Tools Lab Doc

Exp 1: J meter

https://clutch.co/web-developers/resources/how-use-jmeter-test-your-web-application#:~:text=1.-,Create%20a%20Thread%20Group,and%20finally%20%E2%80%9CThread%20Group.%E2%80%9D

What is JMeter?

Apache JMeter is an open-source, 100% pure Java application that load-tests functional behavior and measures performance. JMeter simulates a heavy load to test an app's strength and analyze its overall performance under different load types.

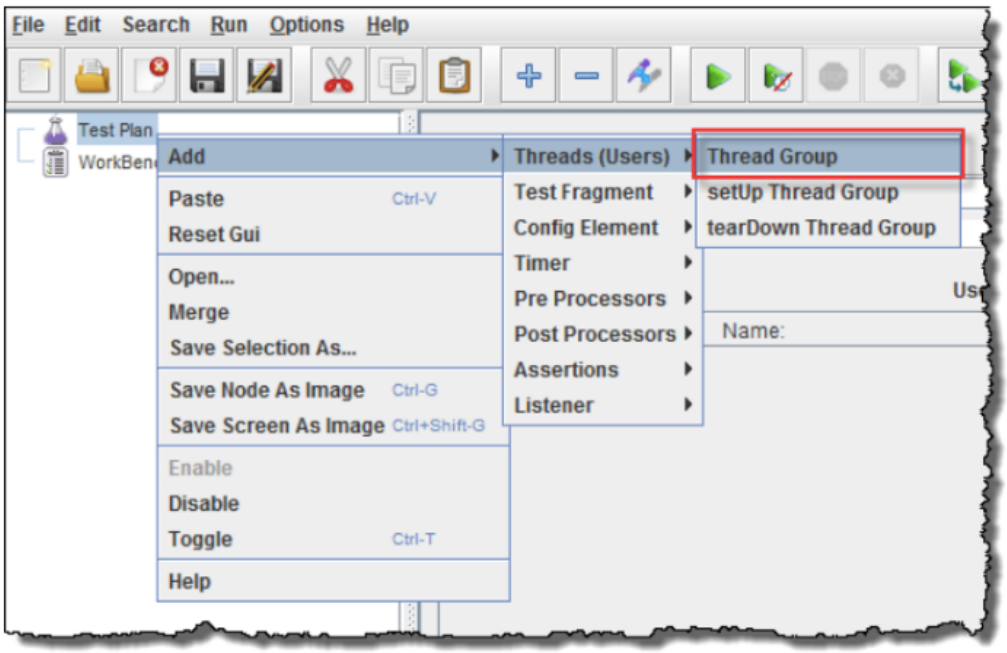
JMeter flexibly tests the dynamic and static resources of an application. Now, you might be wondering what these resources are. Dynamic resources include JSP, Servlets, and AJAX, while static resources are Document Object Model (DOM) elements like JavaScript and HTML.

Steps:

1. Download jmeter binary zip file
   Open ……File name: jmeter.bat
   ……..File type: Windows Batch file
2. Create thread grp

1. Create a Thread Group

Install and launch the JMeter application. Right-click on “Test Plan,” which you will see on the left panel. A test plan is made up of a sequence of test components that determine how the load test will be simulated.



Under “Test Plan,” click “Add,” then “Thread (Users)” and finally “Thread Group.”

You've successfully created a thread group.

3. Add thread properties

2. Add Thread Properties

The Thread Group has 3 key properties that influence the load test. You enter the Thread Properties by navigating to the Thread Group control panel. These properties include:

1. **Number of Threads (or Users)**: The number of users that you want to model accessing the application simultaneously. Set the value to 100, because we want to model 100 users on the Google website.

2. **Loop Count**: The number of times JMeter simulates a user. We will set this to 10.

3. **Ramp-Up Period**: The time it takes in seconds for JMeter to model a new user. We'll set this time to 100 seconds.

4. Add jmeter elements

You've created a Thread and added Thread Properties. Now, it's time to add JMeter elements:

- **HTTP Request Default**: Attach the HTTP Request Defaults element to your thread.

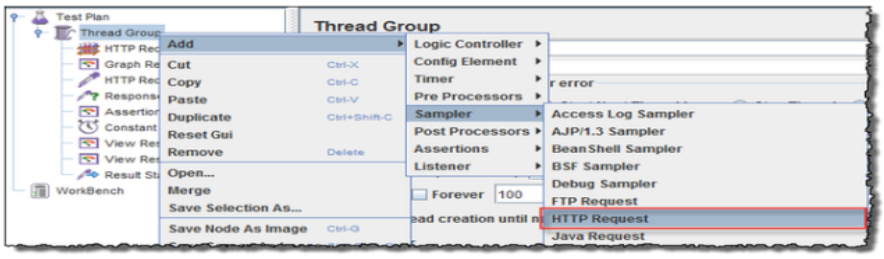
Right click on "Thread Group" and click "Add," "Config Element," and "HTTP Request Defaults." Then, enter the site or server name that you want to access under "Server Name or IP."

Since we want to access www.google.com, we will be writing this in the server name:

This graphic shows what you'd enter into "Server Name of IP" if you were testing Google.

- **HTTP Request Sampler**: Add the HTTP Request Sampler to the Thread Group. Right click on "Thread Group," then click "Add," "Sampler," and "HTTP Request."

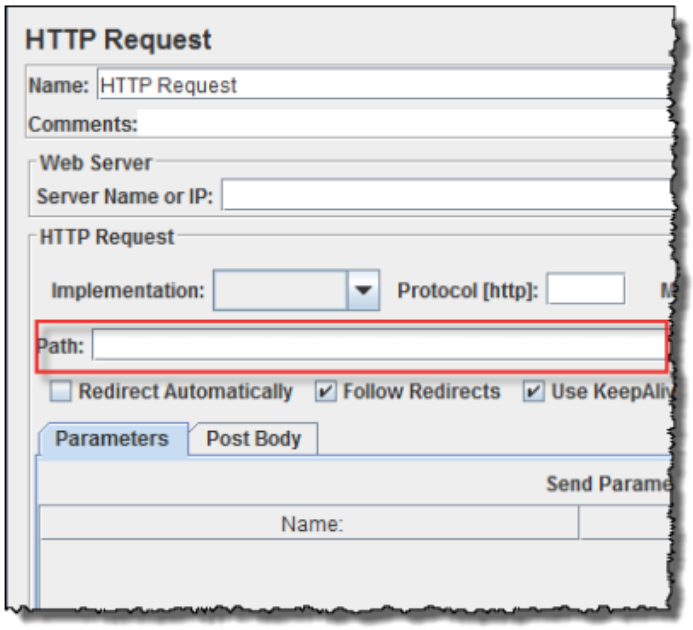
You can see these steps in the screenshot below:



5. Path setting

Upon selecting “HTTP Request,” fill in the URL request you want to send to the server. In our example case, the server is www.google.com.

Now, fill in the item that you want each Thread, or user, to request. Fill in the “Path” field with parameters, which we will set as “calendar.” The final query would be www.google.com/calendar.

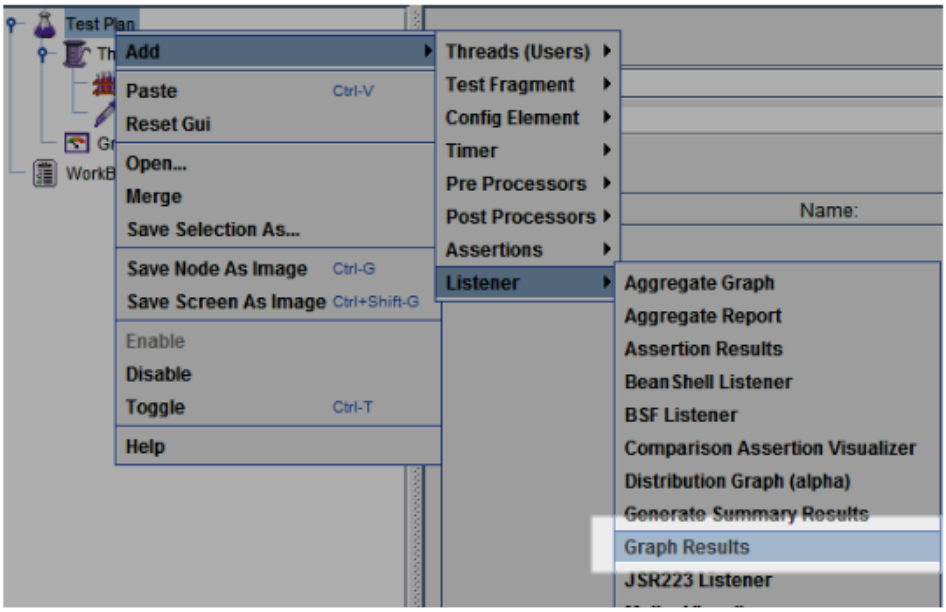


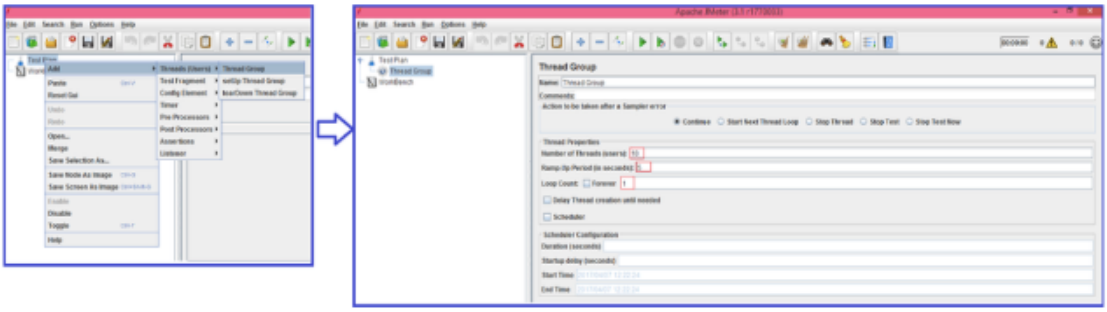
If you don’t enter a parameter in the Path field, then the user will only request www.google.com. You don’t need to specify Google here, because it was already specified in the HTTP Request Defaults item — so just enter “calendar.”

6. Output results:

- **Output Results:** JMeter uses listeners to output the results of a load test. Right click "Thread Group" and click "Add," "Listener," and "Graph Results."

For more clarity, see below:

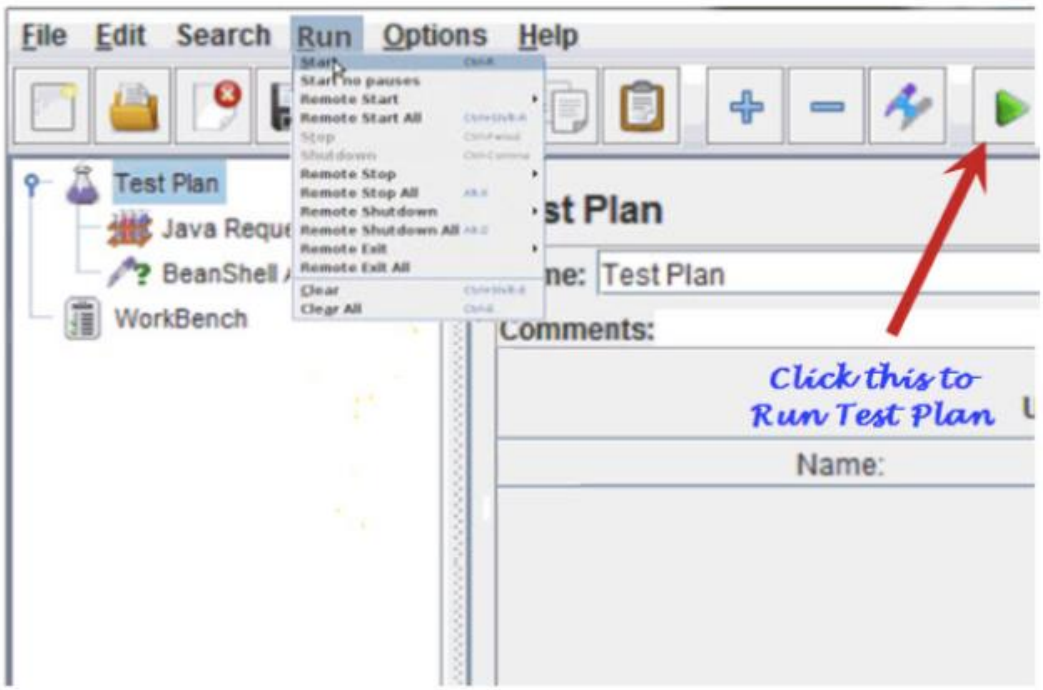




JMeter is a very powerful tool that can show the results in graph format

4. Run the Test

With the basic test plan set up, it's time to run it and see the results. Under "Test Plan" and "Thread Group," click "View Results in Table," then "Run" from the main menu. Click "Start," or the green start arrow below the main menu, to begin the test.



As the test is run, the results appear in the table in real-time. In our example case, 100 users would be accessing the Google server simultaneously, with every user connecting to the server 10 times.

5. Analyze the Results

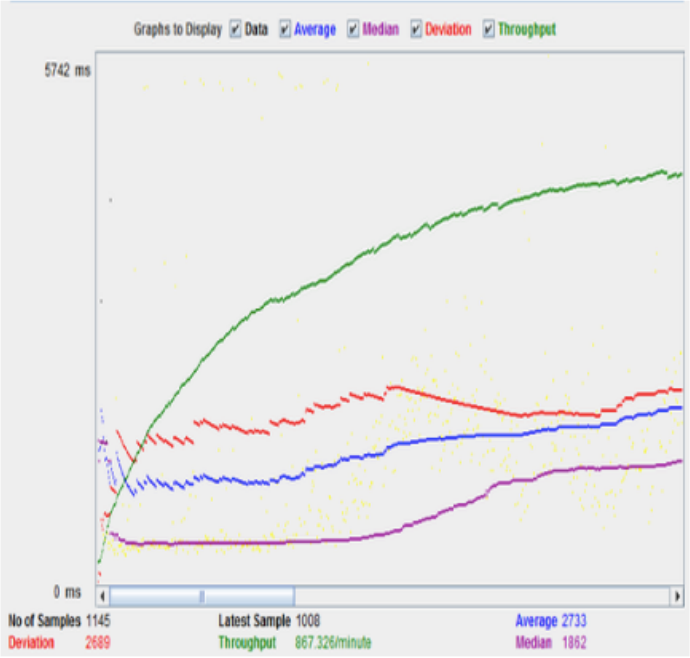
Carefully analyze the graph that you got in real time. Here are the two main factors to consider:

- **Throughput**: The measuring capacity of the server, or how much it can handle. Ideally, this number should be infinite, if not very high.

It's important to note that throughput depends on other factors, such as internet speed, the Google server's current load, and CPU power. These factors continuously change, meaning you won't get the same results every time you run the test.

- **Deviation**: The variation from the average. This number should be zero, or very low.

Here is the output graph we'd get using our Google example:



As you can see, this output report comes in five colors, each of which signifies something different:

- **Black**- the total number of samples sent to the server
- **Blue**- the average of the total number of samples sent to the server
- **Red**- the standard deviation in real-time output
- **Green**- the throughput rate (the number of requests the server handled per minute)
- **Purple**: the median (a number which divides the samples into two equal halves)

Exp 2: Selenium IDE

https://chrome.google.com/webstore/detail/selenium-ide/mooikfkahbdckldjjndioackbalphokd?hl=en

Selenium Record and Playback tool for ease of getting acquainted with Selenium WebDriver.

The new Selenium IDE is designed to record your interactions with websites to help you generate and maintain site automation, tests, and remove the need to manually step through repetitive takes. Features include:

* Recording and playing back tests on Firefox and Chrome.

* Organizing tests into suites for easy management.

* Saving and loading scripts, for later playback.

* Support for Selenium 3.

Steps:

1. Add selenium IDE to chrome
2. Click on the extension to open it
3. Create a new project
4. Insert the required url at the top
5. Start recording
6. Perform necessary steps

7. Stop recording
8. Run all tests
9. Give it a test name
10. All events run successfully

Exp 3: WEKA

Data set**:** **https://datahub.io/machine-learning/breast-cancer#data**

Weka is a collection of machine learning algorithms for data mining tasks. It contains tools for data preparation, classification, regression, clustering, association rules mining, and visualization.

Steps:

1. Download and go to explorer
2. Weka explorer dialog box opens
3. Under preprocess tab , open the required arff file
4. Select all check boxes to include attributes of file
5. Now go to classify
6. Now choose random tree as your classifier
7. Under test options specify your percentage split
8. Click on start
9. Right click on the result and click Visualize tree
10. Successfully created

Link for dataset:

https://datahub.io/machine-learning/breast-cancer#data

Exp 4: Wireshark

Wireshark will help you capture network packets and display them at a granular level. Once these packets are broken down, you can use them for real-time or offline analysis. This tool lets you put your network traffic under a microscope, and then filter and drill down into it, zooming in on the root cause of problems, assisting with network analysis and ultimately network security.

This free Wireshark tutorial will teach you how to capture, interpret, filter and inspect data packets to effectively troubleshoot.

What Is Wireshark?

Wireshark is a network protocol analyzer, or an application that captures packets from a network connection, such as from your computer to your home

office or the internet. Packet is the name given to a discrete unit of data in a typical Ethernet network.

Wireshark is the most often-used packet sniffer in the world. Like any other packet sniffer, Wireshark does three things:

Packet Capture: Wireshark listens to a network connection in real time and then grabs entire streams of traffic – quite possibly tens of thousands of packets at a time.

Filtering: Wireshark is capable of slicing and dicing all of this random live data using filters. By applying a filter, you can obtain just the information you need to see.

Visualization: Wireshark, like any good packet sniffer, allows you to dive right into the very middle of a network packet. It also allows you to visualize entire conversations and network streams.

Steps:

1. Select Ethernet as your capture filter
2. Start capturing
3. In cmd type ping www.google.com
4. Stop capturing
5. On filters choose tcp, tcp.port==80, icmp according to your need.

Exp 5: videoscribe 2d

VideoScribe is an easy-to-use animation software and is best known for it's iconic hand-drawn, whiteboard animation style. With VideoScribe, you can also create 2D and mixed media animations. You don’t need any animation, design, or video editing skills to get started. Simply search the image library, drag and drop across the canvas and you’re on your way to creating exciting custom animations. Access the library of professional-quality animated video and GIF templates for every topic, platform and occasion. Just click to customize and hit publish to share your creation. From template to finished video in under 5 minutes.

VideoScribe is a versatile animation tool for projects big and small, in all fields. From through to growing your - whatever your story and whoever your audience, VideoScribe can get your message remembered.

Steps:

1. Create a new scribe’
2. To perform stack
3. Add on image at bottom right’
4. Select required object
5. Right click and select properties
6. Select properties like color , drawing type(hand), animation time , transparency and so on
7. You can add texts etc
8. Run the created animation
9. Your animated video will be played successfully

Note:

Remember to add images according to required sequence of animations

Don’t copy and paste objects it may not run correctly.

Exp 6: Blender 3d

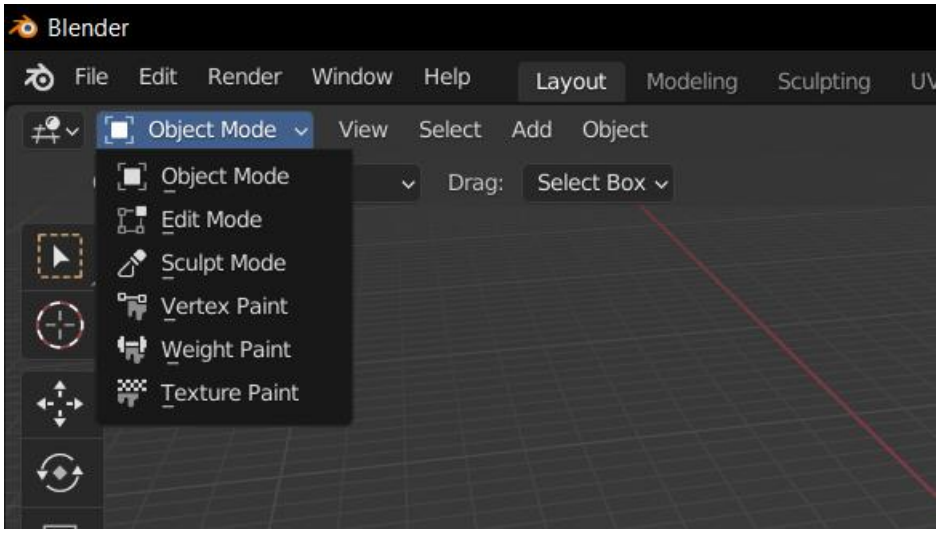
Blender is a free and open-source 3D computer graphics software tool set used for creating animated films, visual effects, art, 3D-printed models, motion graphics, interactive 3D applications, virtual reality, and, formerly, video games. Blender's features include 3D modelling, UV mapping, texturing, digital drawing, raster graphics editing, rigging and skinning, fluid and smoke simulation, particle simulation, soft body simulation, sculpting, animation, match moving, rendering, motion graphics, video editing, and compositing.

Steps:

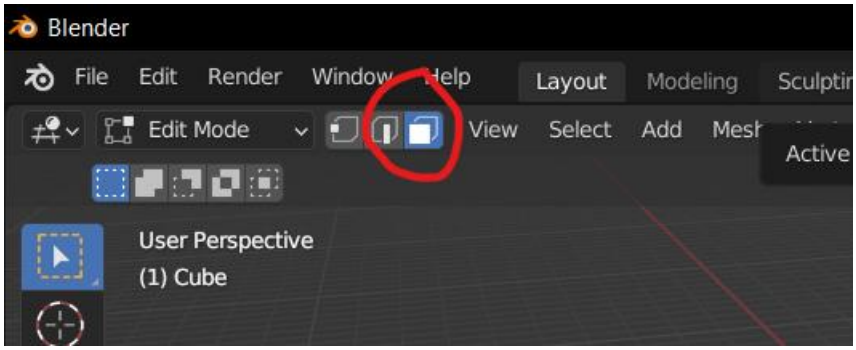
1. Select the object and click on transform mode

And transform your object according to your record size by dragging x y z lines

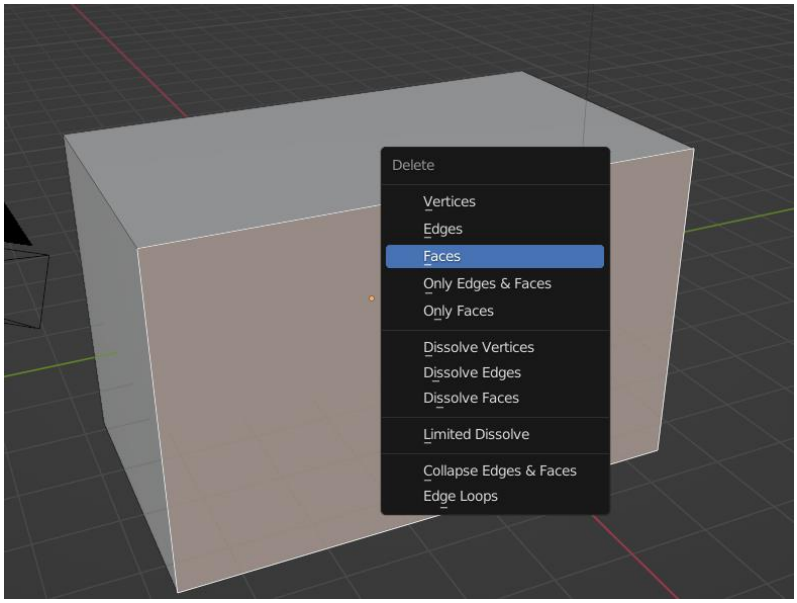
2. Click on edit mode



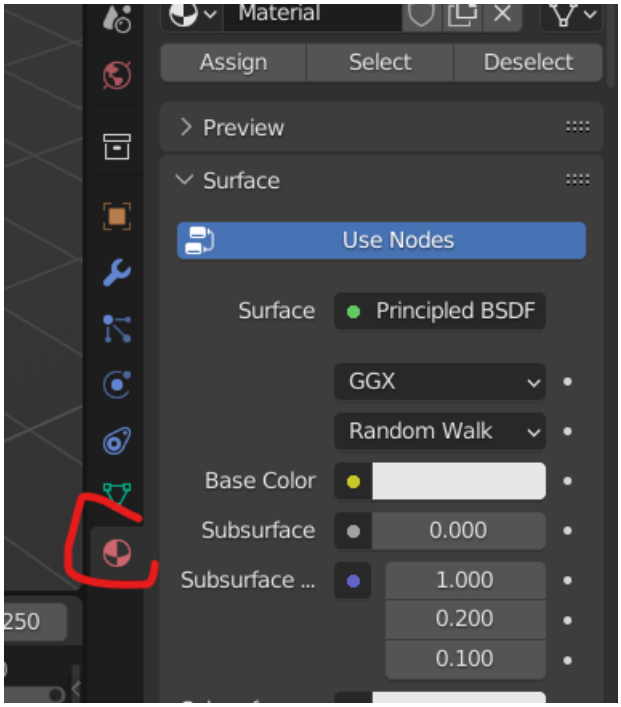
3. **To select faces of cube use this icon**



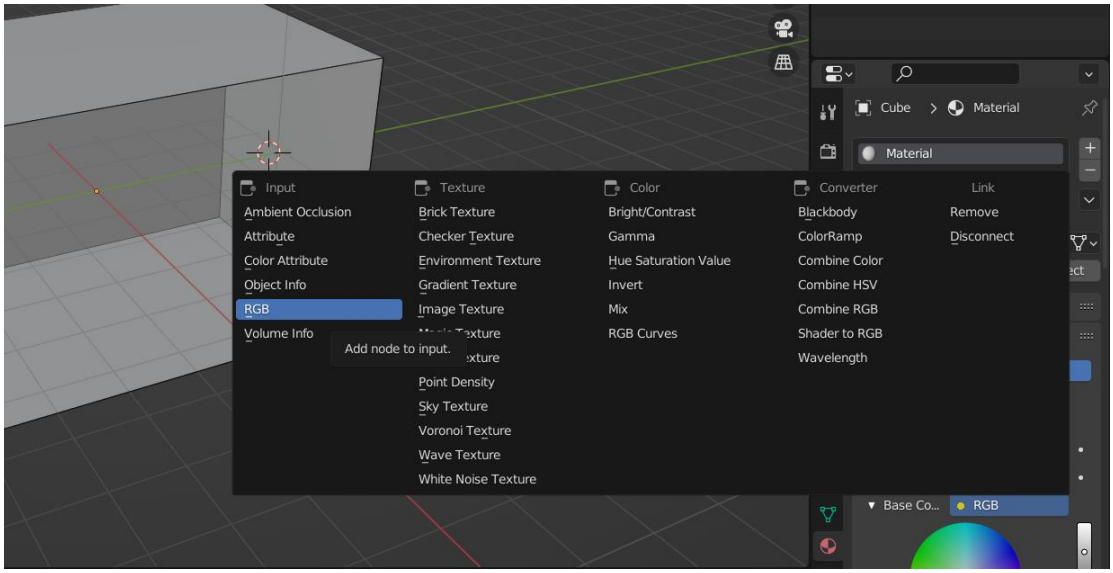
4. **Click the required face and click delete from keyboard…delete option will appear click on delete face**



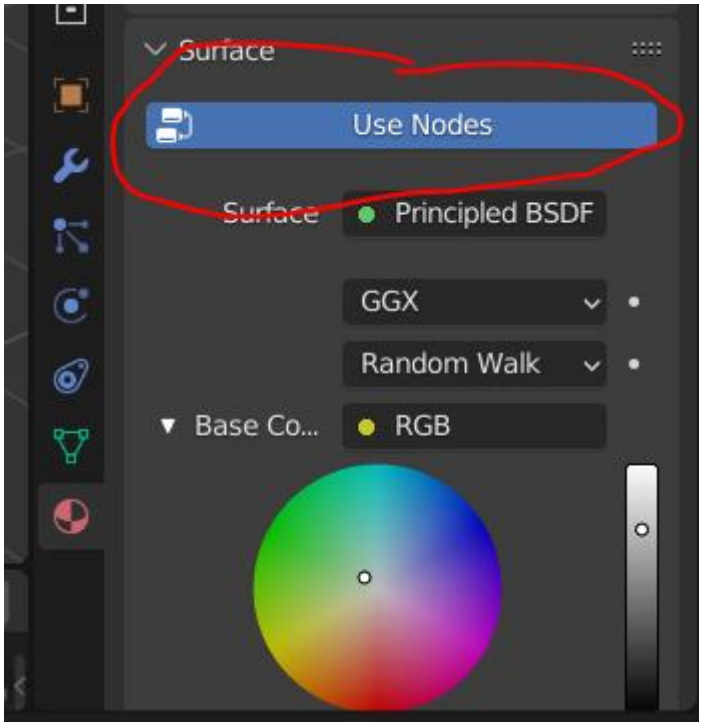
5. **Now again change the object mode and select the object**
6. **Under materials icon on right set base color**

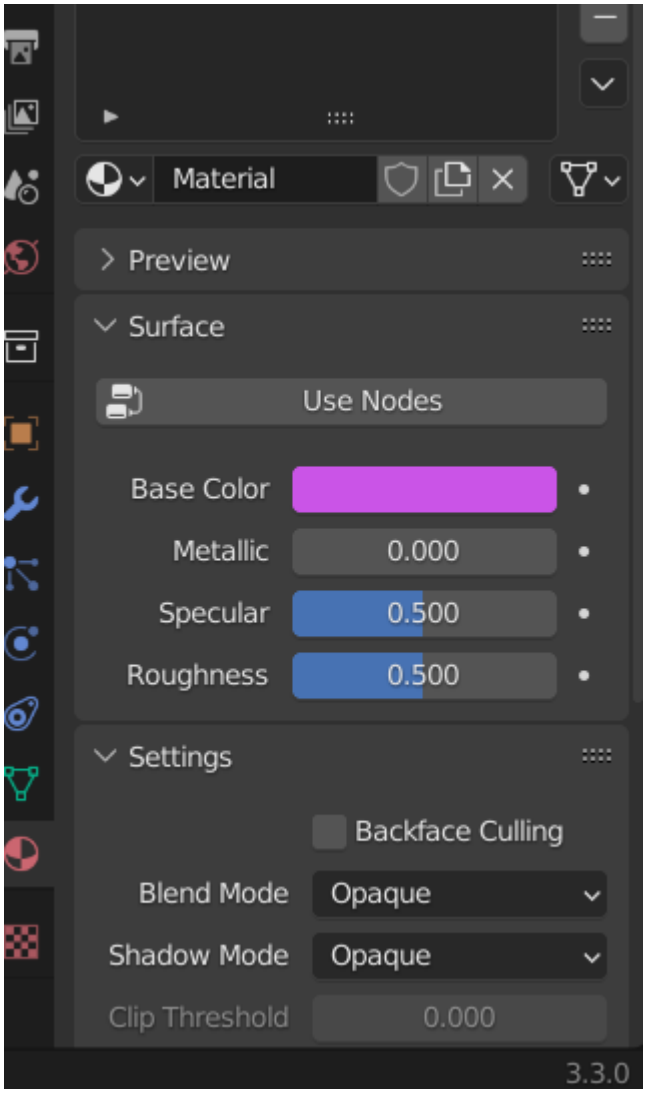


7. **Click on the dot near base color and set RGB**



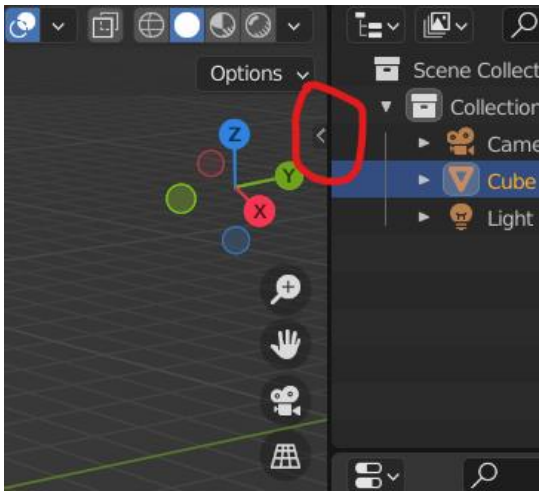
8. Click on use Nodes and set RGB color near base color





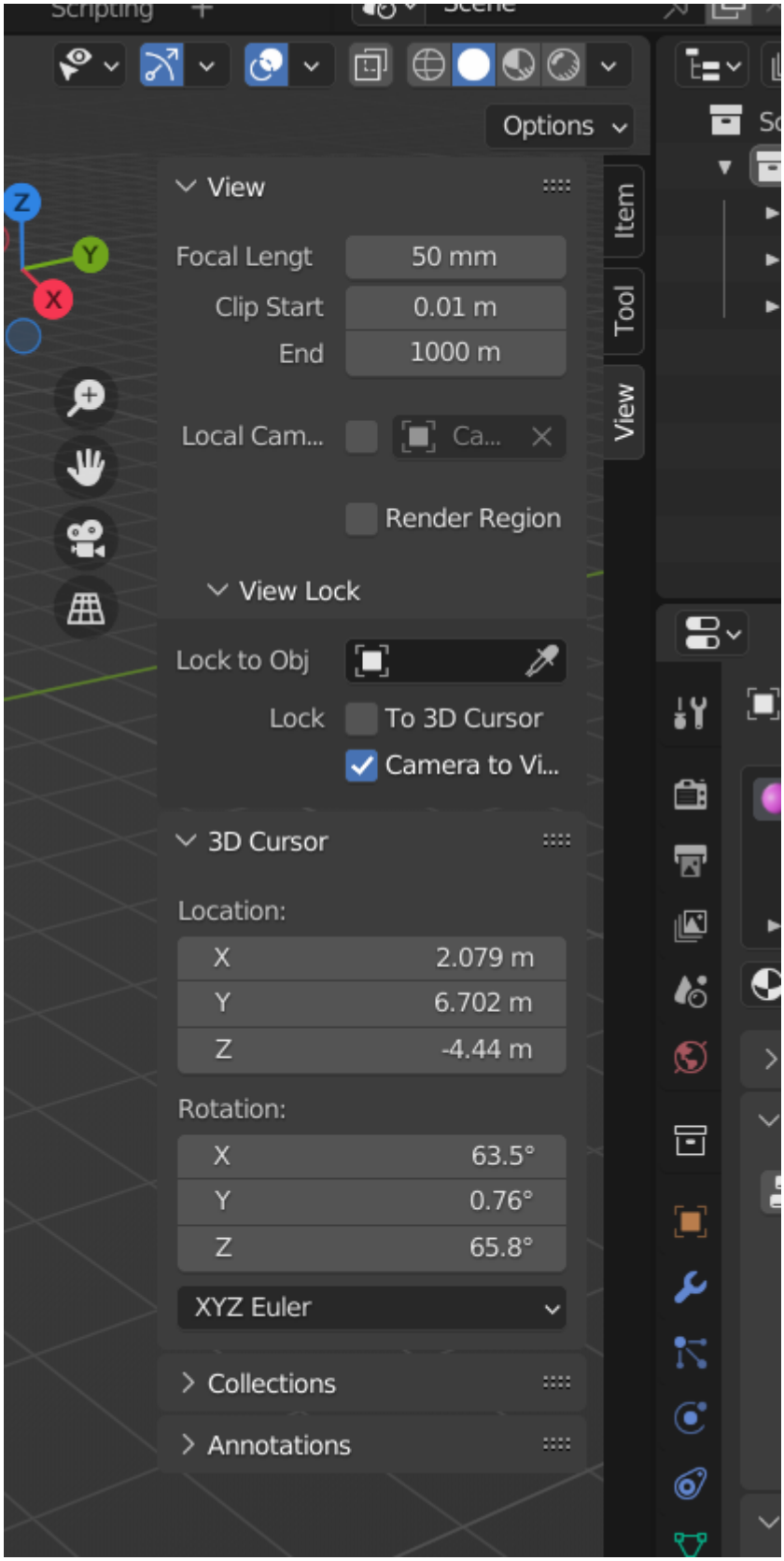
Here violet color is selected

9. Press zero on keyboard , now you can see your image zoomed in
10.At top right corner an arrow will be there ..click on it..

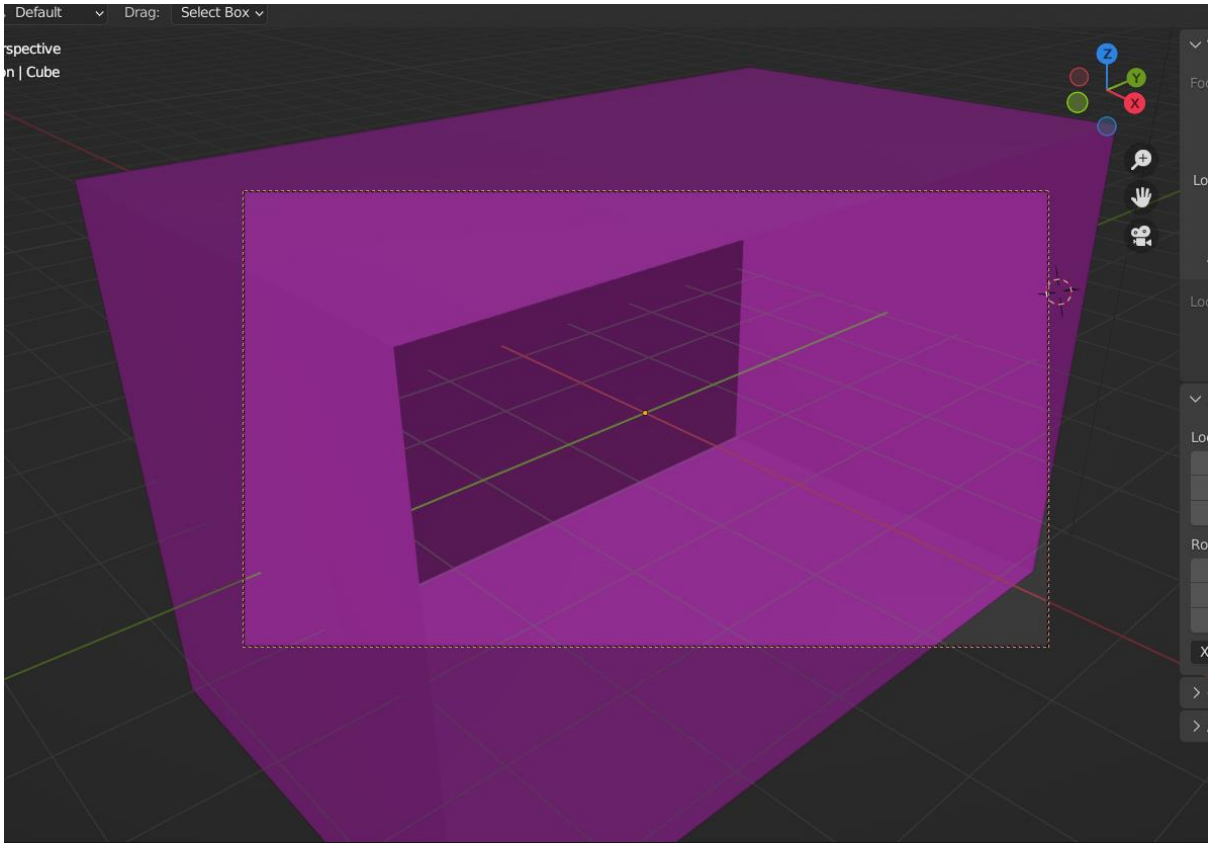


And now under opened box click on view tab

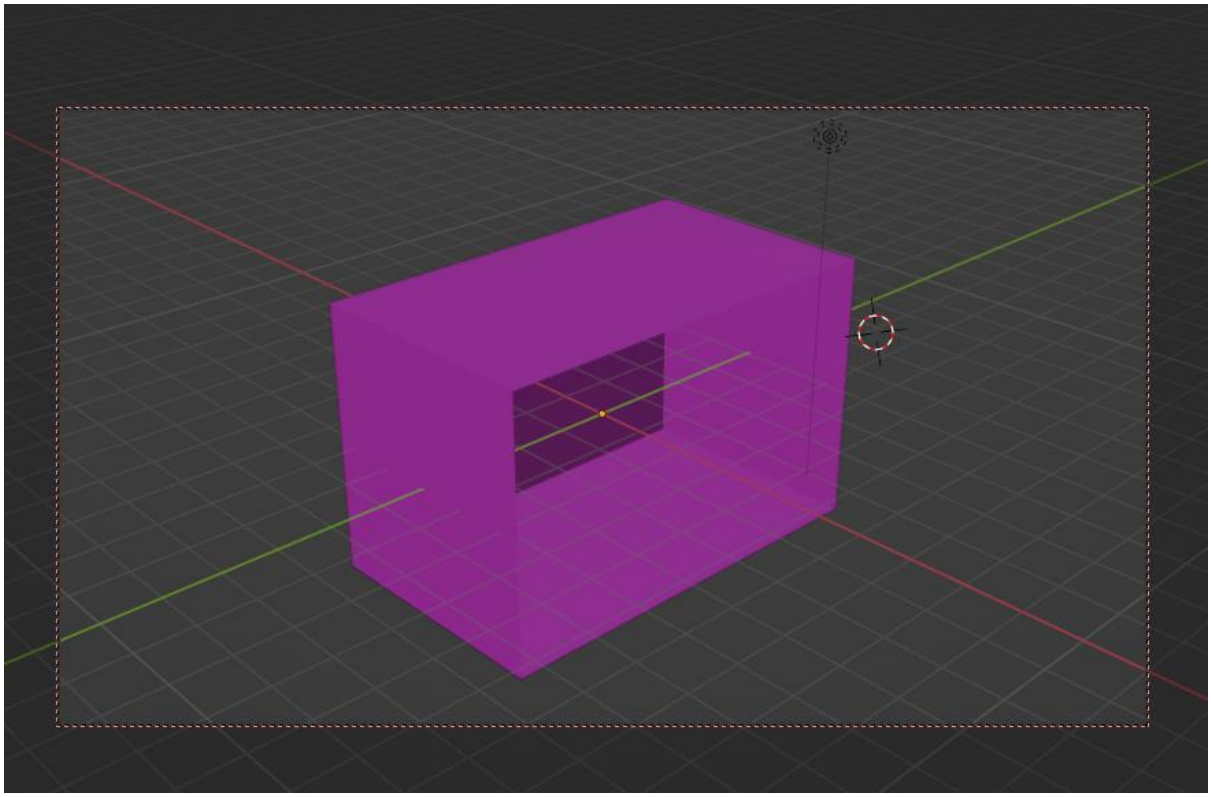
And check in the box Camera to video box



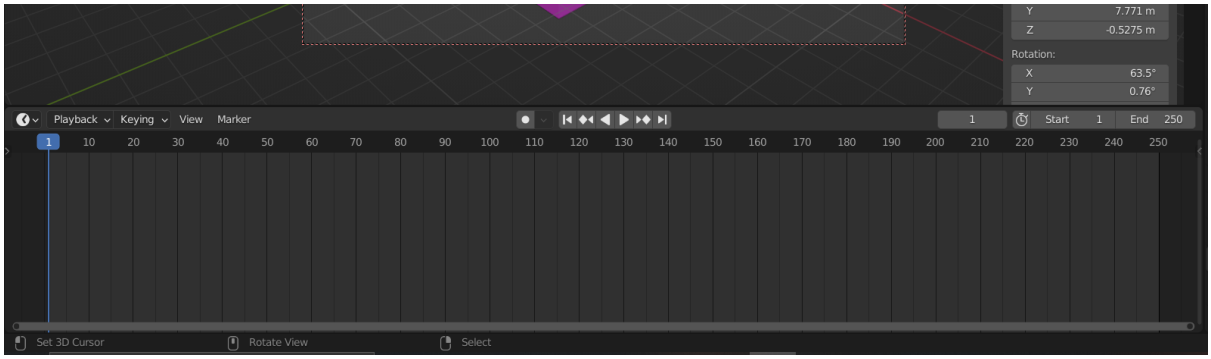
11.Intial image



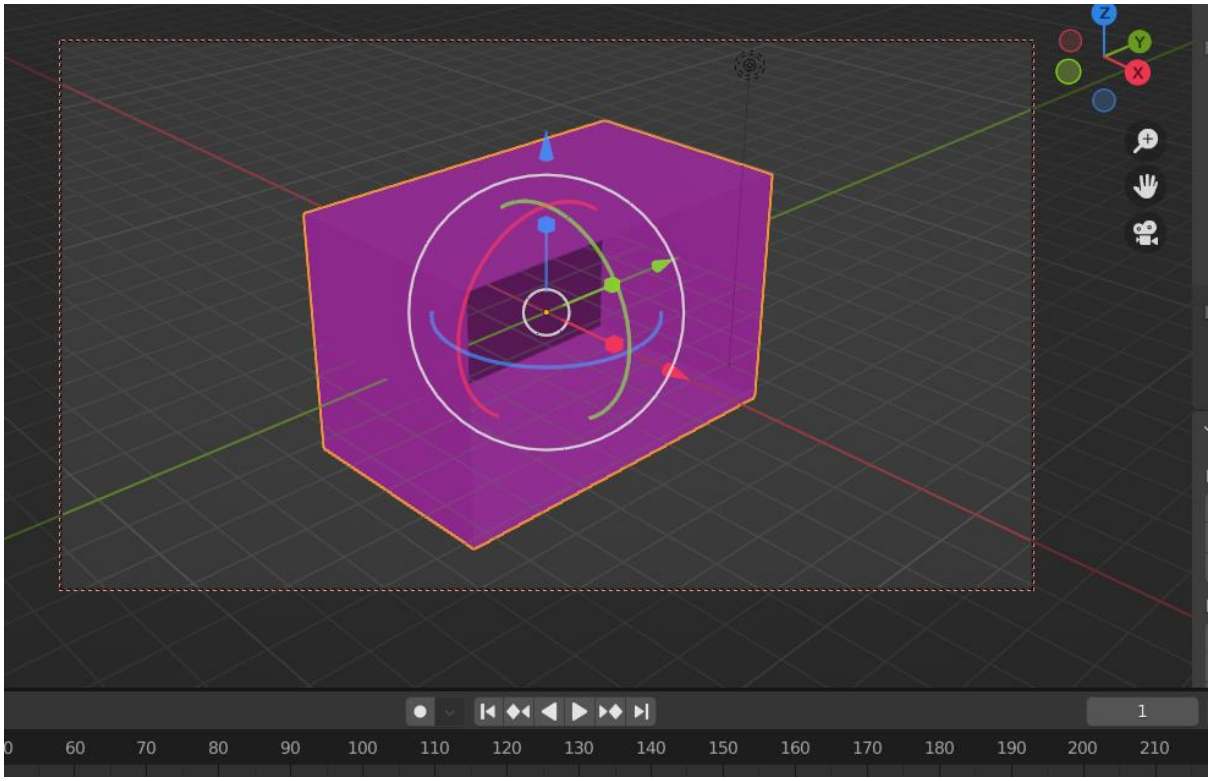
12.Zoom out by using your mouse



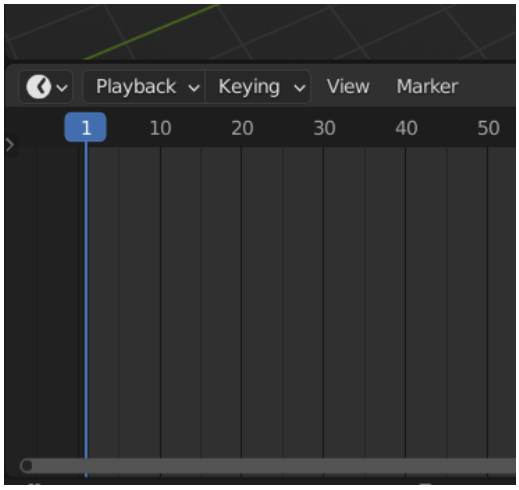
13 Start animating by dragging up the bottom time line



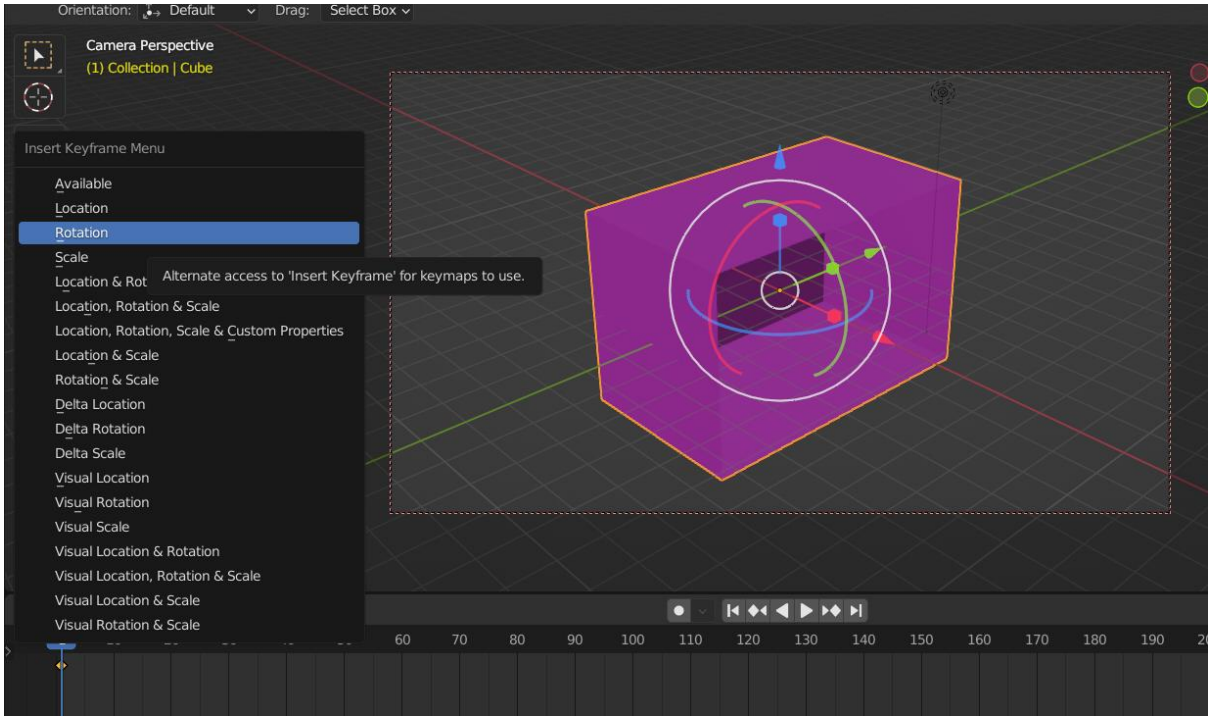
14 . Right click and select your object



Now the line is at timeline 1



15. Place your cursor on outer screen and click “i” on keyboard.

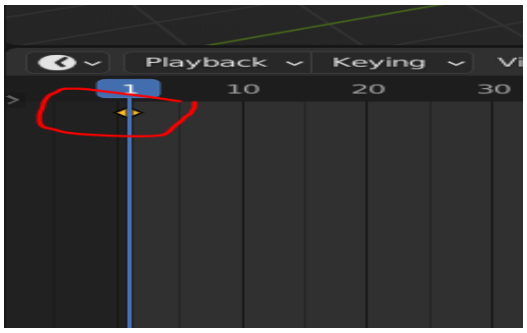


Click on rotation

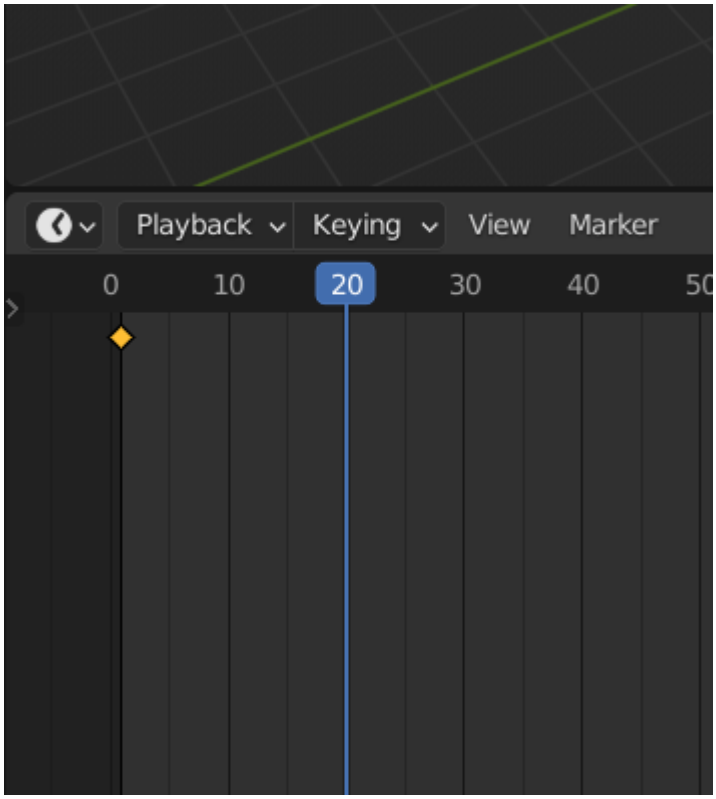
Steps:

1 location
move 25
animate
25 i location
go back to 1
play

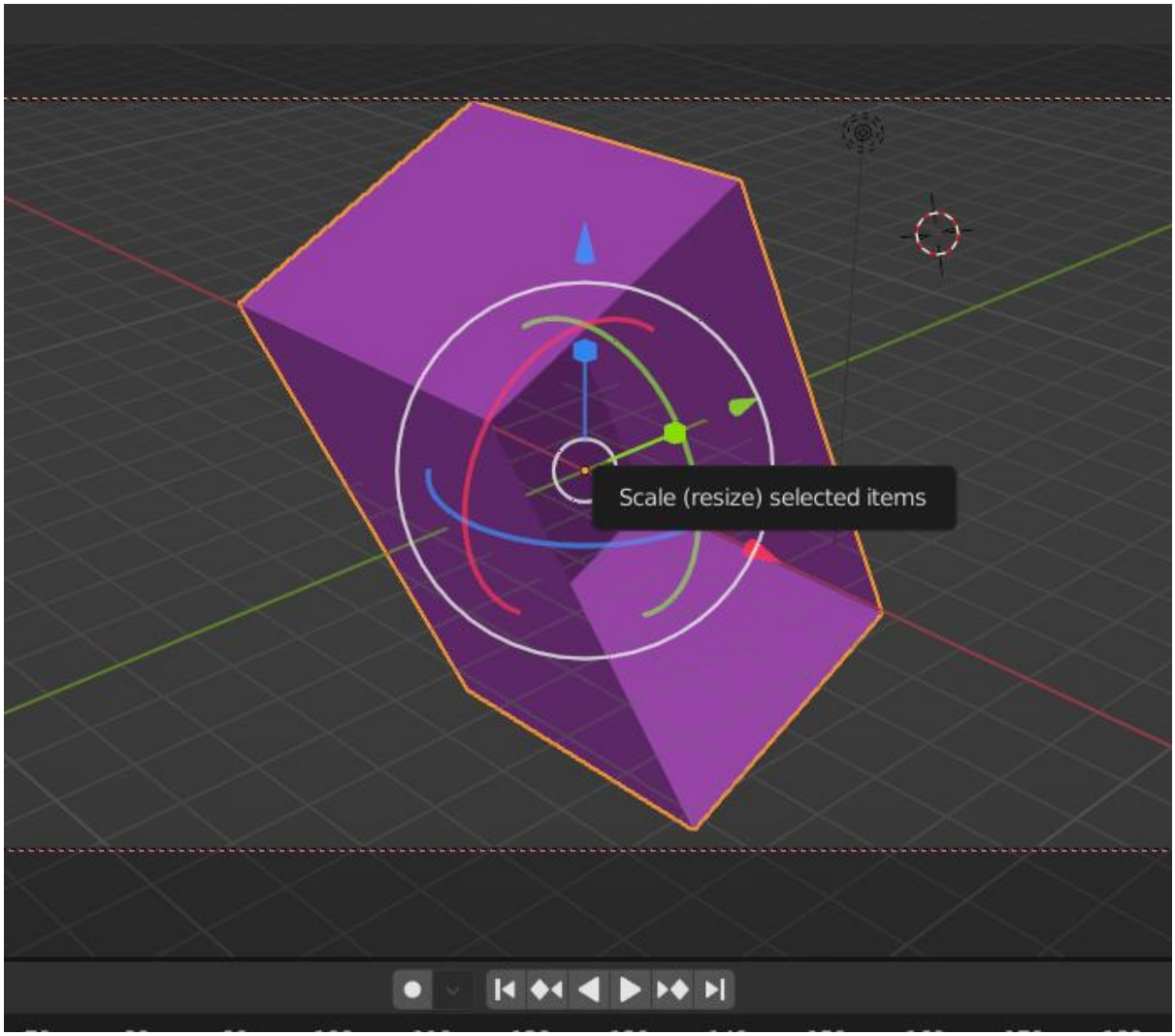
16 . Now you can see a point appeared in timeline



17. Move the time line’



18. Rotate the object



19. Click “i” again and click rotate on time 20

20. Move the keyframe line back to 1

21. Click space bar to play the video

Exp 7: DCL commands

Data Controlling Language (DCL) helps users to retrieve and modify the data stored in the database with some specified queries. Grant and Revoke belong to these types of commands of the Data controlling Language. DCL is a component of SQL commands.

1. Grant:

SQL Grant command is specifically used to provide privileges to database objects for a user. This command also allows users to grant permissions to other users too.

2. Revoke:

Revoke command withdraw user privileges on database objects if any granted. It does operations opposite to the Grant command. When a privilege is revoked from a particular user U, then the privileges granted to all other users by user U will be revoked.

Extra commands:

1.create database IBM;

2.use IBM;

3.create table user(

rollno varchar(10) primary key,

username varchar (20) ,

email varchar (30),

password varchar(20)

);

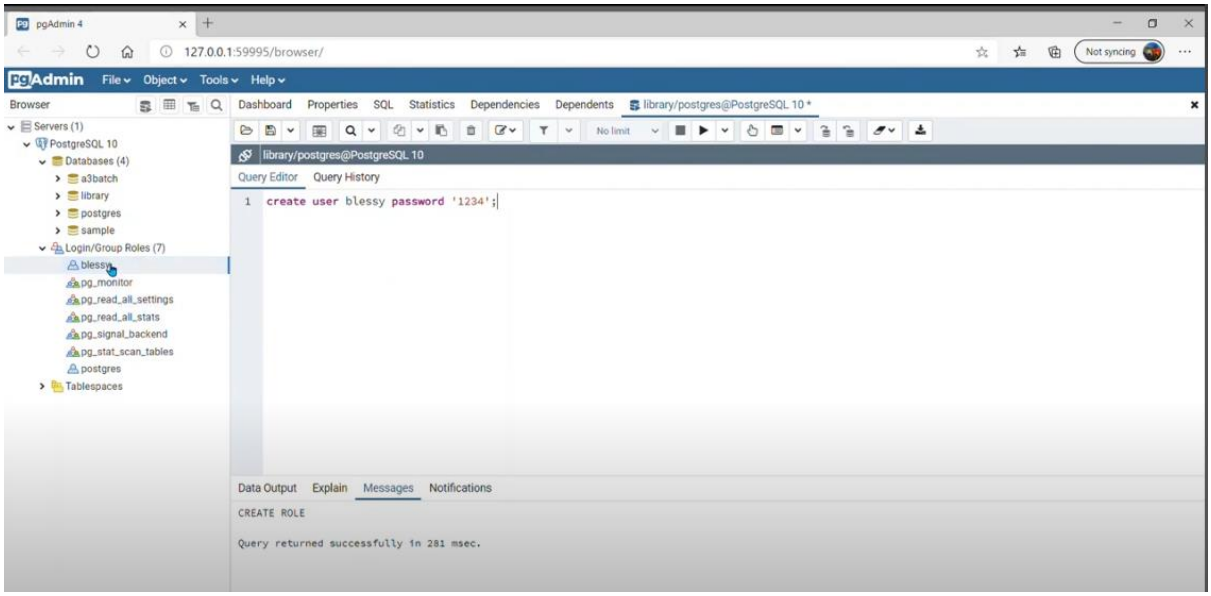
4.insert into user values("19C064","nivedha64",

"nivedhag@student.tce.edu","nivedhaaaa");

Steps:

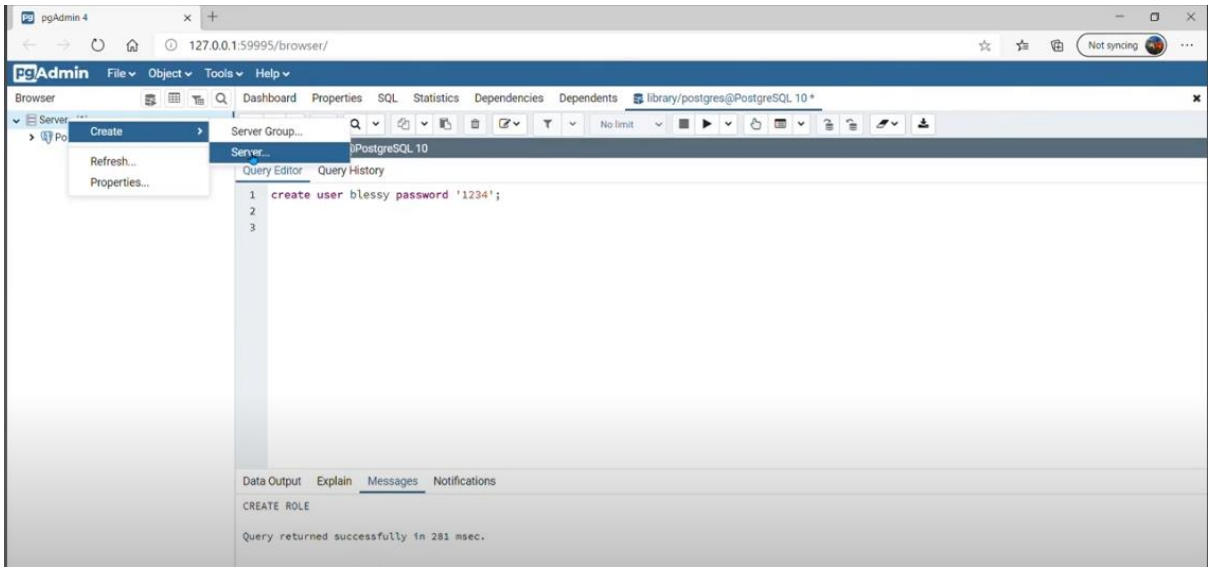
1. select your database

2. create user and run command

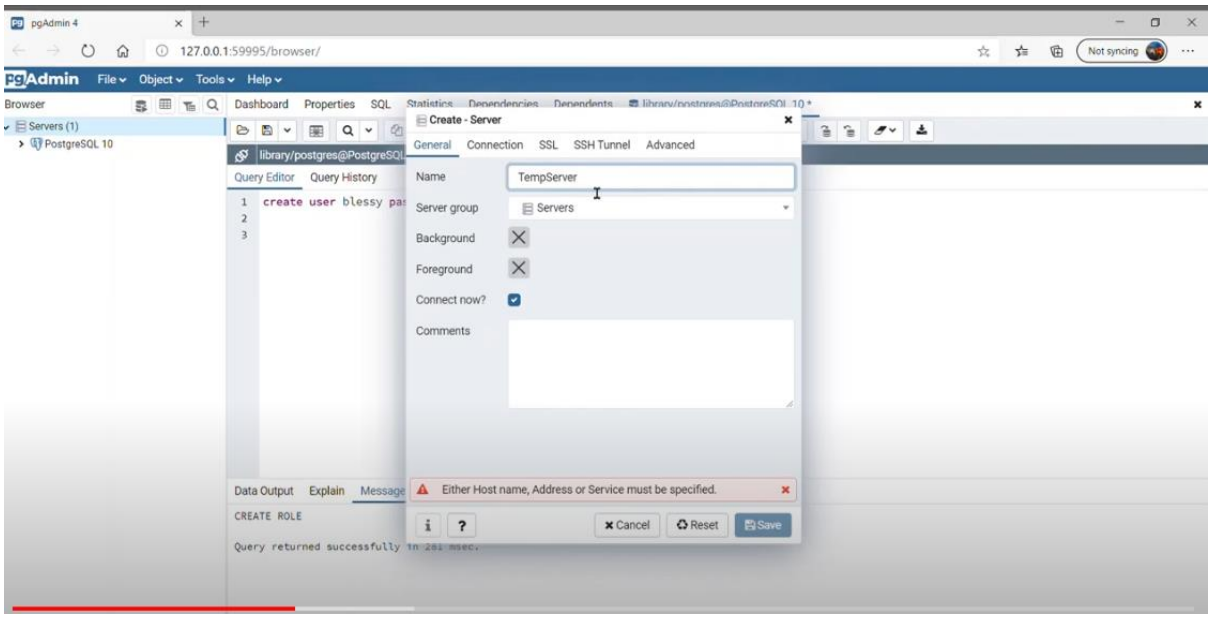


3. now if you access the database through new user it will not be accessible.

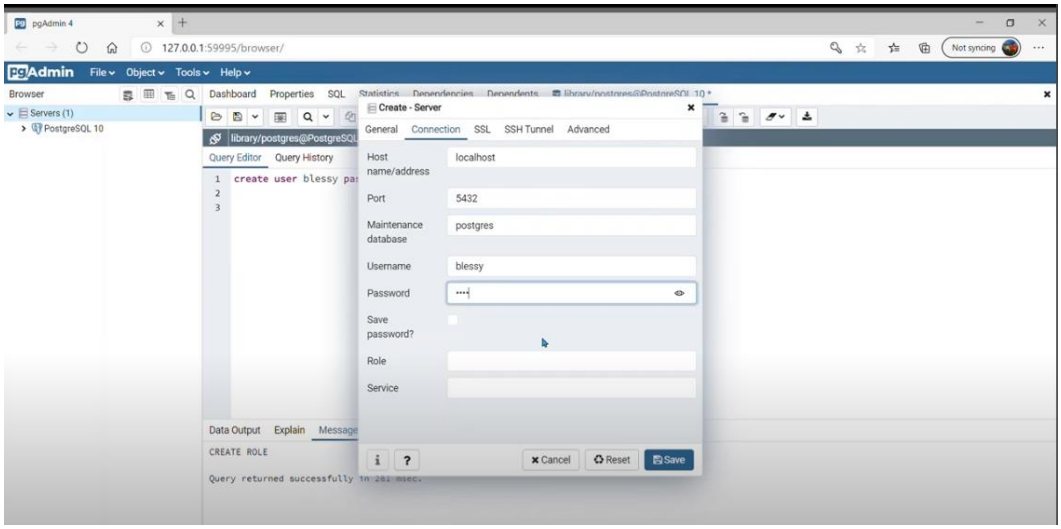
4. create a new server to check it



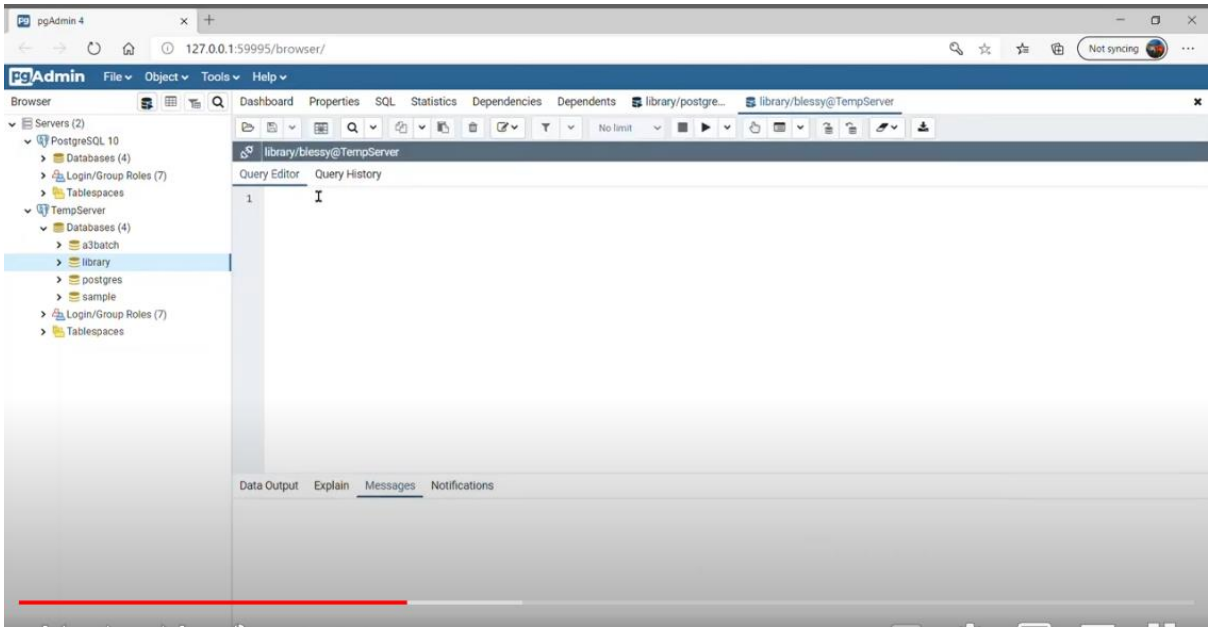
5.



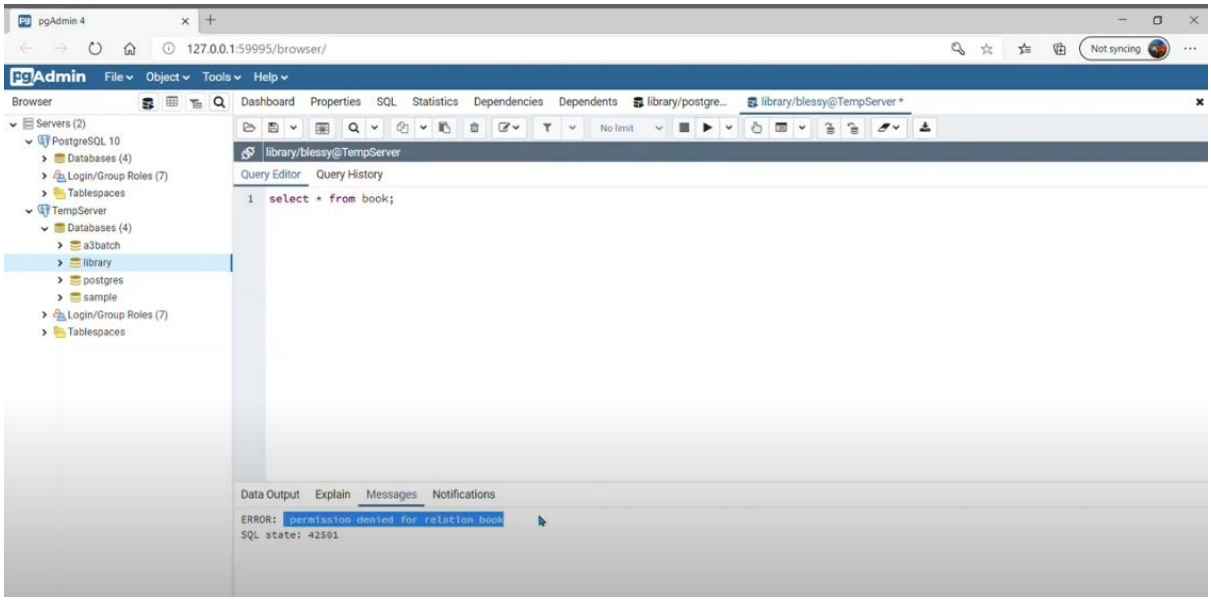
6. In connections tab update host name, user and password



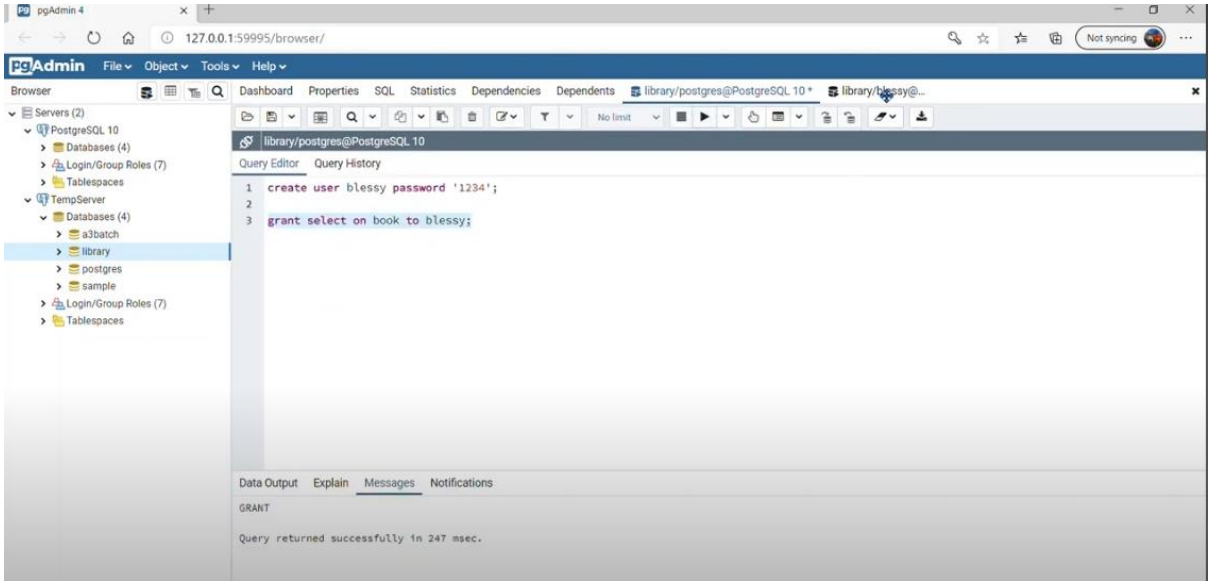
7. Go the database in the new server created.



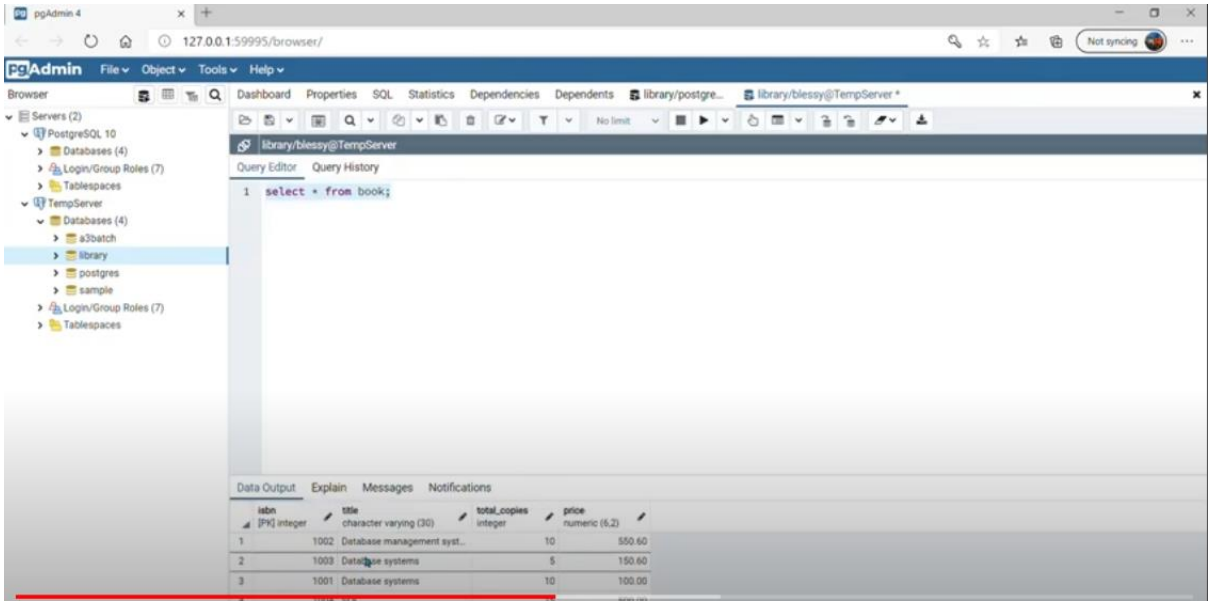
8. Now if execute a command , it shows the permission is denied



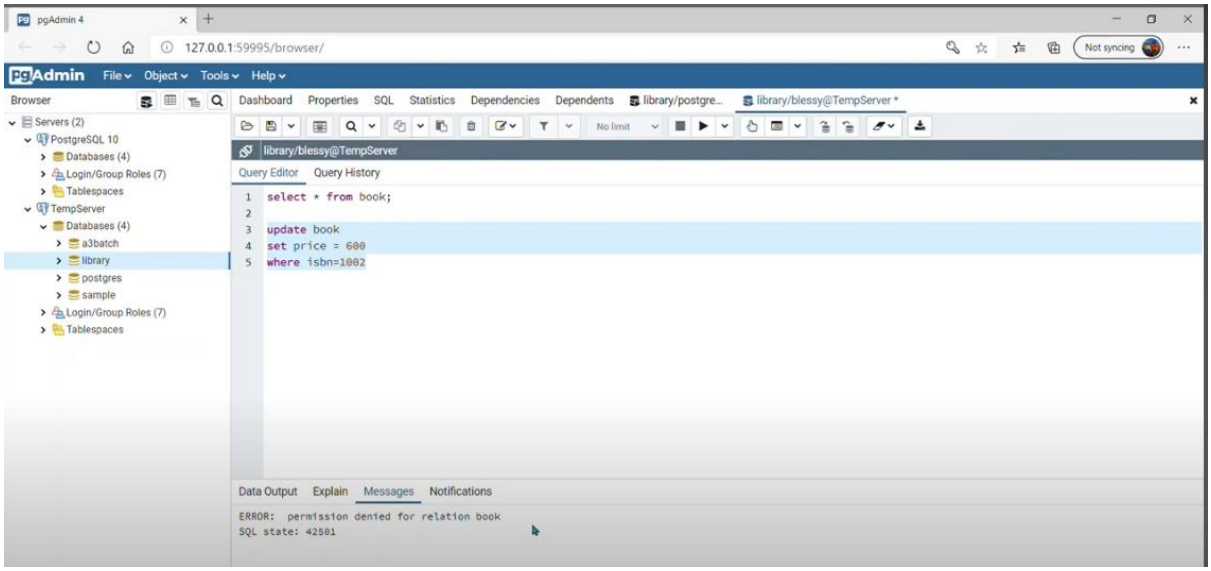
9. Now you execute grant command in old server.



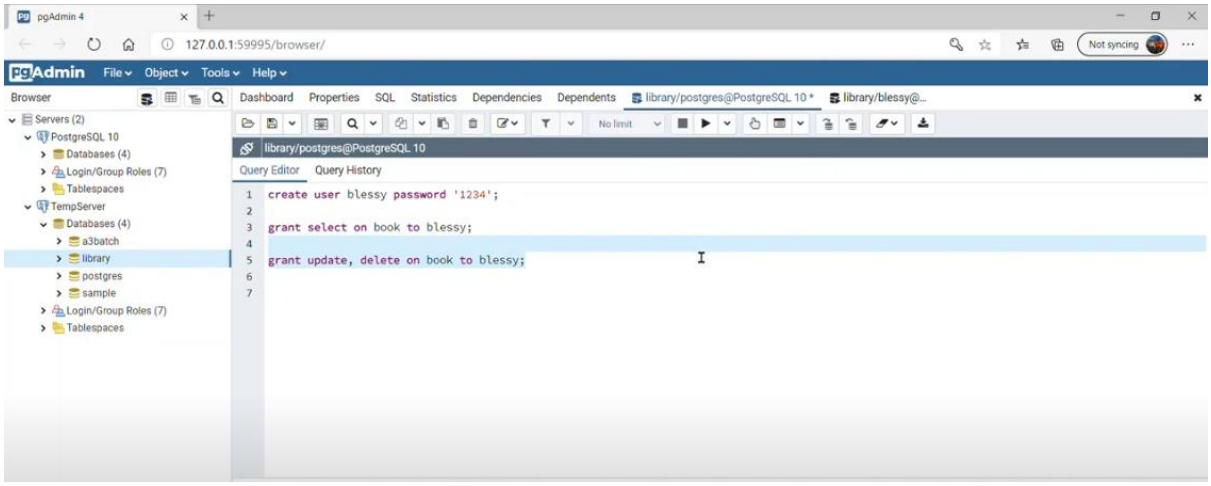
10. Now if you again run the select command from the new server created, the table is displayed.



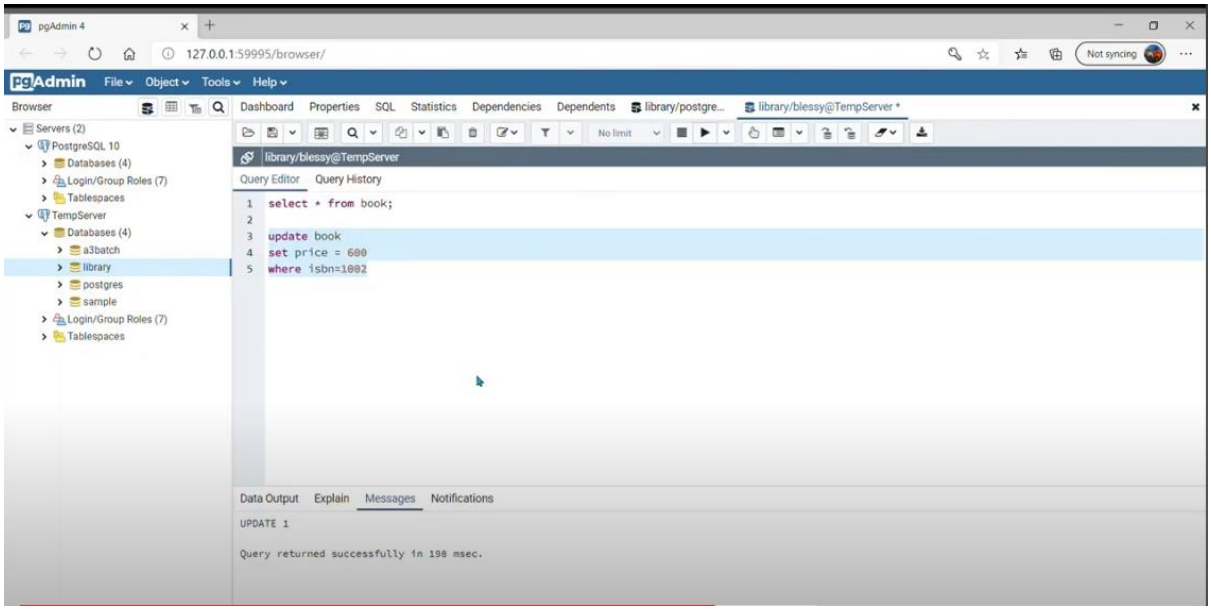
11. Again if u again try to update the book table , it again shows permission denied



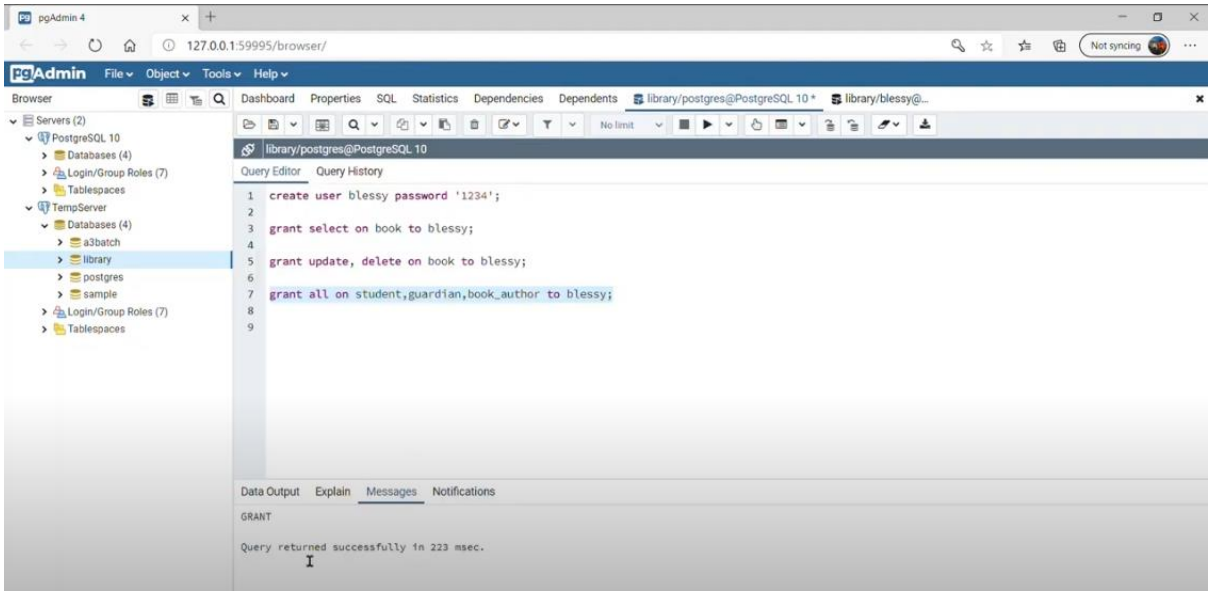
12. Now after giving permission



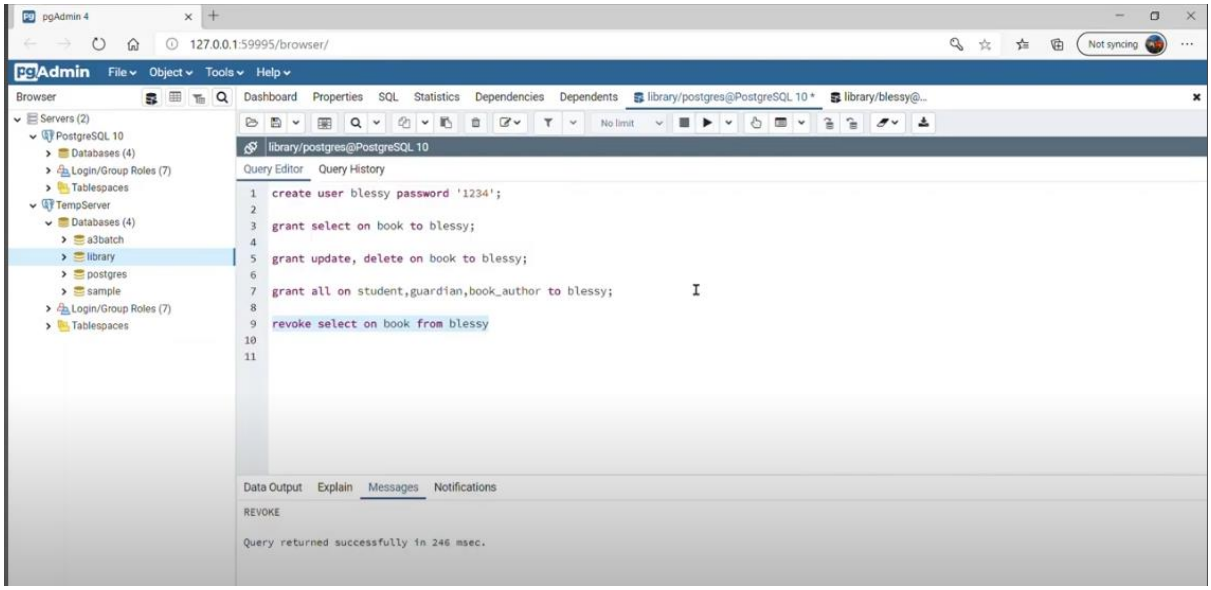
13. your query runs successfully



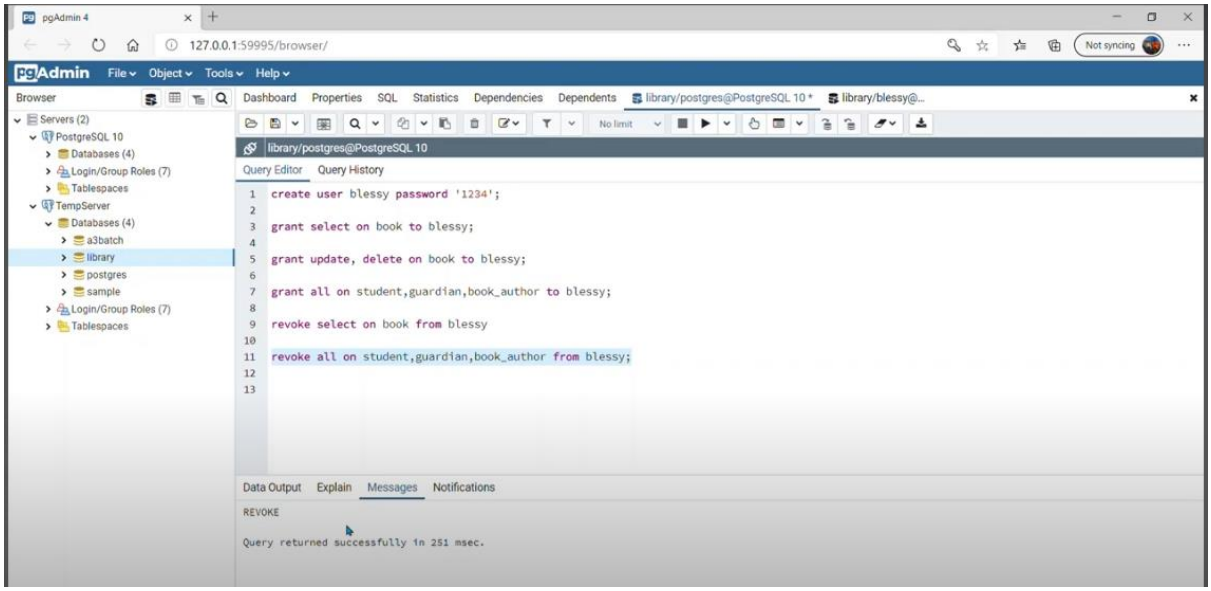
14. You can go and grant permissions in one go.



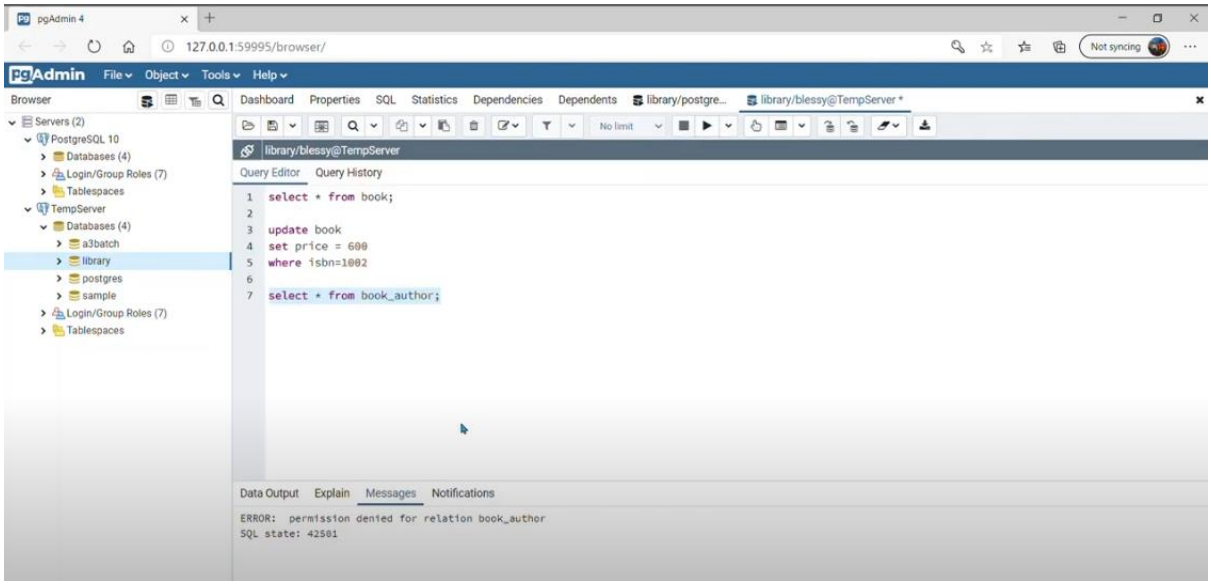
15. now you are using revoke command on select query on book table



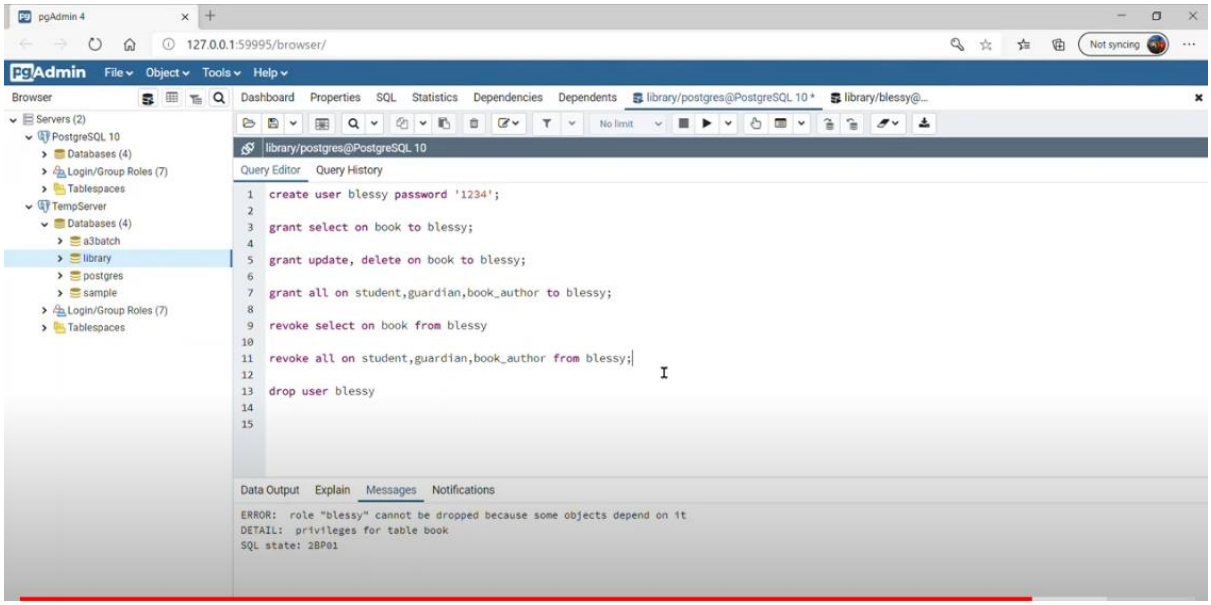
16. you can revoke all permissions at one go.



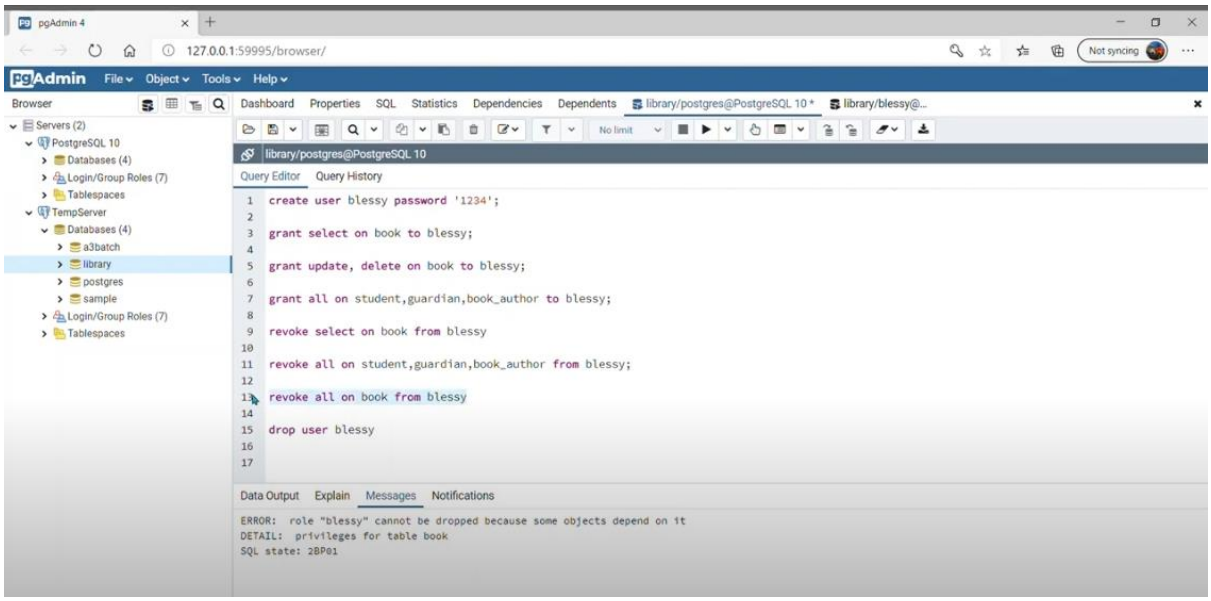
17. Now if you check again permission will be denied.



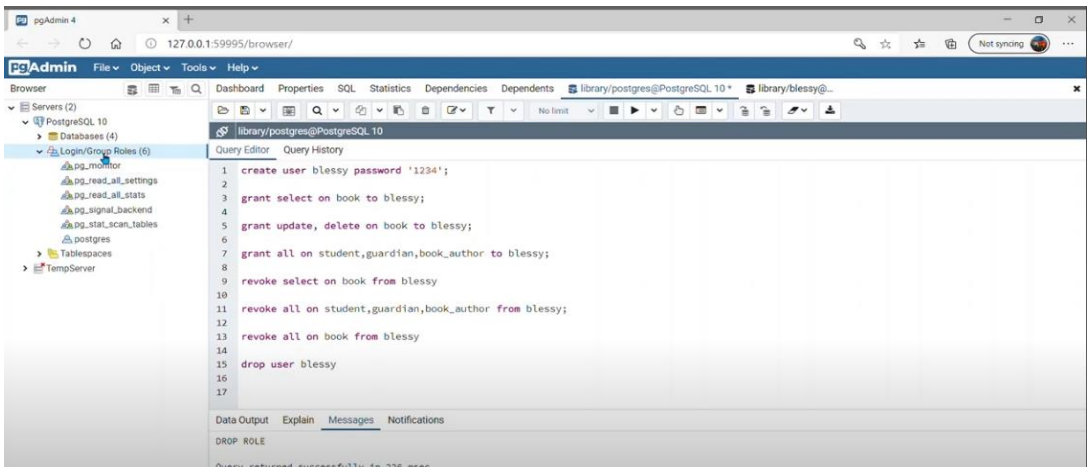
18. To drop user you must first revoke all priveleges, else it will show error like this,



19. Now revoking all privileges on book table



20. Now if you refresh , you can see that the user is removed.



Now even the new server shows error as it was created with the new server

Exp 10: NS2

1. What is NS2. NS2 stands for Network Simulator Version 2. It is an open-source event-driven simulator designed specifically for research in computer communication networks.