
& more

Can also set up workflows to run on a schedule, or manually



### **Actions**



#### Actions power your workflows

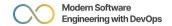
Jobs consolidate steps that contain one or more actions

#### **Examples:**

Check out a repository
Set up a Python environment
Send an email notification
Run an automated test
Push code to another repository
& more

```
on:-push

jobs:
--check-python-version:
--runs-on:-ubuntu-latest
--steps:
--uses:-actions/checkout@v2
--uses:-actions/setup-python@v2
--run:-python--V
```



## **Actions Marketplace**

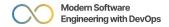


Create custom actions or use community-created actions from the Actions Marketplace

Many actions already available to use

https://github.com/marketplace (choose Actions category)

Mark	etplace	Documentation	
Searcl	h Marketpla	ce for Actions	
eature	d Actions		
0	Cache By actions ( Cache artitime	ofacts like dependencies and build outputs to improve workflow execution	<b>☆</b> 2.3k
0	By actions ( Setup a No	de.js environment  ode.js environment by adding problem matchers and optionally ing and adding it to the PATH	☆ 1.5k
0	Setup Java By actions ( Set up a sp PATH		☆ 552
0	By actions ( Download	a Build Artifact a build artifact that was previously uploaded in the workflow by the iifact action	☆ 445
0	First intera By actions ( Greet new request		☆ 156

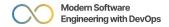


### **Review results**



Test software across multiple platforms

Review results after actions are completed to check for failures



# **Review results**



Summary     Jobs	Explore-GitHub-Actions (3.6) failed 2 hours ago in 4s
Explore-GitHub-Actions (2.7)	> Set up job
8 Explore-GitHub-Actions (3.6)	> Run echo "Job automatically triggered by event push."
Explore-GitHub-Actions (3.7)	> @ Run echo "Job running on a Linux server hosted by GitHub."
Explore-GitHub-Actions (3.8)	>
Explore-GitHub-Actions (pypy-2.7)	> Check out repository code
8 Explore-GitHub-Actions (pypy-3.6)	> Setup Python
	→ S Run python helloworld.py
	<pre>1  * Run python helloworld.py 7  Traceback (most recent call last): 8  Hello World(sys.version_info(major=3, minor=6, micro=15, releaselevel="final", serial=0)linux 9  File "helloworld.py", line 12, in <module> 10  main() 11  File "helloworld.py", line 8, in main 12  Error:    raise Exception('Python version 3.6.x is unsupported!') 13  Exception: Python version 3.6.x is unsupported! 14  Error: Process completed with exit code 1.</module></pre>