Here's how to set up accounts and their authentication securely on MySQL for Ubuntu following CIS benchmarks:

Minimize Privileges:

- **Principle of Least Privilege:** Grant users only the minimum privileges required for their specific tasks within the database. Avoid assigning excessive permissions.

Dedicated Users:

- **Avoid Root User:** Do not use the root user for everyday database operations. Create dedicated user accounts with restricted privileges for your applications.

Strong Passwords:

- **Enforce Strong Passwords:** When creating user accounts, enforce strong password policies. Use a combination of upper and lowercase letters, numbers, and special characters. Consider a minimum password length of at least 12 characters.
- **Password Management:** Store passwords securely using a password manager and avoid storing them in plain text.

Authentication Methods:

- **Caching Sha2 or Improved Native Password Plugin:** Use secure authentication plugins like caching_sha2_password or the improved mysql_native_password plugin. These provide stronger encryption compared to older methods.

Additional Security Measures:

- **Account Lockouts:** Consider implementing account lockouts after a certain number of failed login attempts to prevent brute-force attacks.
- **Password Expiration:** Enforce password expiration policies to require users to change their passwords periodically.

Here's an example command to create a secure user account:

SQL

```
CREATE USER 'username'@'localhost' IDENTIFIED BY 'strong_password'
REQUIRE NONE;
GRANT SELECT, INSERT, UPDATE, DELETE ON database.* TO
'username'@'localhost';
FLUSH PRIVILEGES;
```

Explanation:

- This command creates a user named username with access only from the localhost (127.0.0.1).
- strong_password is a placeholder for your actual strong password.
- REQUIRE NONE removes unnecessary privileges like GRANT.
- The GRANT statement assigns specific permissions (SELECT, INSERT, UPDATE, DELETE) for the database to the user.
- FLUSH PRIVILEGES ensures the changes take effect immediately.

Resources:

- MySQL documentation on user accounts and privileges: https://dev.mysql.com/doc/refman/8.3/en/create-user.html
- CIS MySQL Security Benchmarks for Ubuntu (reference other security guides that mention these benchmarks): You can't find the document directly online, but security guides referencing CIS benchmarks might offer details. Try searching for "CIS MySQL Security Benchmarks Ubuntu".

Remember:

- These are general guidelines. Refer to the official CIS MySQL benchmarks for the latest and most detailed security recommendations specific to your Ubuntu version.
- Regularly review and update user accounts and their privileges to ensure they align with changing needs.