Find

Here are 20 **scenario-based questions** on the `find` command, including practical tasks like finding the largest files, excluding executables, and searching for log files recursively with date filters:

---

1. Scenario: Find Files by Name in a Directory

Question: How would you find all files named "config.txt" in the `/home/user` directory and its subdirectories?

Solution:

Use the `-name` option for a recursive search.

```
1   find /home/user -name "config.txt"
```

---

2. Scenario: Find Files by Extension

Question: How can you find all `.log` files in the `/var/log` directory?

Solution:

Use the `-name` option with a wildcard to search for specific file extensions.

```
1   find /var/log -name "*.log"
```

---

3. Scenario: Find Files Larger Than a Certain Size

Question: How would you find all files larger than 100 MB in the `/data` directory?

Solution:

Use the `-size` option to specify file sizes.

```
1   find /data -size +100M
```

---

4. Scenario: Find Files Modified in the Last 7 Days

Question: How can you find all files in the `/home` directory that have been modified in the last 7 days?

Solution:

Use the `-mtime` option for modification time.

```
1   find /home -mtime -7
```

---

5. Scenario: Find Files Older Than 30 Days

Question: You need to delete files in the `/tmp` folder that are older than 30 days. How would you locate them?

Solution:

Use `-mtime` to find older files.

```
1  find /tmp -mtime +30
```

---

6. Scenario: Find Files Owned by a Specific User

Question: How can you find all files owned by the user "admin" in the `/srv` directory?

Solution:

Use the `-user` option to search by file owner.

```
1  find /srv -user admin
```

---

7. Scenario: Find Executable Files

Question: How do you find all executable files in the `/usr/bin` directory?

Solution:

Use the `-perm` option to match executable permissions.

```
1  find /usr/bin -perm /a+x
```

---

8. Scenario: Find and Delete Empty Files

Question: How would you find all empty files in `/var/tmp` and delete them?

Solution:

Use the `-empty` option and execute `rm` on the results.

```
1  find /var/tmp -type f -empty -exec rm {} \\;
```

---

9. Scenario: Find Largest Files That Are Not Executables

Question: How can you find the 5 largest files in `/var` that are **not** executable files?

Solution:

Use the `-perm` option to exclude executable files and `-type f` for regular files, combined with `ls` to sort by size.

```
1  find /var -type f ! -perm /a+x -exec ls -lh {} + | sort -k 5 -rh | head -n 5
```

---

10. Scenario: Find Files by Size and Name

Question: How would you find all files with a `.log` extension that are larger than 50 MB?

Solution:

Use both the `-name` and `-size` options.

```
1  find /path/to/search -name "*.log" -size +50M
```

---

11. Scenario: Exclude Specific Directories from Search

Question: How do you find all `.conf` files in `/etc`, but exclude the `/etc/nginx` directory from the search?

Solution:

Use the `-prune` option to exclude a directory.

```
1  find /etc -path "/etc/nginx" -prune -o -name "*.conf" -print
```

---

12. Scenario: Find Files Modified in a Specific Date Range

Question: You need to find files modified between 10 and 20 days ago. What command would you use?

Solution:

Use the `-mtime` option with a range.

```
1  find /path/to/search -mtime +10 -mtime -20
```

---

13. Scenario: Find Files with Specific Permissions

Question: How would you find all files in `/home/user` with exactly 644 permissions?

Solution:

Use the `-perm` option to match specific permissions.

```
1  find /home/user -perm 644
```

---

14. Scenario: Find Files That Belong to a Specific Group

Question: How would you find all files in `/srv` that belong to the group "developers"?

Solution:

Use the `-group` option.

```
1  find /srv -group developers
```

---

15. Scenario: Find and Remove Files with a Specific Extension

Question: How can you find and delete all `.bak` files in `/var/www`?

Solution:

Use the `-exec` option with `rm`.

```
1  find /var/www -name "*.bak" -exec rm {} \\;
```

---

16. Scenario: Find and Copy Large Files to a Backup Directory

Question: How would you find all files larger than 500 MB in `/data` and copy them to `/backup`?

Solution:

Use the `-size` option and the `-exec` command to copy.

```
1   find /data -size +500M -exec cp {} /backup \\;
```

17. Scenario: Find and List Files with Detailed Information

Question: How can you find all `.sh` files in `/scripts` and list their detailed information (size, permissions, etc.)?

Solution:

Use `-exec` with `ls -l` to get detailed information.

```
1   find /scripts -name "*.sh" -exec ls -l {} \\;
```

18. Scenario: Find the Largest Log Files Recursively, Excluding a Date Range

Question: You need to find the 10 largest `.log` files in `/var/log` that were modified more than 30 days ago. How would you do this?

Solution:

Combine `-name` and `-mtime` options, followed by sorting by size.

```
1   find /var/log -name "*.log" -mtime +30 -exec ls -lh {} + | sort -k 5 -rh | head -n 10
```

19. Scenario: Find Hidden Files

Question: How can you find all hidden files in a user's home directory?

Solution:

Use the `-name` option with a dot (`.`) to match hidden files.

```
1   find /home/user -name ".*"
```

20. Scenario: Combine Find with Grep to Search File Contents

Question: How can you find all `.conf` files in `/etc` and search for the word "timeout" within those files?

Solution:

Use `find` to locate the `.conf` files and combine it with `grep` to search the content.

```
1   find /etc -name "*.conf" -exec grep -H "timeout" {} \\;
```

These questions are designed to test your practical knowledge of the `find` command in different real-world scenarios, which is common in technical interviews.