



PARSHVANATH CHARITABLE TRUST'S
A. P. SHAH INSTITUTE OF TECHNOLOGY

Department of Information Technology

(NBA Accredited)



Department of Information Technology

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Experiment No. 02

Aim: To perform installation of Git and work on local and remote Git repositories.

STEP1: You need to setup Git on your local machine, as follows:

```
Activities Terminal Jul 18 08:33
root@vora: /home/apsit/git-shravanis

apsit@vora:~$ mkdir git-shravanis
apsit@vora:~$ ls
'i blank.docx'  8_Dharmendra  DOCKERHUB.deb  'Experiment list(1).docx'  git-shravan1  proj_terrF  sonal.odt  yadnika
29_dl          aws           Downloads      'Experiment list.docx'    git-shravanis  Purav      workspill

apsit@vora:~$ cd Desktop
bash: cd: Desktop: No such file or directory
apsit@vora:~$ cd git-shravanis
apsit@vora:~/git-shravanis$ ls
apsit@vora:~/git-shravanis$ pwd
/home/apsit/git-shravanis
```

STEP2: To update all local package index for ubuntu:

```
apsit@vora:~/git-shravanis$ sudo su
[sudo] password for apsit:
root@vora:/home/apsit/git-shravanis# apt update
Ign:1 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:2 https://pkg.jenkins.io/debian-stable binary/ Release [2,044 B]
Get:3 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Err:3 https://pkg.jenkins.io/debian-stable binary/ Release.gpg
  The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 5BA31D57EF5975CA
Get:4 https://dl.google.com/linux/chrome/deb stable InRelease [1,825 B]
Hit:5 https://deb.nodesource.com/node_18.x nodistro InRelease
Err:4 https://dl.google.com/linux/chrome/deb stable InRelease
  The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 32EE5355A6BC6E42
Get:6 http://ppa.launchpad.net/apandada1/brightness-controller/ubuntu focal InRelease [18.3 kB]
Hit:7 http://security.ubuntu.com/ubuntu focal-security InRelease
Hit:8 http://in.archive.ubuntu.com/ubuntu focal InRelease
Hit:9 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease
Err:6 http://ppa.launchpad.net/apandada1/brightness-controller/ubuntu focal InRelease
  The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 9E776C57AA2476B8 NO_PUBKEY A507B28BA7803E3B
Hit:10 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease
Reading package lists... Done
M: An error occurred during the signature verification. The repository is not updated and the previous index files will be used. GPG error: https://pkg.jenkins.io/debian-stable
  binary/ Release: The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 5BA31D57EF5975CA
E: An error occurred during the signature verification. The repository is not updated and the previous index files will be used. GPG error: https://dl.google.com/linux/chrome/d
  eb stable InRelease: The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 32EE5355A6BC6E42
M: GPG error: http://ppa.launchpad.net/apandada1/brightness-controller/ubuntu focal InRelease: The following signatures couldn't be verified because the public key is not avail
  able: NO_PUBKEY 9E776C57AA2476B8 NO_PUBKEY A507B28BA7803E3B
E: The repository 'http://ppa.launchpad.net/apandada1/brightness-controller/ubuntu focal InRelease' is not signed.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
root@vora:/home/apsit/git-shravanis#
```

STEP3: Download & Install: #apt-get install git

```
Activities Terminal Jul 18 08:34
root@vora:/home/apsit/git-shravanis

eb stable InRelease: The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 32EE5355A6BC6E42
M: GPG error: http://ppa.launchpad.net/apandada1/brightness-controller/ubuntu focal InRelease: The following signatures couldn't be verified because the public key is not avail
  able: NO_PUBKEY 9E776C57AA2476B8 NO_PUBKEY A507B28BA7803E3B
E: The repository 'http://ppa.launchpad.net/apandada1/brightness-controller/ubuntu focal InRelease' is not signed.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
root@vora:/home/apsit/git-shravanis# apt-get install git
Reading package lists... Done
Building dependency tree
Reading state information... Done
git is already the newest version (1:2.25.1-1ubuntu3.14).
The following packages were automatically installed and are no longer required:
  gyp libjs-inherits libjs-is-typedarray libjs-psl libjs-typedarray-to-buffer libuv1-dev node-abbrev node-ajv node-ansi node-ansi-align node-ansi-regex node-ansi-styles
node-anisstyles node-aproba node-archy node-are-we-there-yet node-asap node-assert-plus node-assert node-async node-asyncify node-aws-sign2 node-aws4 node-balanced-match
node-bcrypt-pbkdf node-bl node-bluebird node-boxen node-brace-expansion node-builtin-modules node-builtins node-cacache node-call-limit node-camelcase node-caseless
node-chalk node-chownr node-ci-info node-cliui node-clone node-co node-color-convert node-color-name node-colors node-columnify node-combined-stream
node-concat-map node-concat-stream node-config-chain node-configstore node-console-control-strings node-copy-concurrently node-core-util-is node-cross-spawn
node-crypt-random-string node-cyclist node-dashdash node-debug node-decamelize node-decompress-response node-deep-extend node-defaults node-define-properties
node-delayed-stream node-delegates node-detect-indent node-detect-newline node-dot-prop node-duplexer3 node-duplexify node-ecc-jsbn node-editor node-encoding
node-end-of-stream node-errno node-es6-promise node-escape-string-regexp node-execa node-extend node-extend-shallow node-fast-deep-equal node-find-up
node-flush-write-stream node-forever-agent node-form-data node-from2 node-fs-vacuum node-fs-write-stream-atomic node-fs.realpath node-function-bind node-gauge node-genfun
node-get-caller-file node-get-stream node-getpass node-glob node-got node-graceful-fs node-har-schema node-har-validator node-has-flag node-has-symbol-support-x
node-has-to-string-tag-x node-has-unicode node-hosted-git-info node-http-signature node-https node-https-proxy-agent node-iferr node-inflight node-inherits
node-ini node-invert-kv node-ip node-ip-regex node-is-npm node-is-obj node-is-object node-is-path-inside node-is-platin-obj node-is-retry-allowed node-is-stream
node-is-typedarray node-isarray node-isexe node-issstream node-isurl node-jsbn node-json-parse-better-errors node-json-schema node-json-schema-traverse
node-json-stable-stringify node-json-stringify-safe node-jsonify node-jsonparse node-jsonstream node-jsprim node-latest-version node-lazy-property node-lcid node-libnp
node-locate-path node-lockfile node-lodash node-lodash-packages node-lowercase-keys node-lru-cache node-make-dir node-men node-mime node-mime-types node-mimic-fn
node-mimic-response node-minimatch node-minimist node-misistippl node-mkdirp node-move-concurrently node-ms node-mute-stream node-nopt node-normalize-package-data
node-npm-bundled node-npm-package-arg node-npm-run-path node-npmlog node-number-is-nan node-oauth-sign node-object-assign node-once node-opener node-os-locale
node-os-tpmdir node-oseenv node-p-cancelable node-p-finally node-p-is-promise node-p-limit node-p-locate node-p-timeout node-package-json node-parallel-transform
node-path-exists node-path-is-absolute node-path-is-inside node-performance-now node-pify node-prepend-http node-process-nexttick-args node-promise-inflight
node-promise-retry node-pronard node-pronard node-prr node-pseudomap node-psl node-pump node-pumpify node-punycode node-qs node-qw node-rc node-read
node-read-package-json node-readable-stream node-registry-auth-token node-registry-url node-request node-require-directory node-require-main-filename node-resolve
node-resolve-from node-retry node-rimraf node-run-queue node-safe-buffer node-senver node-senver-diff node-set-blocking node-sha node-shebang-command node-shebang-regex
node-signal-exit node-slash node-slide node-sorted-object node-spdx-correct node-spdx-exceptions node-spdx-expression-parse node-spdx-license-ids node-sshpk node-ssri
node-stream-each node-stream-iterate node-stream-shift node-strict-uri-encode node-string-decoder node-string-width node-strip-eof node-strip-ansi node-strip-ansi-comments
node-supports-color node-tar node-term-size node-text-table node-through node-through2 node-timed-out node-tough-cookie node-tunnel-agent node-tweetnacl node-typedarray
node-uuid node-validate-npm-package-name node-validate-npm-package-name node-verify node-which node-which-module node-wide-align node-widest-line
node-wrap-ansi node-wrapify node-write-file-atomic node-xdg-basedir node-xmldom node-y18n node-yallist node-yargs node-yargs-parser python-pkg-resources
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 63 not upgraded.
root@vora:/home/apsit/git-shravanis#
```

STEP4: VERSION:

```
0 upgraded, 0 newly installed, 0 to remove and 63 not upgraded.
root@vora:/home/apsit/git-shravanis# git --version
git version 2.25.1
root@vora:/home/apsit/git-shravanis#
```

STEP5:USERNAME AND EMAIL:

```
git version 2.25.1
root@vora:/home/apsit/git-shravanis# git config --global user.name "shravanisawant813"
root@vora:/home/apsit/git-shravanis# git config --global user.email "24204018@apsit.edu.in"
root@vora:/home/apsit/git-shravanis#
```

STEP6:CONFIGURATION:

```
root@vora:/home/apsit/git-shravanis# git config --global user.email 24204018@apsit.edu.in
root@vora:/home/apsit/git-shravanis# git config --list
user.name=shravanisawant813
user.email=24204018@apsit.edu.in
root@vora:/home/apsit/git-shravanis#
```

STEP7:INITIALISATION

```
user.email=24204018@apsit.edu.in
root@vora:/home/apsit/git-shravanis# git init
Initialized empty Git repository in /home/apsit/git-shravanis/.git/
root@vora:/home/apsit/git-shravanis#
```

STEP8: ALTR

```
root@vora:/home/apsit/git-shravanis# ls -ltr
total 20
drwxrwxr-x 3 apsit apsit 4096 Jul 18 08:48 .
drwxr-xr-x 7 root root 4096 Jul 18 08:48 .git
drwxr-xr-x 46 apsit apsit 12288 Jul 18 08:48 ..
root@vora:/home/apsit/git-shravanis#
```

STEP9: CLONE

```
drwxr-xr-x 46 apsit apsit 12288 Jul 18 08:48 ..
root@vora:/home/apsit/git-shravanis# git clone https://github.com/shravanisawant819/gitdemo18072025.git
Cloning into 'gitdemo18072025'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 895 bytes | 447.00 KiB/s, done.
root@vora:/home/apsit/git-shravanis#
```

```
unpacking objects: 100% (3/3), 893 bytes | 447.00 Kib/s, done
root@vora:/home/apsit/git-shravanis# ls -ltr
total 4
drwxr-xr-x 3 root root 4096 Jul 18 08:50 gitdemo18072025
root@vora:/home/apsit/git-shravanis#
```

```
root@vora:/home/apsit/git-shravanis# cd gitdemo18072025
root@vora:/home/apsit/git-shravanis/gitdemo18072025# ls
README.md
root@vora:/home/apsit/git-shravanis/gitdemo18072025# cat README.md
# gitdemo18072025
setup of git experiment 18072025
root@vora:/home/apsit/git-shravanis/gitdemo18072025#
```

STEP10: STATUS

```
nothing added to commit but untracked files present (use "git add" to track)
root@vora:/home/apsit/git-shravanis/gitdemo18072025# git add helloworld.py
root@vora:/home/apsit/git-shravanis/gitdemo18072025# git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   helloworld.py

r Google Chrome e/apsit/git-shravanis/gitdemo18072025#
```

```
nothing added to commit but untracked files present (use "git add" to track)
root@vora:/home/apsit/git-shravanis/gitdemo18072025# git add helloworld.py
root@vora:/home/apsit/git-shravanis/gitdemo18072025# git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   helloworld.py

r Google Chrome e/apsit/git-shravanis/gitdemo18072025#
```

STEP11: COMMIT

```
root@vora:/home/apsit/git-shravanis/gitdemo18072025# git commit -m "first file added helloworld.py"
[main 7bf38fe] first file added helloworld.py
 1 file changed, 3 insertions(+)
 create mode 100644 helloworld.py
root@vora:/home/apsit/git-shravanis/gitdemo18072025#
```


STEP12: USERNAME PASSWORD

```
root@vora:/home/apsit/git-shravanis/gitdemo18072025# git push origin main
Username for 'https://github.com': shravanisawant813
Password for 'https://shravanisawant813@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently recommended modes
of authentication.
fatal: Authentication failed for 'https://github.com/shravanisawant813/gitdemo18072025.git/'
root@vora:/home/apsit/git-shravanis/gitdemo18072025#
```

STEP13: PULL AND PUSH

```
total 8
-rw-r--r-- 1 root root 51 Jul 18 08:50 README.md
-rw-r--r-- 1 root root 55 Jul 18 08:58 helloworld.py
root@vora:/home/apsit/git-shravanis/gitdemo18072025#
```

The screenshot shows a web browser displaying the GitHub repository page for 'gitdemo18072025' by user 'shravanisawant819'. The repository is public and has 2 commits. The commit history shows two commits: 'Initial commit' (43 minutes ago) and 'Create mynewfile18072025' (2 minutes ago). The README file is visible, titled 'gitdemo18072025' with the content 'setup of git experiment 18072025'. The right sidebar shows repository statistics: 0 stars, 0 watching, and 0 forks. The footer of the page includes the GitHub logo and copyright information for 2025.

STEP 14: GIT LOG

```
Git: command not found
root@vora:/home/apsit/git-shravanis/gitdemo18072025# git log
commit 7bf38fe74f3a597388d3e4af620f378b6dfc90fd (HEAD -> main)
Author: shravanisawant813 <24204018@apsit.edu.in>
Date:   Fri Jul 18 09:03:53 2025 +0530

    first file added helloworld.py

commit 34143641d3b2afd5bde6734e9c8293eff01d194a (origin/main, origin/HEAD)
Author: shravanisawant819 <24204018@apsit.edu.in>
Date:   Fri Jul 18 08:47:03 2025 +0530

    Initial commit
root@vora:/home/apsit/git-shravanis/gitdemo18072025#
```

STEP 15: git show

```
root@vora:/home/apsit/git-shravanis/gitdemo18072025# git show 7bf38fe74f3a597388d3e4af620f378b6dfc90fd
commit 7bf38fe74f3a597388d3e4af620f378b6dfc90fd (HEAD -> main)
Author: shravanisawant813 <24204018@apsit.edu.in>
Date:   Fri Jul 18 09:03:53 2025 +0530

    first file added helloworld.py

diff --git a/helloworld.py b/helloworld.py
new file mode 100644
index 00000000..30679ca
--- /dev/null
+++ b/helloworld.py
@@ -0,0 +1,3 @@
+num = 5
+print("Factorial of",num,"is",
+factorial(num))
root@vora:/home/apsit/git-shravanis/gitdemo18072025#
```

```
6505683 (HEAD -> main) Merge branch 'main' of https://github.com/s
tdemo11072025 into main
c07059b (origin/main, origin/HEAD) Create mynewfile
c62d707 Revert "Initial commit"
cc225cc first file added
73e6d61 Initial commit
```

```
Date: Thu Jul 18 17:36:17 2025 +0000

first file added

diff --git a/factorial.py b/factorial.py
new file mode 100644
index 0000000..87338e7
--- /dev/null
+++ b/factorial.py
@@ -0,0 +1,11 @@
+num = int(input("Enter a number: "))
+factorial = 1
+
+if num < 0:
+    print("Factorial does not exist for negative numbers")
+elif num == 0:
+    print("The factorial of 0 is 1")
+else:
+    for i in range(1, num + 1):
+        factorial = factorial * i
```

CONCLUSION:

Installing Git provides a powerful tool for version control and collaborative software development. By working on local repositories, users can efficiently track changes and manage project history. Connecting to remote repositories enables seamless collaboration with others, facilitating code sharing and integration. Mastering Git commands and workflows enhances productivity and project organization. Overall, Git is essential for modern development practices, ensuring robust code management and teamwork.