

???

1. ?? ?? ??

```
.git/
├─ HEAD                ← 当前 HEAD 指针 (指向: ref: refs/heads/main)
├─ config              ← Git 配置文件
├─ description        ← 仓库描述文件
├─ index              ← 本地索引文件 (包含暂存区内容)
├─ objects/           ← Git 对象存储 (blob, tree, commit, tag)
│ └─ xx/xxxx...      ← SHA-1 哈希值
│   └─ pack/         ← 打包后的对象 (.pack, .idx)
├─ refs/              ← 分支、远程分支、标签
│ └─ heads/          ← 本地分支 (main, feature)
│   └─ remotes/      ← 远程分支 (origin/main)
│     └─ tags/       ← 本地标签
├─ logs/              ← HEAD 和 refs 的日志 (reflog)
│ └─ HEAD            ← HEAD 的日志
│   └─ refs/         ← refs 的日志
├─ info/              ← 排除文件列表
└─ hooks/             ← 钩子脚本
```

2. ? ?? ?? ??

? .git/HEAD

- 本地 Git 仓库的 HEAD 指针
- 指向 ref: refs/heads/main 分支
- HEAD → 本地分支 → 本地对象

? .git/objects/

- Git `sha1` : `40` `hex` / `hex` / `hex` **SHA-1** `hex` `hex` `hex`
- `git` `add` + `git` `commit`

```
.git/objects/
├─ a7/...
├─ d1/...
└─ pack/ ← packfile hex hex
```

? `.git/refs/`

- `git` / `hex` `hex` `hex` `hex` `hex`

```
.git/refs/heads/main → a1b2c3d4e5 (hex hex)
```

? `.git/logs/`

- `git` `reflog` `hex` `hex` `hex` `hex`
- HEAD, branches, remotes `hex` `hex` `hex`

? `.git/index`

- `hex` `hex` (index) `hex` `hex` `hex` `hex` `hex`
- `git` `add` → index `hex` `hex` → `git` `commit` `hex` `hex`

? `.git/hooks/`

- `hex` / `hex` / `hex` `hex` `hex` `hex` `hex`

```
pre-commit, post-commit, pre-push hex
```

3. ?? ??

```
hex Working Directory
  ↓ git add
hex.git/index (Staging Area)
  ↓ git commit
hex.git/objects/ (hex, hex, hex hex)
```

↓ 000 000 00

00.git/refs/heads/main

↑ HEAD → 00 000 00

??

0000	00
HEAD	00 000 00 000 000
refs	000 /00 → 00 00
objects	00 000 (SHA-1 00)000
index	0000 00 00
logs	HEAD 0 000 00 00 (reflog)
hooks	Git 000 00 0 0000 0000

Revision #4

Created 28 May 2025 08:08:15 by Dain

Updated 28 May 2025 08:20:08 by Dain