Classic ToolShop Desktop App with API

This is a joint, cross-course project with ENSF 607/608. It is a classic Tool Shop desktop application written in Java.

Contributors

Ziad Chemali, Stan Chen

Quick Start

Client and remote server

1. fulfill dependencies in `pom.xml` if builds are missing packages
2. making sure remote backend server is up and running. (See note below)
3. to connect to the remote client, compile and run `src/client/main.java`

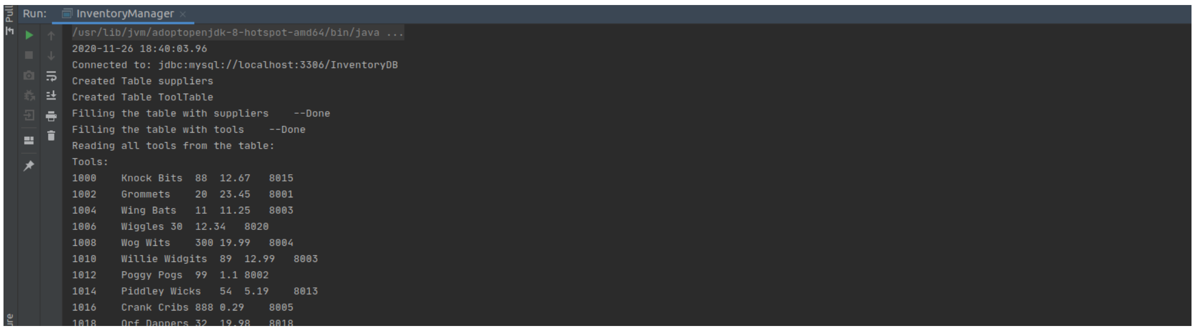
Client and local server

1. fulfill dependencies in `pom.xml` if builds are missing packages
2. to start the server, compile and run `src/server/startServerLocal.java` (See note below)
3. to start the local client, compile and run `src/client/mainLocal.java`

Pre-project Demo

to run the pre-project demo, please compile and run `src/preproject/InventoryManager.java`.

An running mysql is required to be hosted at localhost:3306



```
/usr/lib/jvm/adoptopenjdk-8-hotspot-amd64/bin/java ...
2020-11-26 18:40:03.96
Connected to: jdbc:mysql://localhost:3306/InventoryDB
Created Table suppliers
Created Table ToolTable
Filling the table with suppliers    --Done
Filling the table with tools    --Done
Reading all tools from the table:
Tools:
1000    Knock Bits  88  12.67   8015
1002    Grommets    20  23.45   8001
1004    Wing Bats   11  11.25   8003
1006    Wiggles 30  12.34   8020
1008    Wog Wits    300 19.99   8004
1010    Willie Widgits  89  12.99   8003
1012    Poggy Pogs  99  1.1 8002
1014    Piddley Wicks   54  5.19    8013
1016    Crank Cribs 888 0.29    8005
1018    Orf Dappers 32  19.98   8018
```

After running the InventoryManager.java, the program should generate log similiar to the following:

```
2020-11-26 18:40:03.96
Connected to: jdbc:mysql://localhost:3306/InventoryDB
Created Table suppliers
Created Table ToolTable
Filling the table with suppliers    --Done
Filling the table with tools    --Done
Reading all tools from the table:
```

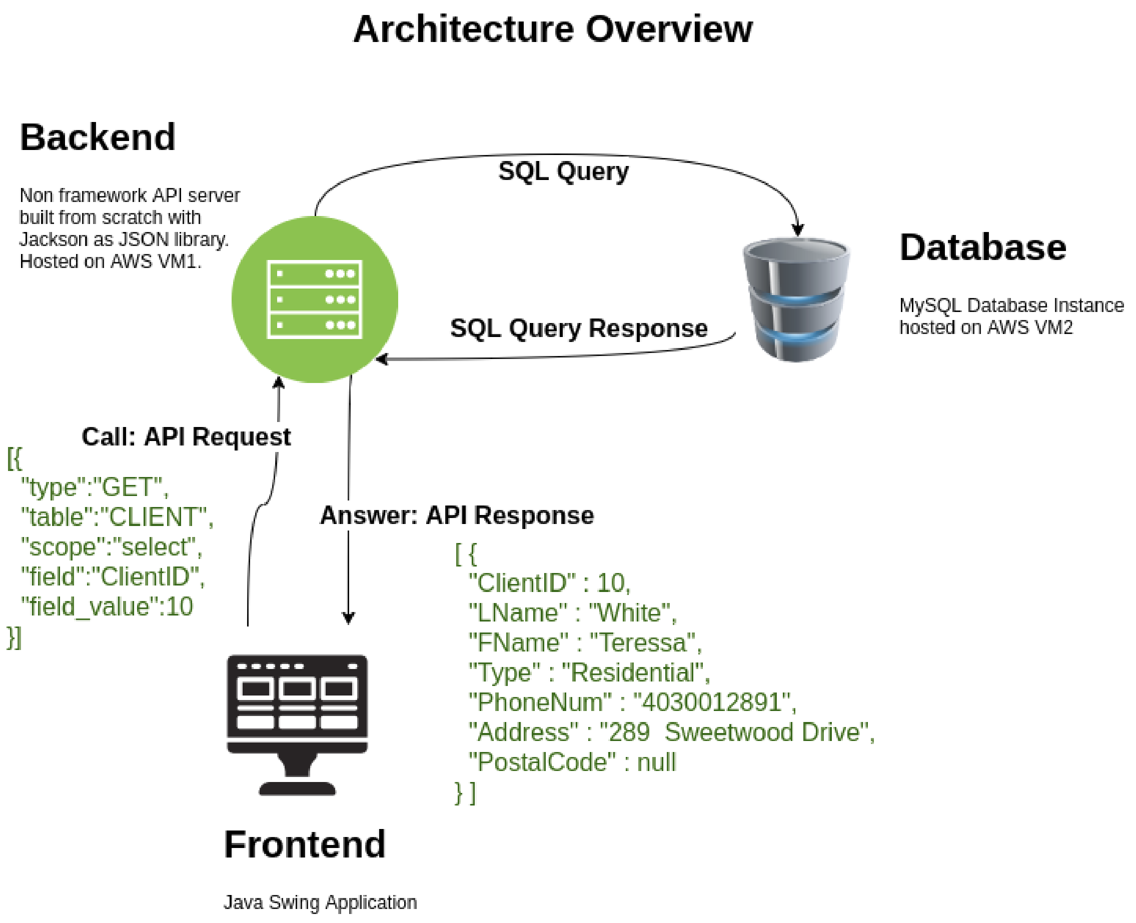
```
Tools:
1000    Knock Bits  88  12.67   8015
1002    Grommets    20  23.45   8001
1004    Wing Bats   11  11.25   8003
1006    Wiggles 30  12.34   8020
1008    Wog Wits    300 19.99   8004
1010    Willie Widgits  89  12.99   8003
1012    Poggy Pogs  99  1.1 8002
1014    Piddley Wicks   54  5.19    8013
1016    Crank Cribs 888 0.29    8005
1018    Orf Dappers 32  19.98   8018
1020    Knit Piks   66  6.75    8015
1022    Tic Tocs    87  1.36    8014
1024    Thinga-ma-bobs  40  10.98   8012
1026    Barn Bins   45  88.67   8006
1028    Pong Pangs  2345    0.1 8002
1030    Nic Nacs    238 2.99    8015
1032    Lilly Larks 56  12.99   8007
1034    Cork Handles    654 2.66    8016
1036    Erk Orks    498 3.99    8017
1038    Googly Eyes 756 6.99    8001
1040    Inny Outies 219 3.45    8010


Reading all suppliers from the table:
Suppliers:
8001    Grommet Builders    788 30th St., SE, Calgary   Fred
8002    Pong Works  749 Dufferin Blvd., SE, Calgary Bart
8003    Wiley Inc.  26 40th St., SE, Calgary    BillyBob
8004    Winork Manufacturing Inc.   156 51st Ave., SE, Calgary  Marty
8005    Grab Bag Inc.   138 42nd Ave., NE, Calgary  Monty
8006    Paddy's Manufacturing   311 McCall Way, NE, Calgary Barney
8007    Smickles Industries 966 Smed Lane, SE, Calgary  Lisa
8008    Thangs Inc. 879 37th Ave., NE, Calgary  Thelma
8009    Flip Works Inc. 472 Ogden Dale Rd., SE, Calgary Rory
8010    Irkle Industries    754 Sunridge Way, NE, Calgary   Irma
8011    Biff Builders   690 19th St., NE, Calgary   Borjn
8012    Twinkles Inc.   318 29th St.,NE, Calgary    Barkley
8013    Piddles Industries  238 112th Ave., NE, Calgary Parnell
8014    Tic Tac Manufacturing   598 Palmer Rd., NE, Calgary Teisha
8015    Knock Knock Inc.    363 42nd Ave., NE, Calgary  Ned
8016    Corky Things Inc.   35 McCall Way, NE, Calgary  Corrine
8017    E & O Industries    883 44th St., SE, Calgary   Stan
8018    Fiddleys Makes Stuff Inc.   350 27th St., NE, Calgary   Fredda
8019    Horks and Stuff Manufacturing   997 42nd Ave., NE, Calgary  Harold
8020    Wings Works 754 48th St., SE, Calgary   Wing


Searching table for tool 1002: should return 'Grommets'
Search Result:  1002    Grommets    20  23.45   8001

Searching table for tool 9000: should fail to find a tool
Search Failed to find a tool matching id: 9000
The program is finished running

Process finished with exit code 0
```

Summary

Inventory management system that has two functionalities:

- Allows owner to add new customers/update their information and allows customers to search for tools from the data base and purchase.
- If the quantity of an item goes below 40 items then the program automatically generates an order line for that item

Architecture


Architecture Overview
Backend
Non framework API server built from scratch with Jackson as JSON library. Hosted on AWS VM1.
SQL Query
SQL Query Response
Database
MySQL Database Instance hosted on AWS VM2
Call: API Request
Answer: API Response
Frontend
Java Swing Application

```
[{
  "type":"GET",
  "table":"CLIENT",
  "scope":"select",
  "field":"ClientID",
  "field_value":10
}]
```

```
[ {
  "ClientID" : 10,
  "LName" : "White",
  "FName" : "Teressa",
  "Type" : "Residential",
  "PhoneNum" : "4030012891",
  "Address" : "289  Sweetwood Drive",
  "PostalCode" : null
} ]
```

Front-End

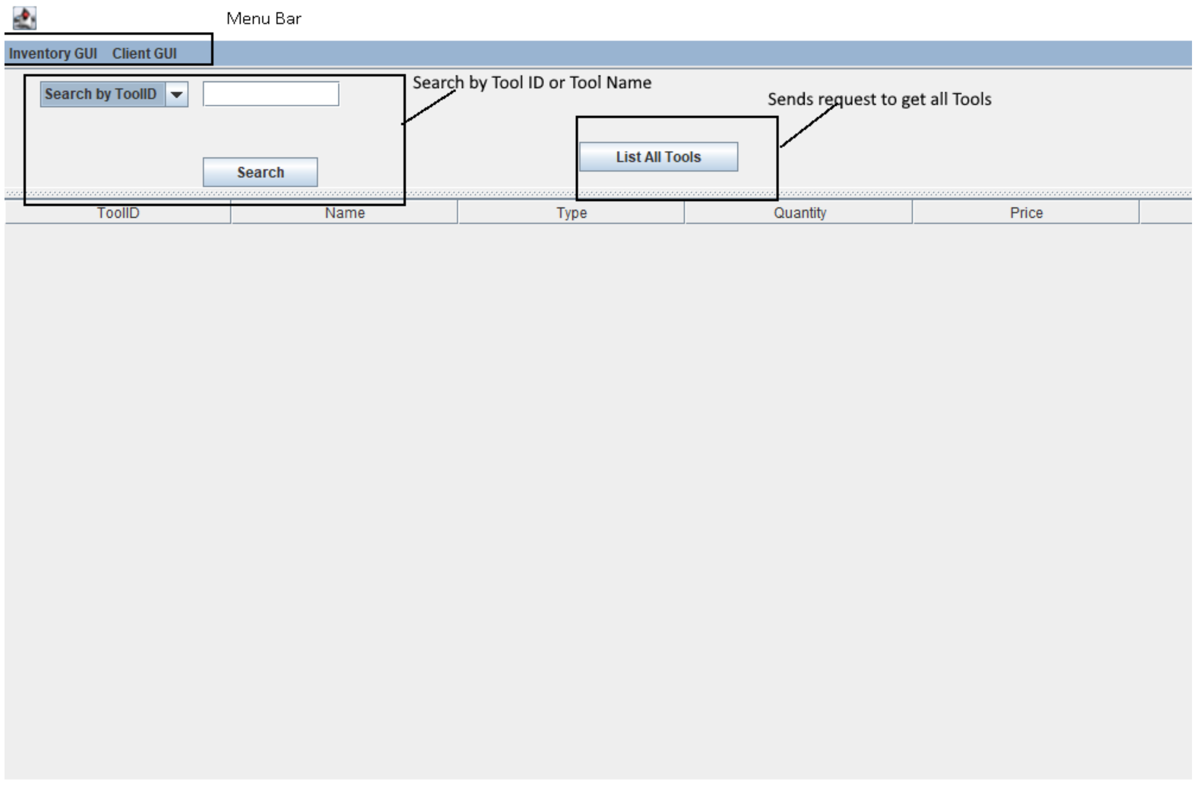
The front end is a GUI application that will send messages in a JSON format to the server via sockets, then it will receive a response. Example if search by ToolId is selected a we are searching for a ToolID of 8000 then it will send a JSON message as follow: `"{ \"type\" : \"GET\", \"table\" : \"TOOL\" , \"scope\":\"select\",\"field\":\"ToolID\",\"field_value\":\"8000\"}";`

The response is a JSON Node as follows `[ {  "ToolID" : 8000,  "Name" : "Knock Bitzzz", "Type" : "Electric",  "Quantity" : 70,  "Price" : 15.0,  "SupplierID" : 8004, "PowerType" : null} ]`

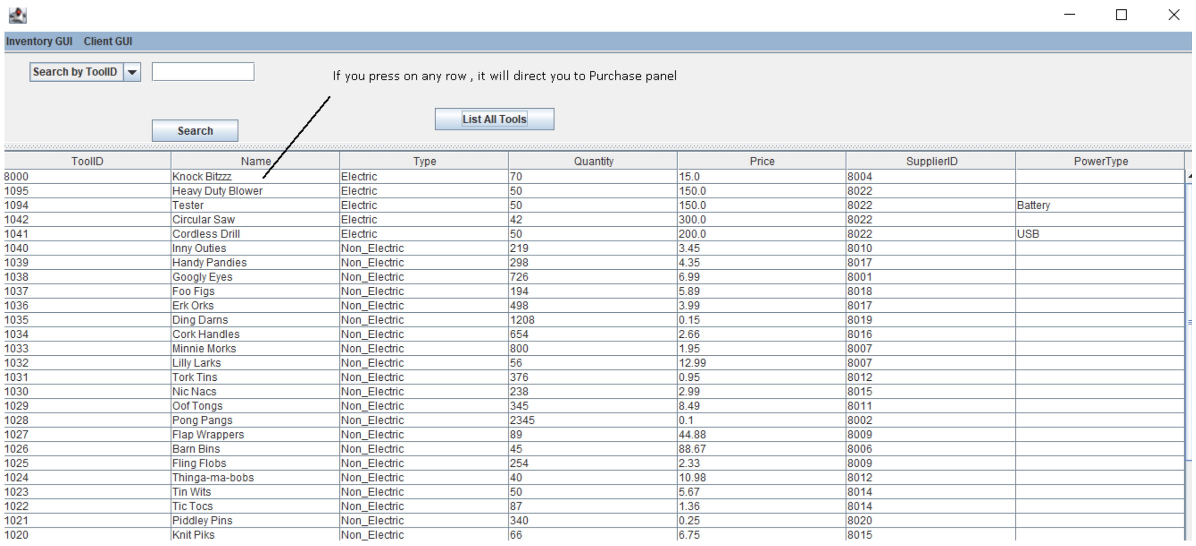
And it will be printed in the GUI

GUI Panels

1. Inventory Panel



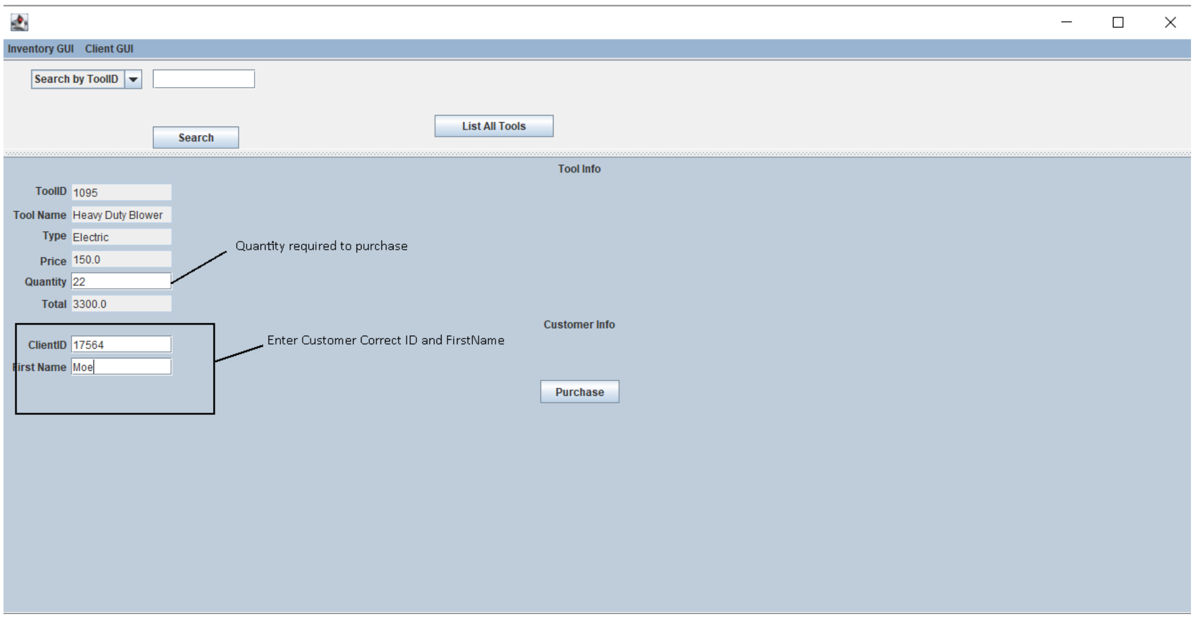
Note: If you press <u>List All Tools</u> or <u>Search</u> (with correct ToolID or Tool Name) the following table is generated


Inventory GUI
Client GUI
Search by ToolID
If you press on any row , it will direct you to Purchase panel
Search
List All Tools

ToolID	Name	Type	Quantity	Price	SupplierID	PowerType
8000	Knock Bitzzz	Electric	70	15.0	8004	
1095	Heavy Duty Blower	Electric	50	150.0	8022	
1094	Tester	Electric	50	150.0	8022	Battery
1042	Circular Saw	Electric	42	300.0	8022	
1041	Cordless Drill	Electric	50	200.0	8022	USB
1040	Inny Outies	Non_Electric	219	3.45	8010	
1039	Handy Pandies	Non_Electric	298	4.35	8017	
1038	Googly Eyes	Non_Electric	726	6.99	8001	
1037	Foo Figs	Non_Electric	194	5.89	8018	
1036	Erk Orks	Non_Electric	498	3.99	8017	
1035	Ding Darns	Non_Electric	1208	0.15	8019	
1034	Cork Handles	Non_Electric	654	2.66	8016	
1033	Minnie Morks	Non_Electric	800	1.95	8007	
1032	Lilly Larks	Non_Electric	56	12.99	8007	
1031	Tork Tins	Non_Electric	376	0.95	8012	
1030	Nic Nacs	Non_Electric	238	2.99	8015	
1029	Oof Tongs	Non_Electric	345	8.49	8011	
1028	Pong Pangs	Non_Electric	2345	0.1	8002	
1027	Flap Wrappers	Non_Electric	89	44.88	8009	
1026	Barn Bins	Non_Electric	45	88.67	8006	
1025	Fling Flobs	Non_Electric	254	2.33	8009	
1024	Thinga-ma-bobs	Non_Electric	40	10.98	8012	
1023	Tin Wits	Non_Electric	50	5.67	8014	
1022	Tic Tocs	Non_Electric	87	1.36	8014	
1021	Piddley Pins	Non_Electric	340	0.25	8020	
1020	Knit Piks	Non_Electric	66	6.75	8015	

2. Purchase Panel

After selecting a row from the table, purchase panel will appear

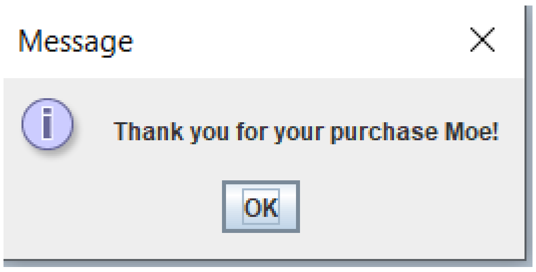


ToolID 1095
Tool Name Heavy Duty Blower
Type Electric
Price 150.0
Quantity 22
Total 3300.0
ClientID 17564
First Name Moe

Quantity required to purchase

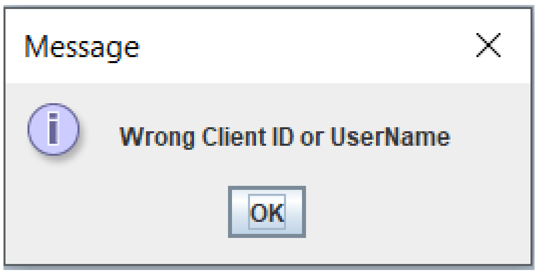
Enter Customer Correct ID and FirstName

if the customer ID/First Name are correct then purchase will be generated and the following pop-up will appear



Thank you for your purchase Moe!

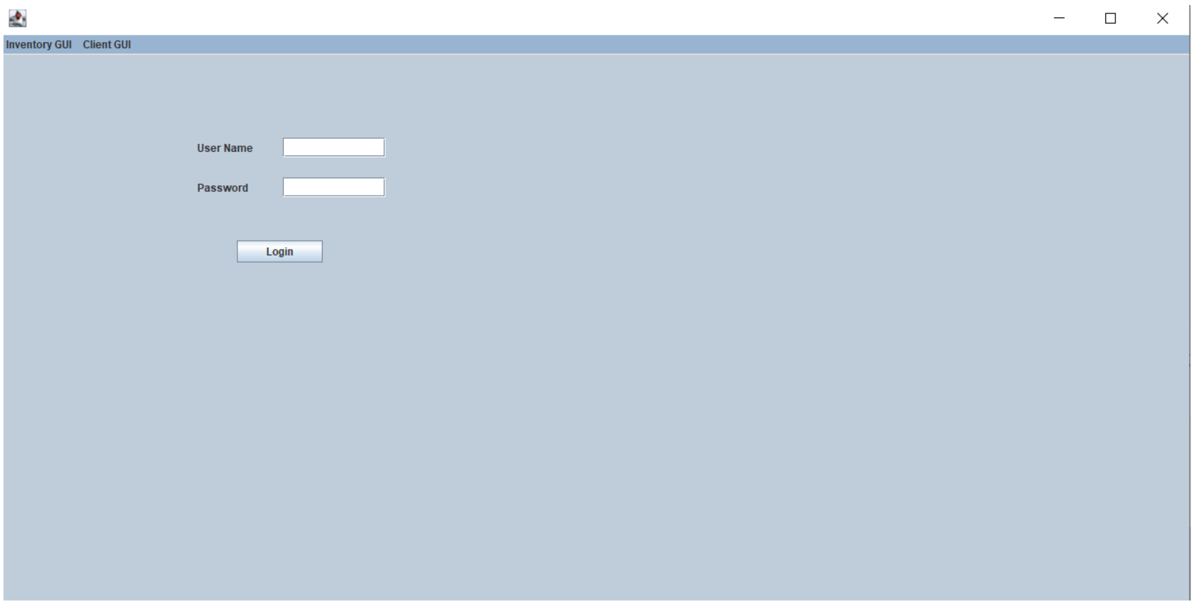
else this pop-up will appear



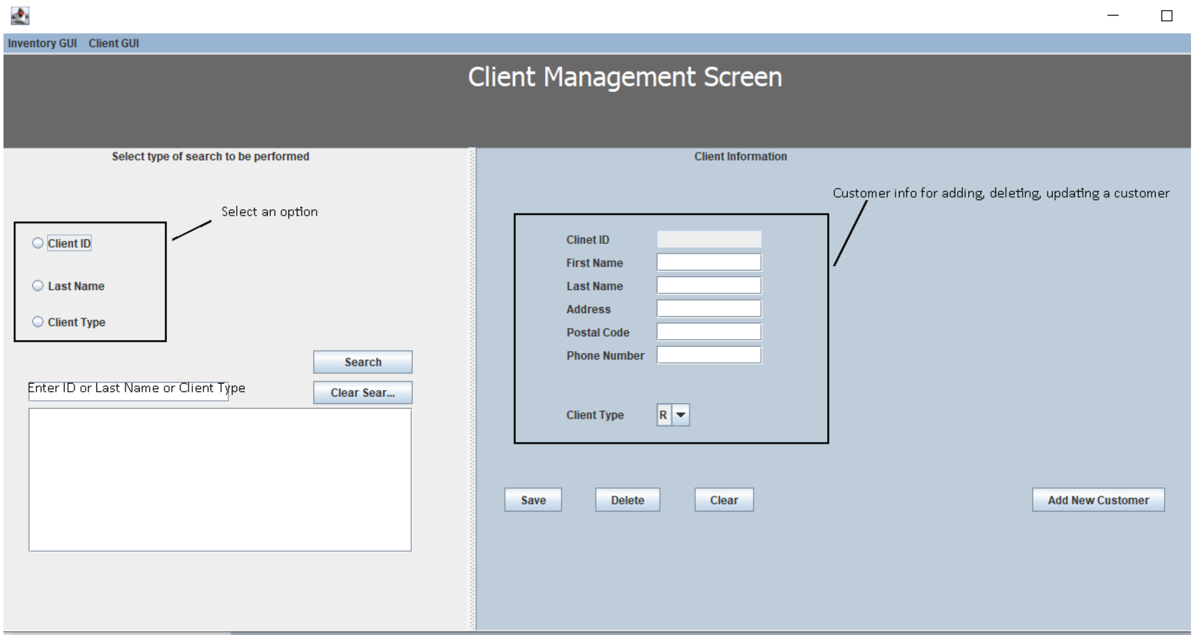
Wrong Client ID or UserName

3. CMS Panel

press on ClientGUI option from the menu bar, it will direct you to a Login panel

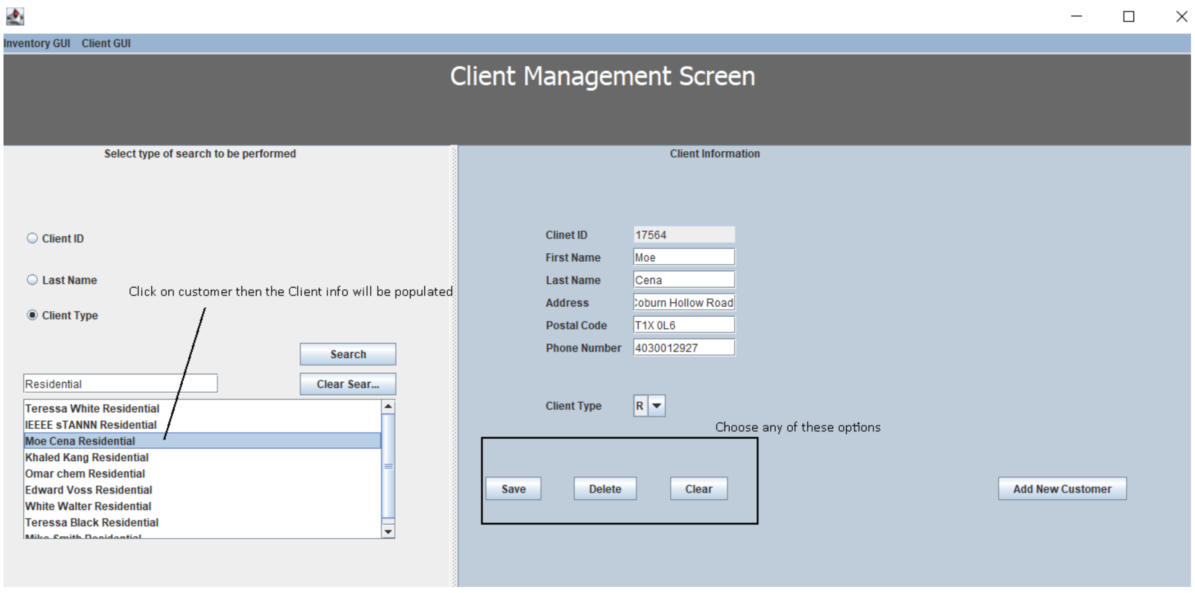


If username/password are correct then the client management panel will show



Updating/Deleting a customer

First search for a customer then select the customer from the JList. After selecting a row, the Client Information in the right side will be populated automatically



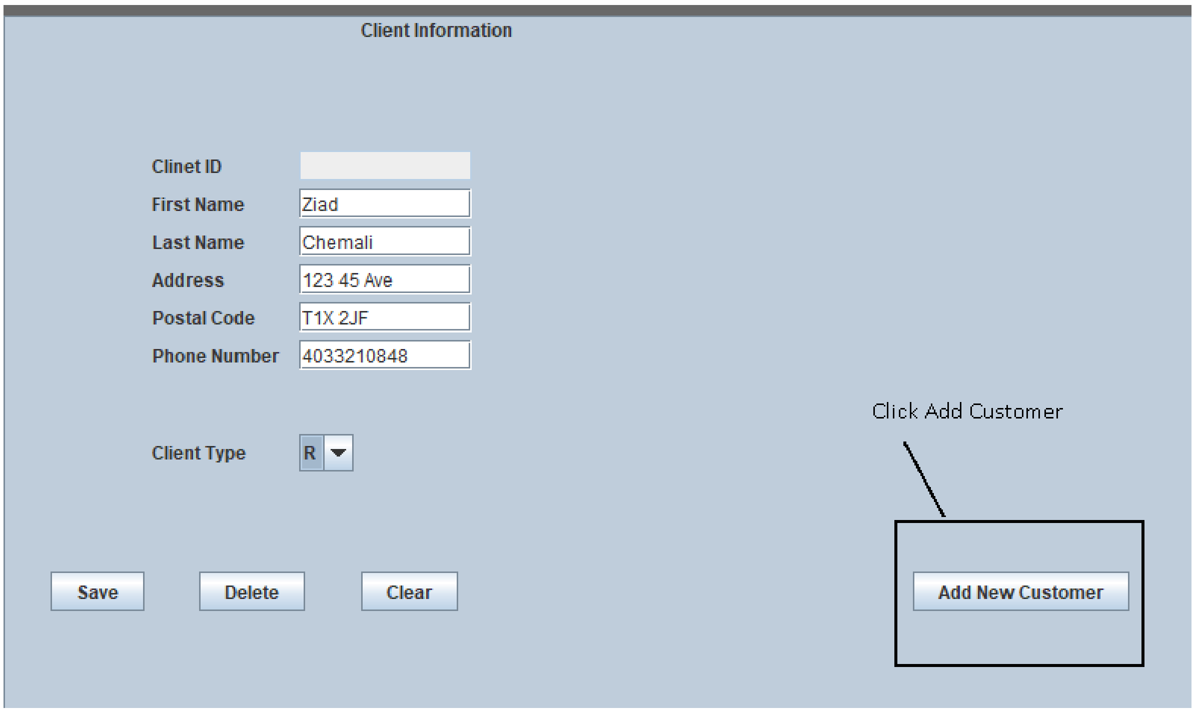
Residential

Teressa White Residential
IEEEE sTANNN Residential
Moe Cena Residential
Khaled Kang Residential
Omar chem Residential
Edward Voss Residential
White Walter Residential
Teressa Black Residential

Clinet ID	17564
First Name	Moe
Last Name	Cena
Address	:oburn Hollow Road
Postal Code	T1X 0L6
Phone Number	4030012927
Client Type	R

Adding new customer

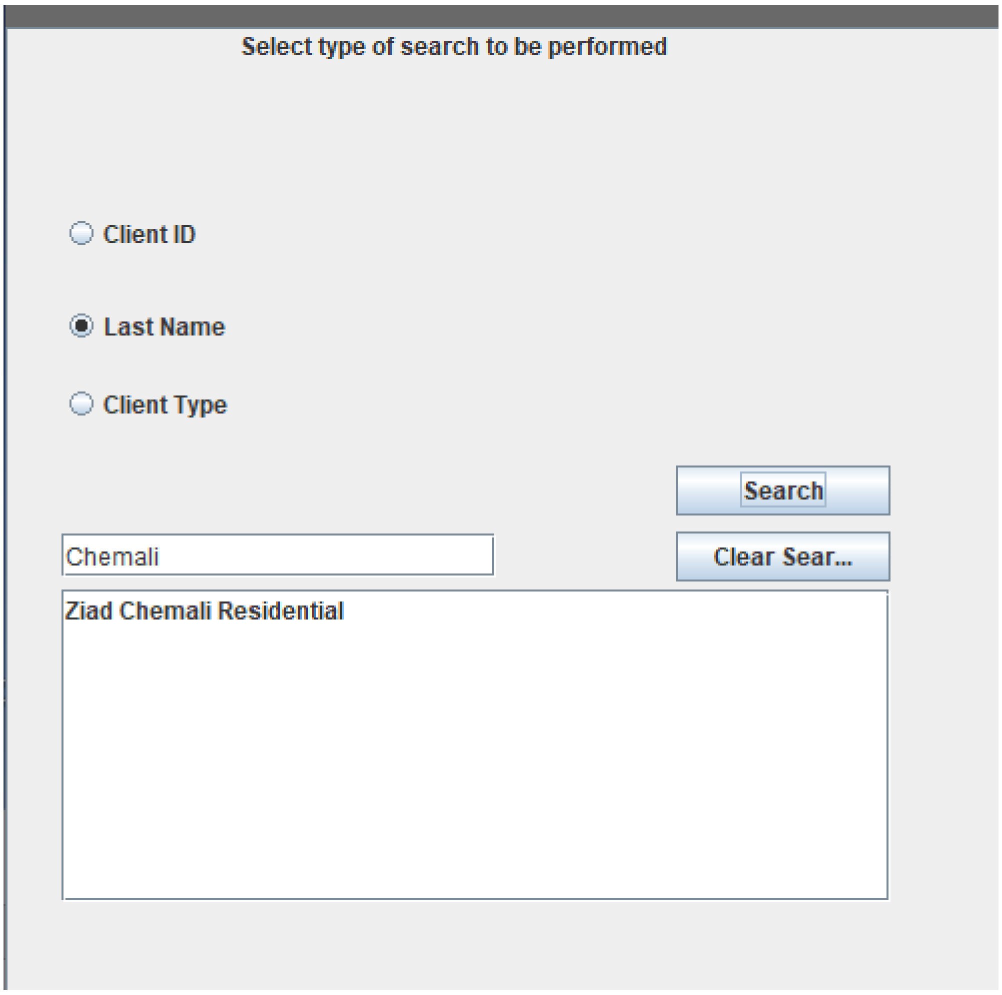
Simply fill in all the fields required, and click Add New Customer. Note: a unique client Id will be generated



Client Information

Clinet ID	
First Name	Ziad
Last Name	Chemali
Address	123 45 Ave
Postal Code	T1X 2JF
Phone Number	4033210848
Client Type	R

Double check by searching for the newly added customer



Select type of search to be performed

Client ID

[✓ Last Name]

Client Type

Chemali

Ziad Chemali Residential

Customer successfully added

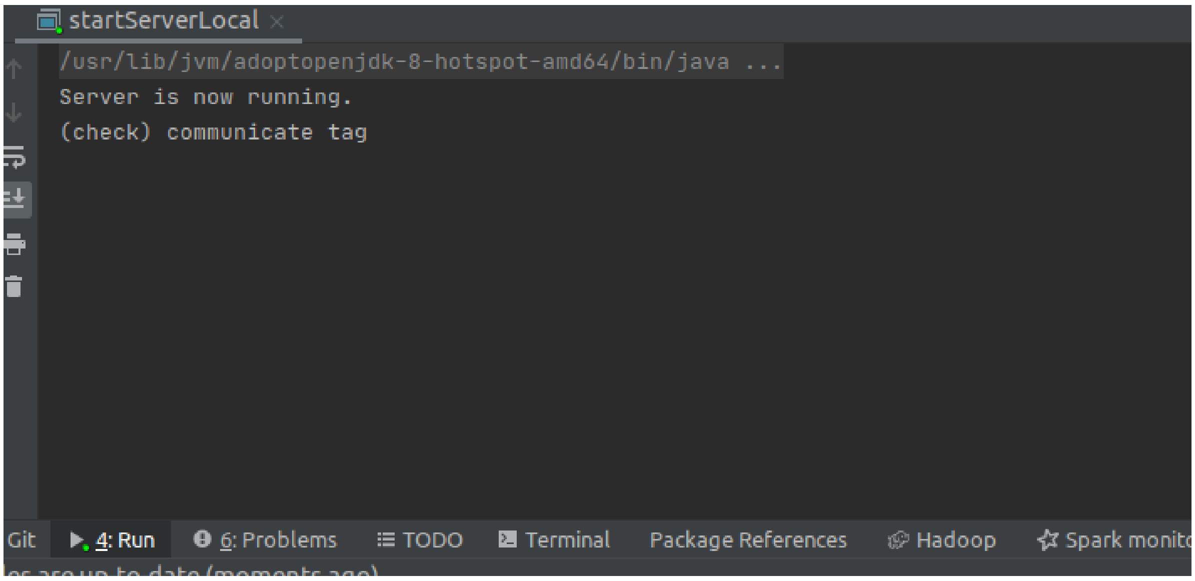
Back-End

How to start local backend server

to start the local backend server, compile and run

```
src/server/startServerLocal.java
```

if the console prints the following, it means the server is ready.



```
/usr/lib/jvm/adoptopenjdk-8-hotspot-amd64/bin/java ...
Server is now running.
(check) communicate tag
```

How to start remote backend server

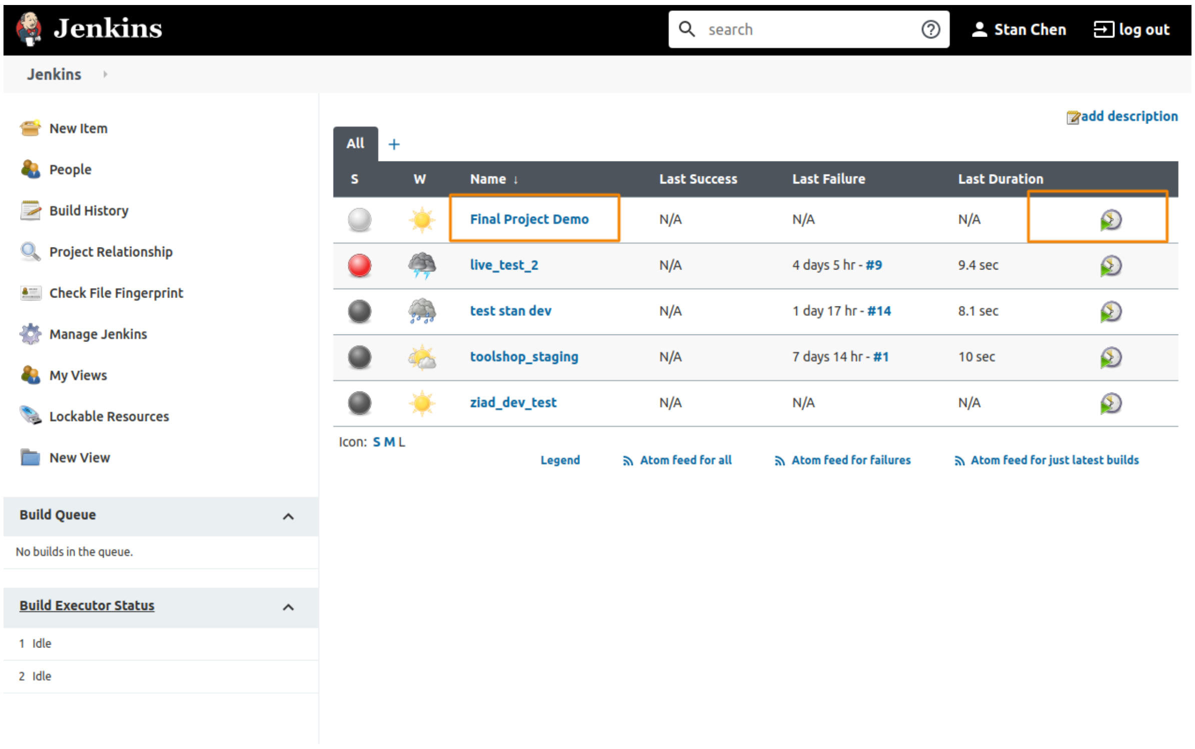
Note: For temporary demo purpose, Prof & TA can access:

Our jenkins build server http://54.185.156.100:8080/

username: `ensf`

password: `ensf607`

If server is not running, build the job "Final Project Demo" to start the backend server.



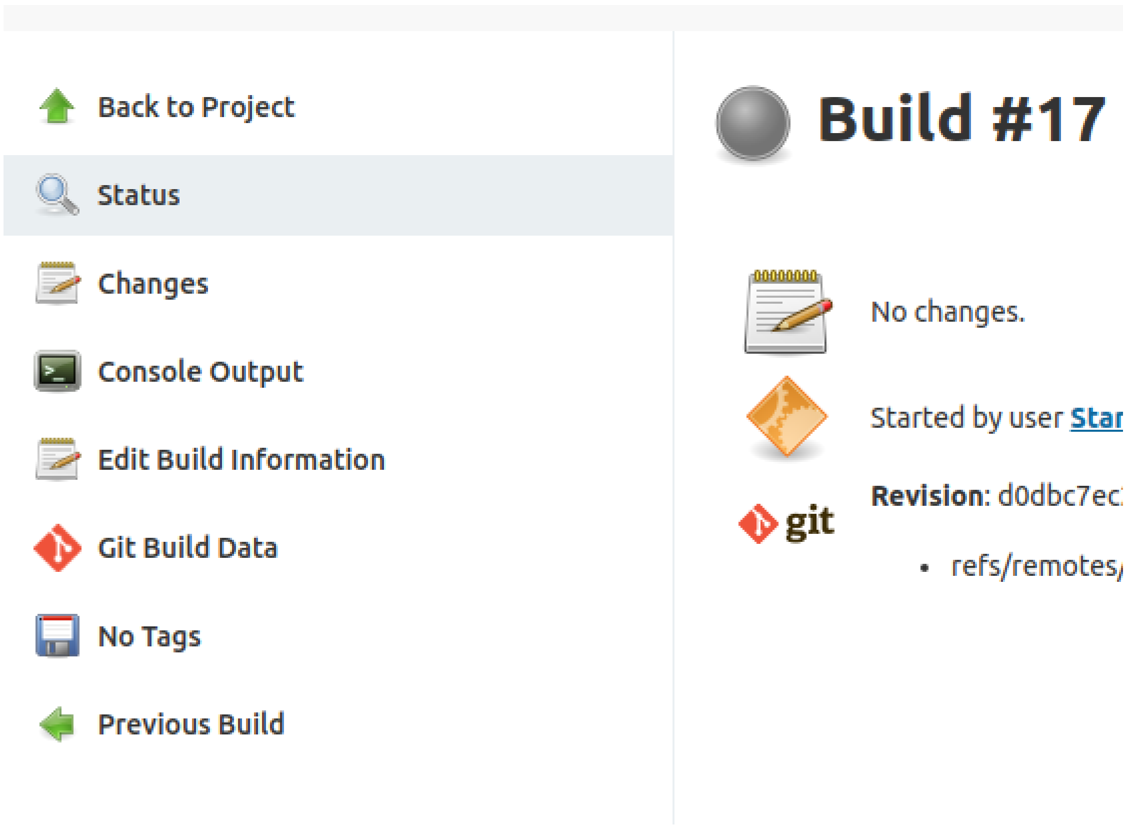
No builds in the queue.

1 Idle
2 Idle

S	W	Name ↓	Last Success	Last Failure	Last Duration	
		Final Project Demo	N/A	N/A	N/A	
		live_test_2	N/A	4 days 5 hr - #9	9.4 sec	
		test stan dev	N/A	1 day 17 hr - #14	8.1 sec	
		toolshop_staging	N/A	7 days 14 hr - #1	10 sec	
		ziad_dev_test	N/A	N/A	N/A	

Icon: S M L

click into the project



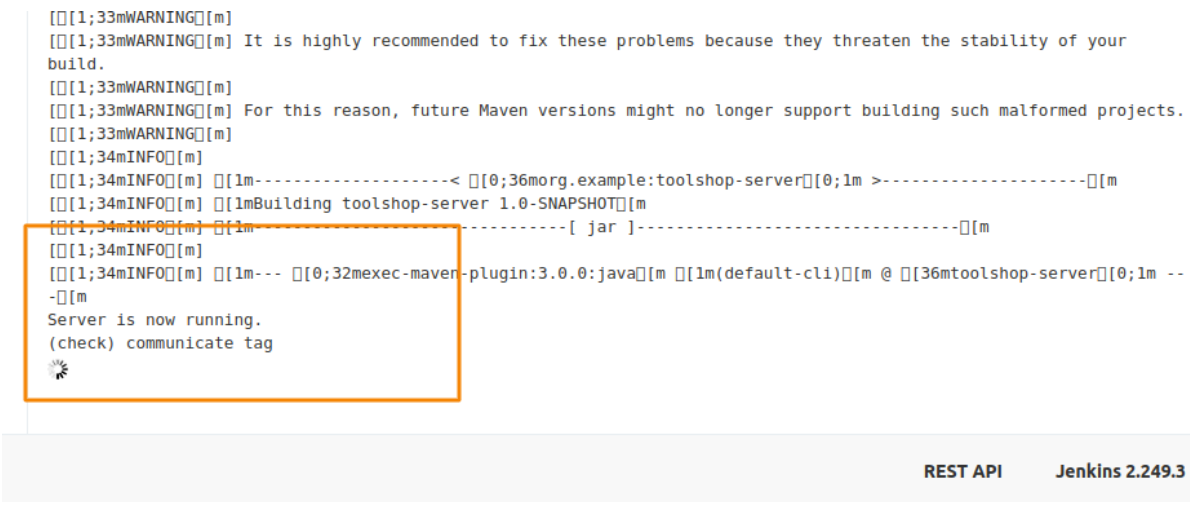
No changes.

Started by user Star

Revision: d0dbc7ec

- refs/remotes/

In this job page, click `Console Output`,



```
[[1;33mWARNING[m]
[[1;33mWARNING[m] It is highly recommended to fix these problems because they threaten the stability of your
build.
[[1;33mWARNING[m]
[[1;33mWARNING[m] For this reason, future Maven versions might no longer support building such malformed projects.
[[1;33mWARNING[m]
[[1;34mINFO[m]
[[1;34mINFO[m] [1m-------------------< [0;36morg.example:toolshop-server[0;1m >--------------------[m
[[1;34mINFO[m] [1mBuilding toolshop-server 1.0-SNAPSHOT[m
[[1;34mINFO[m] [1m--------------------------------[ jar ]---------------------------------[m
[[1;34mINFO[m]
[[1;34mINFO[m] [1m--- [0;32mexec-maven-plugin:3.0.0:java[m [1m(default-cli)[m @ [36mtoolshop-server[0;1m --
-[m
Server is now running.
(check) communicate tag
```

If the end of the console log prints the logs as above, this means the server is ready to serve.

Testing

Jenkins were introduced as a tool to help with the deployment/testing purposes. Script used for compiling and running the backend server in Jenkins build execute shell:

```
# export CLASSPATH=jars/*.jar
mvn -v
echo "building maven package"
mvn clean install -U
mvn clean package
echo "initing server"
echo "building maven package"
mvn package
echo "initing server"
mvn exec:java -Dexec.mainClass="server.controller.ServerController" -
Dexec.classpathScope=runtime
```

Develop setup

1. this is classic java project. `jars/mysql-connector-java-8.0.22.jar` needs to be added to class path.
2. Alternatively, if using maven, just use pom.xml to fullfil the dependencies.