

Using the source code control system GitHub to manage your SAS code

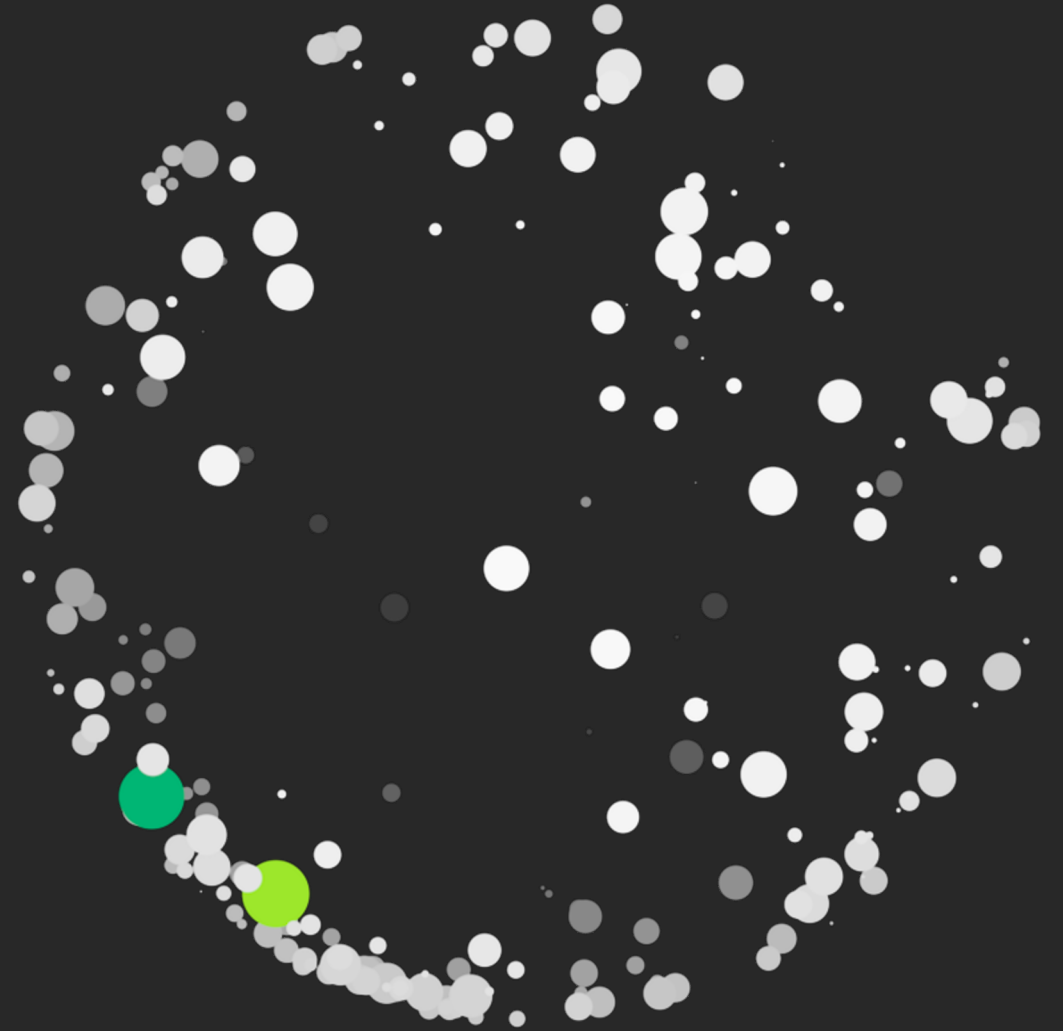
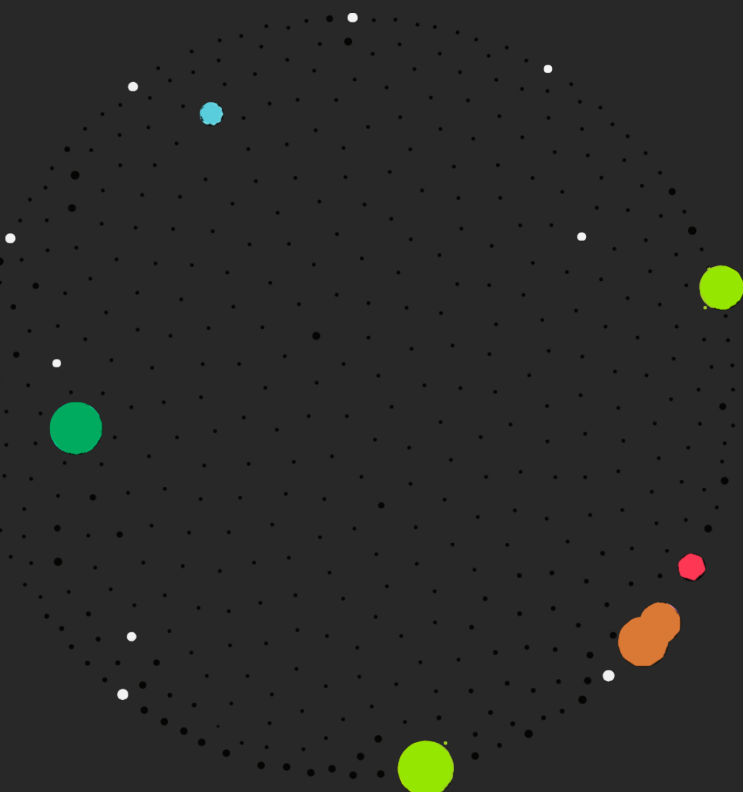


TABLE OF CONTENTS



What is GitHub

Terminology and Process

Copy an existing repository and commit files

Push and pull

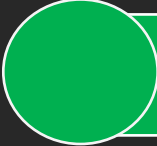
Branches

More Functions

WHAT IS GITHUB



Git is an open source version control system



It stores programs, program revisions and modifications in a central repository



Git is a command line tool, but there are also programs available with a graphical user interface



GitHub is an online service; developer can store their projects there and network with like-minded people



It is possible to create public and private repositories

TERMINOLOGY AND PROCESS

Repository

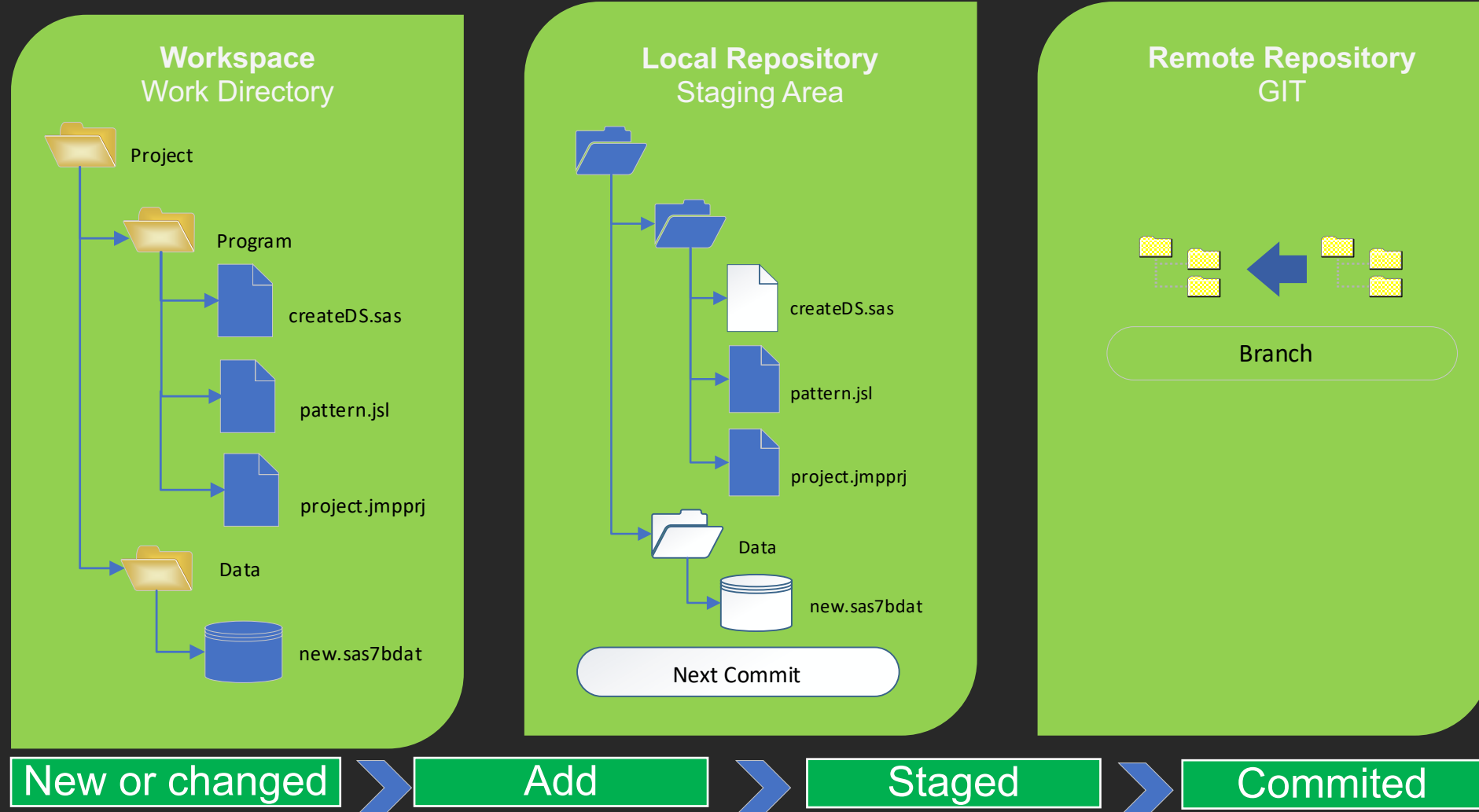
Forking

Commit

Pull or Merge

Changelogs

Branches

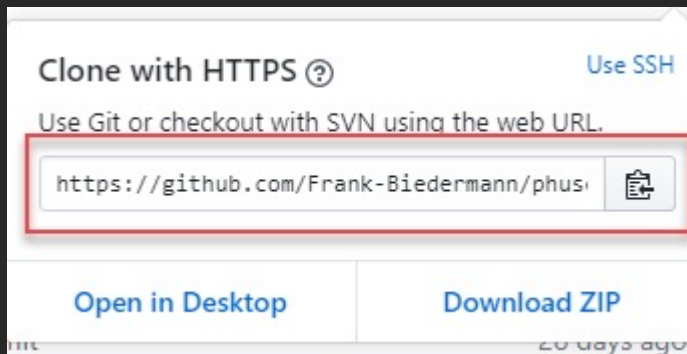


COPY AN EXISTING REPOSITORY AND COMMIT FILES

The function GITFN_CLONE clones a remote GitHub repository to a local computer or server folder.

Example 1: Using HTTPS

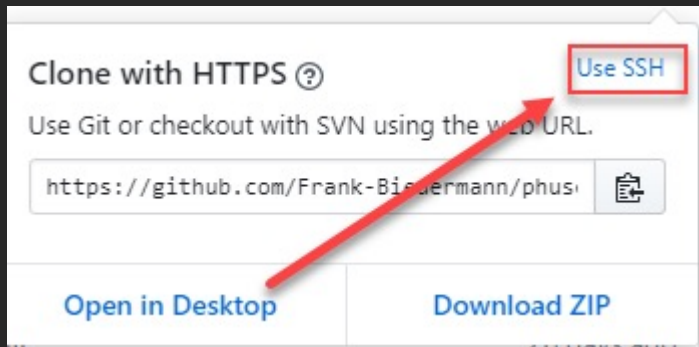
```
data _null_;  
    RC=GITFN_CLONE("https://github.com/Frank-Biedermann/phuse-git.git",  
        "C:\tmp\git_phuse");  
run;
```



COPY AN EXISTING REPOSITORY AND COMMIT FILES

Example 2:

```
data _null_;  
  RC=GITFN_CLONE("git@github.com:Frank-Biedermann/phuse-git.git",  
    "C:\tmp\git_phuse",  
    "git",  
    "password for the SSH key",  
    "ssh public key",  
    "ssh private key");  
run;
```



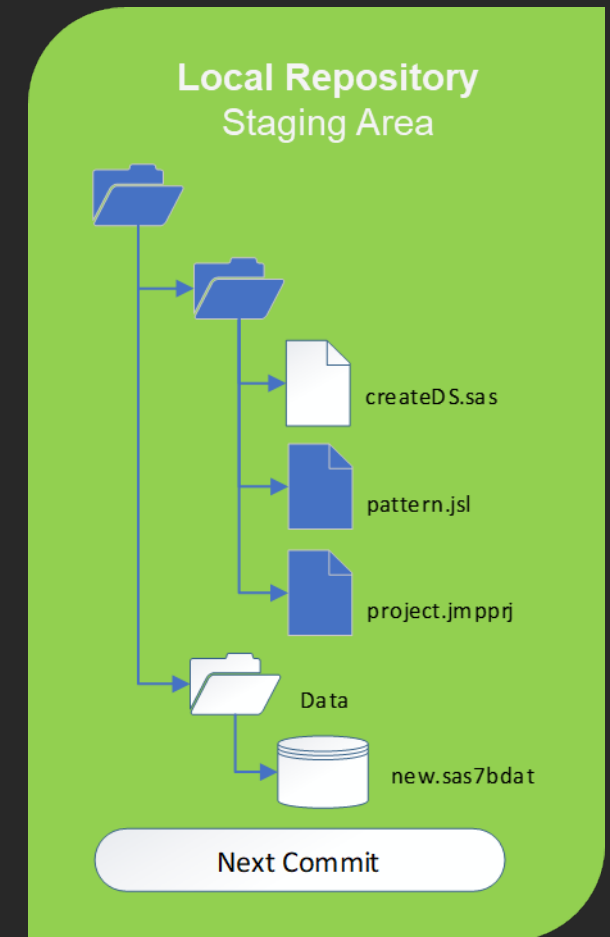
COPY AN EXISTING REPOSITORY AND COMMIT FILES

The function GITFN_IDX_ADD prepares (stages) one or more files for committing

```
data _null_;  
  RC=GITFN_IDX_ADD("C:\tmp\git_phuse",  
    "createDS.sas", "new.sas7bdat", "new",  
    "pattern.jsl", "project.jmpprj", "modified"  
  );  
run;
```

The function GITFN_COMMIT commits the previously staged files to the local repository

```
data _null_;  
  RC=GITFN_COMMIT("C:\tmp\git_phuse",  
    "HEAD",  
    "Frank Biedermann",  
    "frank.biedermann@example.com",  
    "first commit");  
run;
```



PUSH UND PULL

The function GITFN_PUSH sends all committed files from a local repository to a remote GitHub repository.

Example 1: User/Password Authentication

```
data _null_;  
RC=GITFN_PUSH("C:\tmp\git_phuse",  
"Frank.Biedermann@example.com",  
"GitHub password");  
run;
```

Example 2: Using Secure Shell (SSH)

```
data _null_;  
RC=GITFN_PUSH("C:\tmp\git_phuse",  
"SSH user",  
"password for the SSH key",  
"SSH public key",  
"SSH private key");  
);  
run;
```

Remote Repository
GIT



Branch

PUSH UND PULL

The function GITFN_PULL pulls changes from the remote repository into the local repository.

Example 1: Public repositories

```
data _null_;  
  RC=GITFN_PULL("C:\tmp\git_phuse");  
run;
```

Example 2: User/Password Authentication

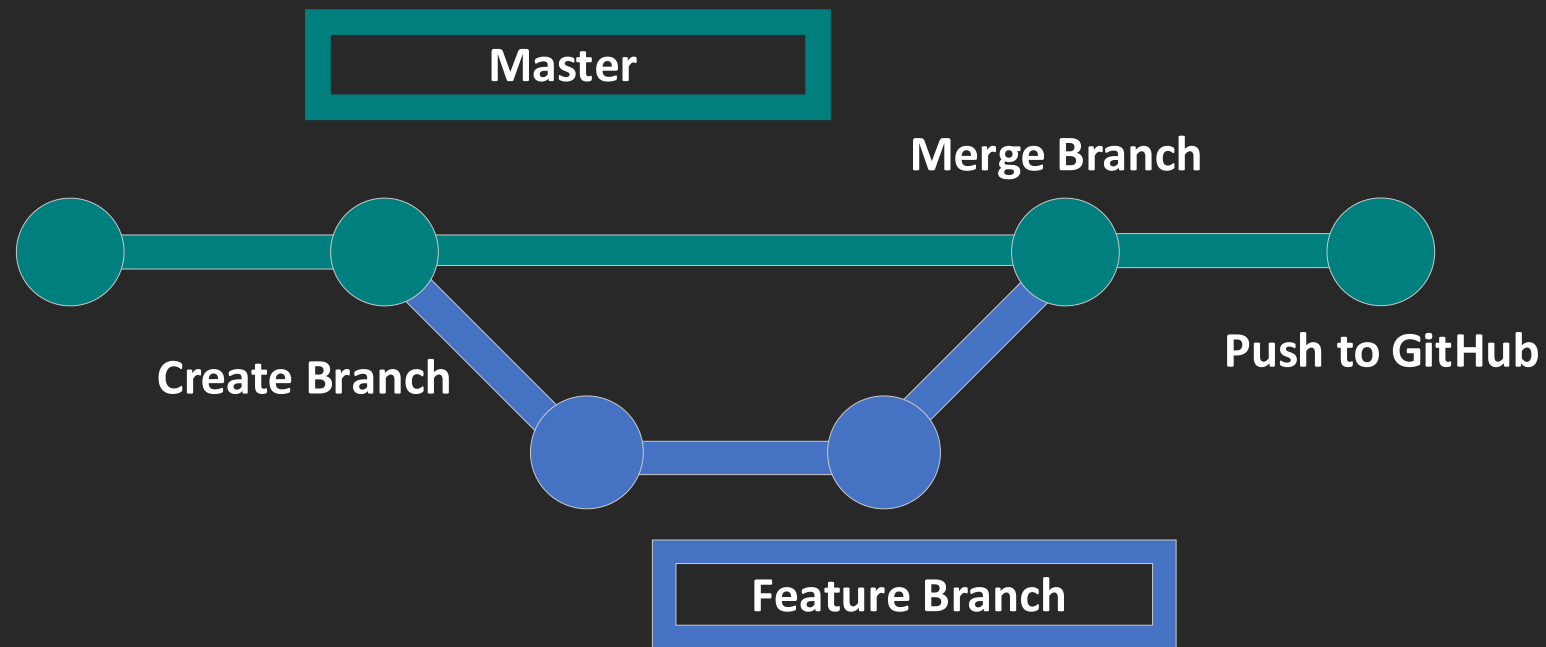
```
data _null_;  
  RC=GITFN_PULL("C:\tmp\git_phuse",  
    "Frank.Biedermann@example.com",  
    "GitHub password");  
run;
```

Example 3: Public repositories

```
data _null_;  
  RC=GITFN_PULL("C:\tmp\git_phuse",  
    "SSH user",  
    "password for the SSH key",  
    "SSH public key",  
    "SSH private key");  
  );  
run;
```

BRANCHES

In simple words, a branch in Git is an individual project within a Git repository. Several branches can contain the same folders and files expect of some code line changes. Or these can contain completely different files and folders.



BRANCHES

The function GITFN_NEW_BRANCH creates a new branch in the local repository.

```
data _null_;  
  rc=GITFN_NEW_BRANCH("C:\tmp\git_phuse-1",  
    "1d5b505f0381f90f664e6ffda9fd28e34e43fcff",  
    "phuse2019-1", 1);  
run;
```

GITFN_COMMIT_GET returns the following attribute from a commit object in the local repository: COMMIT_ID, AUTHOR, EMAIL, MESSAGE, PARENT_IDS, TIME

```
data _null_; length commit_id $200;  
  rc=GITFN_COMMIT_GET(1,"C:\tmp\git_phuse", "id", commit_id);  
  put commit_id=;  
run;
```

```
SAS log:  
commit_id=1d5b505f0381f90f664e6ffda9fd28e34e43fcff
```

BRANCHES

The function GITFN_CO_BRANCH checks a branch out to the local repository. You can use the function also to switch between branches.

```
data _null_;  
  RC=GITFN_CO_BRANCH("C:\tmp\git_phuse", "phuse-1");  
run;
```

GITFN_MRG_BRANCH merges a GitHub branch with a checked-out branch. The merge result is stored in the local repository.

```
data _null_;  
  rc=GITFN_MRG_BRANCH(  
    "C:\tmp\git_phuse",  
    "master",  
    "Frank Biedermann",  
    "Frank.Biedermann@example.com");  
run;
```

BRANCHES

The function GITFN_DEL_BRANCH deletes a branch in the local repository.

```
data _null_;  
rc=GITFN_DEL_BRANCH(  
    "C:\tmp\git_phuse",  
    "phuse-1");  
run;
```

MORE FUNCTIONS

Status of repository files

Description	Function name
Get status objects	GITFN_STATUS
Return attributes from status objects	GITFN_STATUS_GET
Clear status objects	GITFN_STATUSFREE

Get number of committed objects

Description	Function name
Get commit log	GITFN_COMMIT_LOG
Get commit objects	GITFN_COMMIT_GET
Clear commit objects	GITFN_COMMITFREE

MORE FUNCTIONS

Compare two commits

Description	Function name
Return the number of changes	GITFN_DIFF
Return attributes from a diff object	GITFN_DIFF_GET
Clear diff record	GITFN_DIFF_FREE

GIT IN SAS STUDIO 3.8

Snippets

Libraries

File Shortcuts

Git Repository

Local

Commit

git_phuse

git_phuse

master

Pull

Push

History

Message	ID	Auth
origin/master first commit	0d15a34	Fran
first commit	cf70de6	Fran
first commit	5273999	Fran
first commit	1d5b505	Fran
first commit	9ab67b4	Fran
first commit	7b9ed32	Fran
first commit	970eb84	Fran
first commit	04f1838	Fran
first commit	765e6c1	Fran
first commit	f35f671	Fran
Initial commit	8e68ce8	Fran

