IBM NALAIYATHIRAN PROJECT REPORT

Domain: Retails and E-Commerce (R&E)

Title: Customer Care Registry

Submitted by

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1. INTRODUCTION

A comprehensive online Client Care Solution is used to manage customer interactions and complaints with Service Providers via phone or e- mail. The system must be able to integrate with any service provider from any field or sector, including banking, telecommunications, insurance, etc. The provision of service to consumers, commonly referred to as client service, has varying significance depending on the product, business, and domain. When making a purchase of a service rather than a product, customer service is frequently of greater importance. People or Sales & Service Representatives may offer customer service. The customer value proposition of a business typically includes excellent customer service.

1.1 PROJECT OVERVIEW

The Customer Service Desk project is online. The provision of service to customers is known as customer service or client service. The importance varies depending on the product, industry, and domain. When information relates to a service rather than a customer, customer service is frequently more crucial. A service representative might offer customer service. The customer value proposition of a business typically includes excellent customer service. Software like Flask, Docker, SendGrid, and IBM Watson are used to implement this.

1.2 PURPOSE

The project's goal is to create customer engagement, address customerissues, and offer a helpful service. It is an essential component of all businesses.

2. LITERATURE SURVEY

2.1 EXISTING PROBLEM

The information is now saved in disc drives in the form of excel sheets in a semiautomated approach. Only the mailing feature is used to share information with Volunteers, Group members, etc. In this system, information maintenance and storage are increasingly crucial. It is a hard task to monitor the members' activities and the development of the work here. This system is unable to offer information exchange every day of the week.

2.2 REFERENCES

- a) In this article, a Chabot from the AWS cloud is deployed for customer care. Real world smart Chabot for customer care using SaaS architecture. This is done to offer cognitive and LUIS services to humans.
- b) Chat bots for customer service are used in this paper in place of human customer service representatives. It makes decisions and offers services using AI.
- c) Client service chatbot In this paper, the customer gives the chatbot the information it needs based on the information it gives the customer service.
- d) A clever cloud-based customer relationship management system that uses adjustable pricing to maintain customers. This essay analyses historical patterns to suggest consumer behavior that might be used for marketing.

2.3 PROBLEM STATEMENT DEFINITION

A problem statement is a concise description of the problem or issues a project seeks to address. The problem statement identifies the current state, the desired future state and any gaps between the two. A problem statement is an important communication tool that can help ensure everyone working on a project knows what the problem they need to address is and why the project is important.

3. IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

An empathy map is a straightforward, simple-to-understand picture that summarizes information about a user's actions and views. It is a helpful tool that enables teams to comprehend their users more fully. It's important to comprehend both the actual issue and the person who is experiencing it in order to develop a workable solution. Participants learn to think about situations from the user's perspective, including goals and challenges, through the exercise of creating the map.

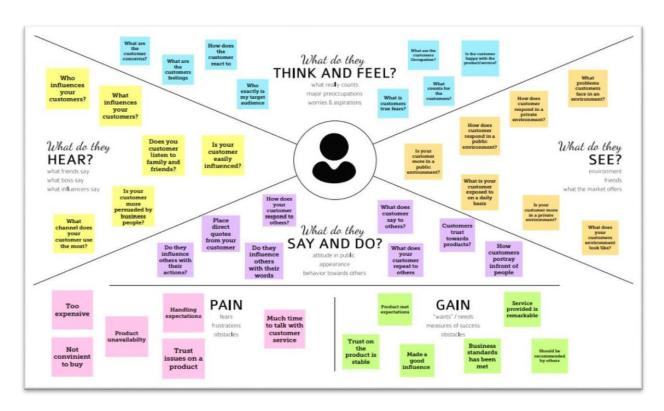
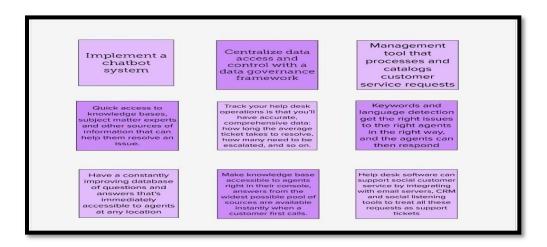


Fig 3.1: Empathy Map Canvas

3.2 IDEATION AND BRAINSTORMING

- 1. What issues are you attempting to address? Describe the issues.
- 2. How might we address the issue? Which does the customer raise?

Group Ideas:



3.3 PROPOSED SOLUTION

Allotted By sending the email directly to a specific agent about the problem, agent routing can be fixed. automated ticket closure by cloud database sync. The customer's status display may include their tickets. The platform that will enable the customer specialist to be effective is what the customer care service aims to give. And it takes less time to find the answer.

4. REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through
		Form Registration
		through Gmail
		Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email
		Confirmation via OTP
FR-3	Customer Query	Access through email and chatbot from the chosen
		website
FR-4	Database	preserving the modelled item
FR-5	Feedback	Customer's Feedback
FR-6	E-Mail	Login alertness

NON-FUNCTIONAL REQUIREMENTS

FR No.	Non-Functional Requirement	Description		
NFR-1	Usability	To offer a remedy for the issue, user friendly.		
NFR-2	Security	Logging and authentication history		
NFR-3	Reliability	Tracking the status of the decade viaemail		
NFR-4	Performance	responsive and adaptable		
NFR-5	Availability	24/7 Support		
NFR-6	Scalability	Scalability of agents according to consumer volume		

5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAM

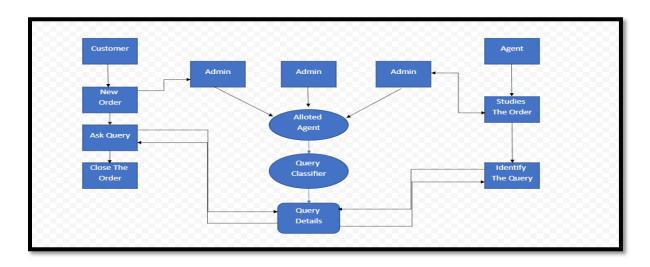


Fig 5.1: Data Flow Diagram

5.2 SOLUTION AND TECHNICAL ARCHITECTURE

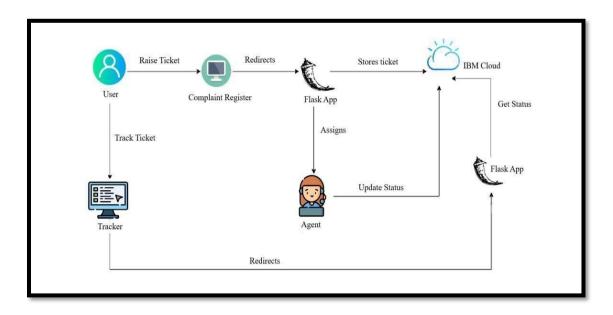


Fig 5.2: Solution and Technical Architecture

6. PROJECT PLANNING & SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High
Sprint-2		USN-3	As a user, I can register for the application through Facebook	2	Low
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2	Medium
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1	High
	Dashboard	USN-6	Create a model set that contains those models, then assign it to a role.		High
Sprint-3		USN-7	Open, public access, User- aut,1enticated access, Employee- restricted access		High

6.2 SPRINT DELIVERY SCHEDULE

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022		
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022		
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022		

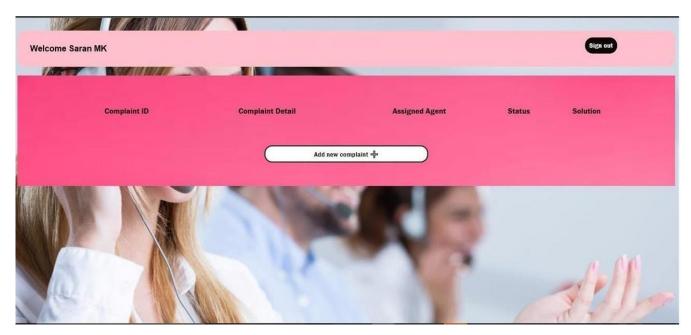
6.3 REPORTS FROM JIRA

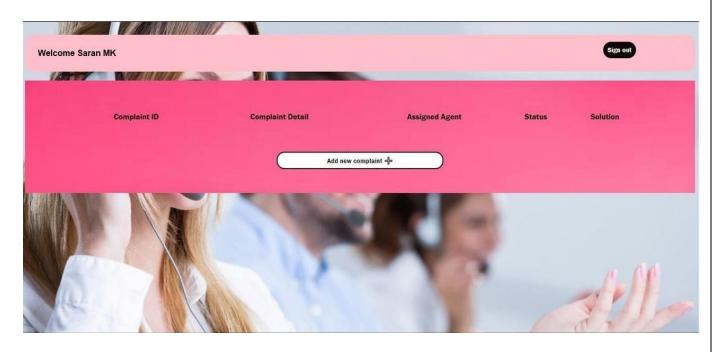
CCR-3 The user will login into the website and go throug	DONE~
CCR-4 The role of the agent is to check out the complaint	DONE~
CCR-5 The role of the admin is to check out the database	DONE ~
CCR-6 he user can directly talk to Chatbot regarding the	DONE~
CCR-7 Container of applications using docker kubernetes	DONE~

7. CODING & SOLUTION

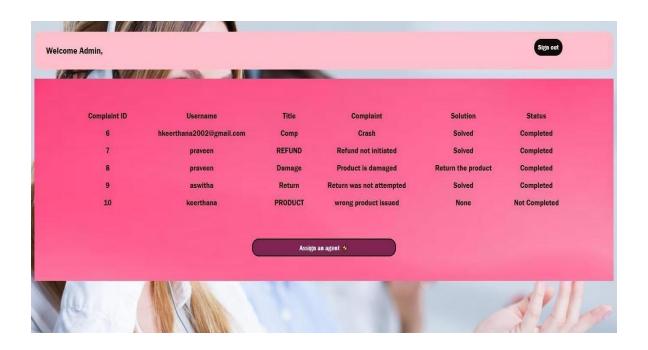
7.1 FEATURE

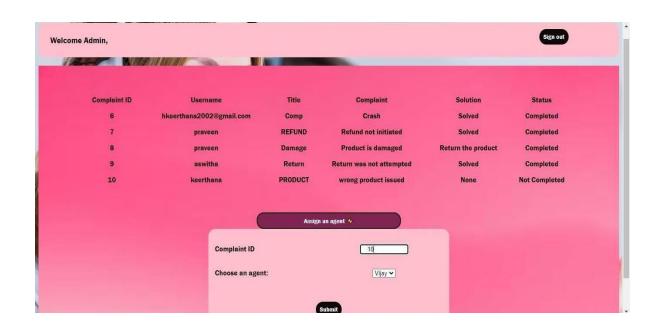


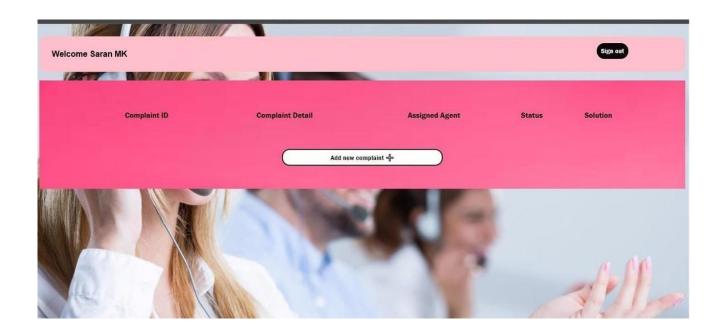




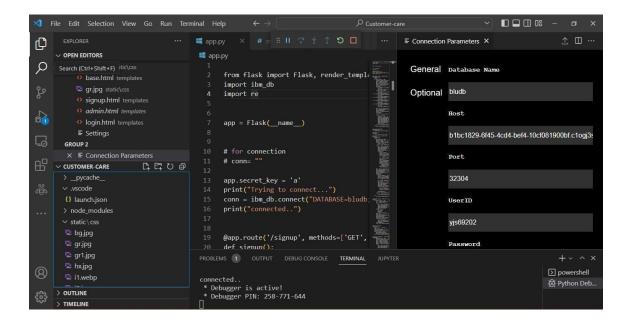
7.2 FEATURE



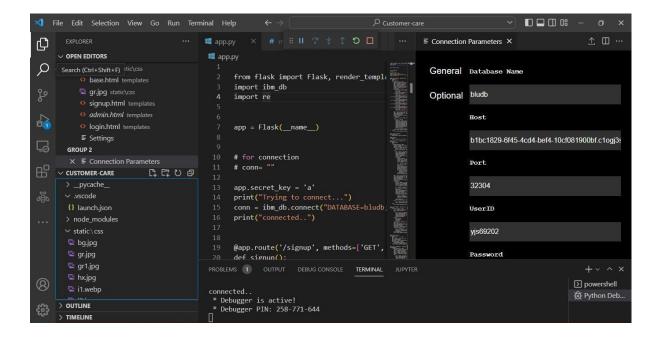




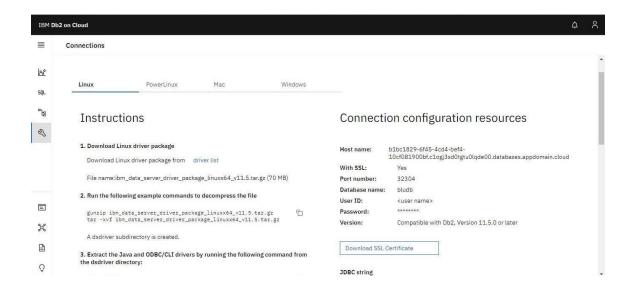
7.3 DATABASE SCHEMA CONNECTING TO DATABASE:

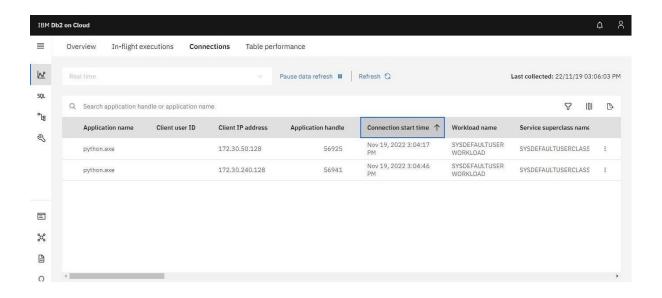


SERVICE CEREDENTIALS:

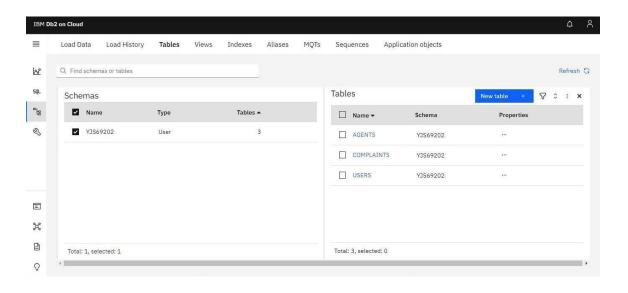


CONNECTIONS:

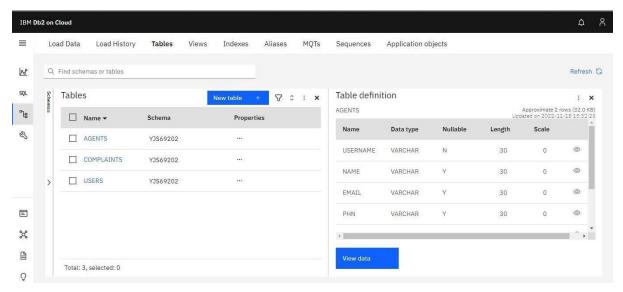




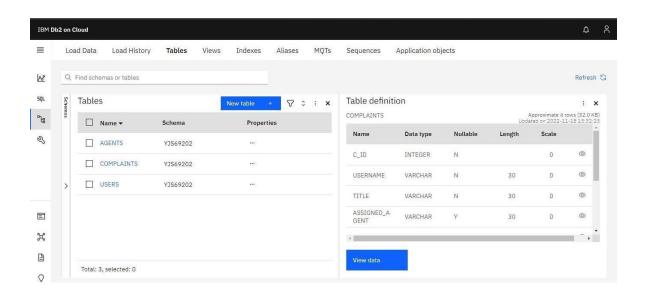
DATA TABLES:



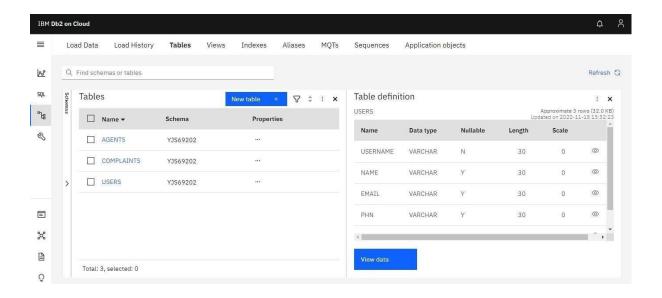
AGENT TABLE:



COMPLAINT TABLE:



USER TABLE:



Job Calendar:

When a user chooses a day from the job calendar, a list of jobs that are openon that day is displayed on the same page. Ajax features were used to construct this functionality from scratch.

8. TESTING

8.1 TEST CASES

Test Case	Feature	Component	Test	Expected	Result
ID	Type		Scenario	Result	Status
01	Functional	user page	Verify useris able to see show complain popup	Show complain popup displayed	Pass
02	UI	user page	Verify user has no complain	No complain displayed	Pass
03	UI	AGENT login	Text field visible to enter email	Text field visible	Pass
04	UI	User login	Text field visible to enter email	Text field visible	Pass
05	UI	Agent login	Text field visible to enter password	Text field visible	Pass

8.2 USER ACCEPTANCE TESTING

Test Case	Feature	Component	Test	Expected	Result
ID	Type		Scenario	Result	Status
01	Functional	Home page	Verify user is able to see the login/signup popup when clicked on my account	Login/Signup displayed	pass
02	Ui	Home page	Verify the UI elements in the Login/Signup	The UI elements Working	pass
03	Functional	Home page	Verify user is able to login to the application with valid credentials	Login successful	pass
04	Functional	login page	Verify user cannot login to the application without valid credentials	Login unsuccessful	pass

9. RESULT

This project is designed to solve the customer queries and achieve customer satisfaction. It is a web-enabled project. With this project the details about the product will be given to the customers in detail within a short span of time. Queries regarding the product or the services will also be clarified. It provides more knowledge about the various technologies.

10. ADVANTAGES AND DISADVANTAGES

Advantage

- Provides total population data reporting with no chart abstraction.
- Generates revenue (it shows when services are needed).
- Provides outreach information at fingertips.
- Flow sheet is a powerful tool to monitor clinical data and track trends.
- Provides a dashboard of who needs what.
- Improves team-based care.
- Smaller software package than EHRs.

Disadvantage

- Parallel documentation system
- Does not include information necessary for billing.
- Requires hardware, software and maintenance.
- Requires data entry and data maintenance.
- Experience burnout and stress.

11. CONCLUSION

The goal of this project is to satisfy customers by providing answers to their questions. The project is web-enabled. With the help of this project, clients will quickly receive detailed information about the product. Questions about the goods or services will also be answered. More information about the various technologiesis provided.

12. FUTURE SCOPE

- 1. Answering each customer's question individually.
- 2. It is a pivotal moment for marketing.
- 3. It will bring about a major revolution.

14.APPENDIX

Source Code:

```
from flask import Flask, render_template, request, redirect, session, url_forimport ibm_db
import re
app = Flask(\underline{\hspace{1cm}}name\underline{\hspace{1cm}})
# for connection#
conn=""
app.secret_key = 'a'
print("Trying to connect...")
conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=b1bc1829-6f45-4cd4-bef4-
10cf081900bf.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud;PORT=32304;SE
CURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=yjs69202;P
WD=nCHXXVA1056i46ky;", ", ")
print("connected..")
@app.route('/signup', methods=['GET', 'POST'])def
signup():
  global userid
   msg = "
   if request.method == 'POST': username =
      request.form['username']name =
     request.form['name']
      email = request.form['email'] phn =
     request.form['phn'] password =
      request.form['pass']repass =
      request.form['repass'] print("inside
     checking") print(name)
     if len(username) == 0 or len(name) == 0 or len(email) == 0 or len(phn) == 0 or
len(password) == 0 or len(repass) == 0:
        msg = "Form is not filled completely!!"
```

```
print(msg)
  return render_template('signup.html', msg=msg)elif
password != repass:
  msg = "Password is not matched"
  print(msg)
  return render_template('signup.html', msg=msg)elif not
re.match(r'[a-z]+', username):
  msg = 'Username can contain only small letters and numbers'print(msg)
  return render template('signup.html', msg=msg)elif not
re.match(r'[^@]+@[^@]+\.[^@]+', email):
  msg = 'Invalid email'
  print(msg)
  return render_template('signup.html', msg=msg)elif not
re.match(r'[A-Za-z]+', name):
  msg = "Enter valid name"
  print(msg)
  return render_template('signup.html', msg=msg)elif not
re.match(r'[0-9]+', phn):
  msg = "Enter valid phone number"
  print(msg)
  return render_template('signup.html', msg=msg)
sql = "select * from users where username = ?"stmt =
ibm_db.prepare(conn, sql) ibm_db.bind_param(stmt,
1, username) ibm db.execute(stmt)
account = ibm db.fetch assoc(stmt)
print(account)
if account:
  msg = 'Account already exists'else:
  userid = username
  insert_sql = "insert into users values(?,?,?,?)"
  prep stmt = ibm db.prepare(conn, insert sql)
  ibm_db.bind_param(prep_stmt, 1, username)
  ibm_db.bind_param(prep_stmt, 2, name)
  ibm_db.bind_param(prep_stmt, 3, email)
  ibm_db.bind_param(prep_stmt, 4, phn)
  ibm_db.bind_param(prep_stmt, 5, password)
```

```
ibm_db.execute(prep_stmt)print("successs")
        msg = "succesfully signed up"
     return render_template('dashboard.html', msg=msg, name=name)else:
     return render_template('signup.html')
@app.route('/dashboard') def
dashboard():
  return render_template('dashboard.html')
@app.route('/')
def base():
  return redirect(url_for('login'))
@app.route('/login', methods=["GET", "POST"])def
login():
  global userid
  msg = "
  if request.method == 'POST': username =
     request.form['username']userid = username
     password = request.form['pass']
     if userid == 'admin' and password == 'admin':print("its
        admin")
        return render_template('admin.html')else:
        sql = "select * from agents where username = ? and password = ?"stmt =
        ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt, 1, username)
        ibm db.bind param(stmt, 2, password)
        ibm_db.execute(stmt)
        account = ibm db.fetch assoc(stmt)
        print(account)
        if account: session['Loggedin'] =
           True
           session['id'] = account['USERNAME']userid
           = account['USERNAME']
           session['username'] = account['USERNAME']
```

```
msg = 'logged in successfully'
           # for getting complaints details
           sql = "select * from complaints where assigned_agent = ?"complaints
           = []
           stmt = ibm_db.prepare(conn, sql)
           ibm_db.bind_param(stmt, 1, username)
           ibm db.execute(stmt)
           dictionary = ibm db.fetch assoc(stmt)while
           dictionary != False:
              complaints.append(dictionary) dictionary =
              ibm_db.fetch_assoc(stmt)
           print(complaints)
           return render_template('agentdash.html', name=account['USERNAME'],
complaints=complaints)
     sql = "select * from users where username = ? and password = ?"stmt =
     ibm_db.prepare(conn, sql)
     ibm_db.bind_param(stmt, 1, username)
     ibm_db.bind_param(stmt, 2, password)
     ibm_db.execute(stmt)
     account = ibm_db.fetch_assoc(stmt)
     print(account)
     if account: session['Loggedin'] =
        True
        session['id'] = account['USERNAME']userid
        = account['USERNAME']
        session['username'] = account['USERNAME']msg =
        'logged in successfully'
        # for getting complaints details
        sql = "select * from complaints where username = ?"complaints = []
        stmt = ibm db.prepare(conn, sql)
        ibm_db.bind_param(stmt, 1, username)
        ibm db.execute(stmt)
        dictionary = ibm_db.fetch_assoc(stmt)while
        dictionary != False:
           # print "The ID is:", dictionary["EMPNO"]# print
           "The Name is: ", dictionary[1]
```

```
complaints.append(dictionary) dictionary =
           ibm_db.fetch_assoc(stmt)
        print(complaints)
        return render_template('dashboard.html', name=account['USERNAME'],
complaints=complaints)
     else:
        msg = 'Incorrect user credentials'
        return render_template('dashboard.html', msg=msg)
  else:
     return render_template('login.html')
@app.route('/addnew', methods=["GET", "POST"])def
add():
  if request.method == 'POST':title
     = request.form['title'] des =
     request.form['des'] try:
        sql = "insert into complaints(username,title,complaint) values(?,?,?)"stmt =
        ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt, 1, userid)
        ibm_db.bind_param(stmt, 2, title)
        ibm_db.bind_param(stmt, 3, des)
        ibm_db.execute(stmt)
     except:
        print(userid)
        print(title) print(des)
        print("cant insert")
     sql = "select * from complaints where username = ?"complaints
     = []
     stmt = ibm_db.prepare(conn, sql)
     ibm db.bind param(stmt, 1, userid)
     ibm_db.execute(stmt)
     dictionary = ibm_db.fetch_assoc(stmt)while
     dictionary != False:
        # print "The ID is:", dictionary["EMPNO"]# print
        "The Name is: ", dictionary[1]
        complaints.append(dictionary)
```

```
dictionary = ibm_db.fetch_assoc(stmt)
     print(complaints)
     return render template('dashboard.html', name=userid,
complaints=complaints)
@app.route('/agents') def
agents():
  sql = "select * from agents"
  agents = []
  stmt = ibm_db.prepare(conn, sql)
  ibm_db.execute(stmt)
  dictionary = ibm_db.fetch_assoc(stmt)while
  dictionary != False:
     agents.append(dictionary)
     dictionary = ibm db.fetch assoc(stmt)
  return render_template('agents.html', agents=agents)
@app.route('/addnewagent', methods=["GET", "POST"])def
addagent():
  if request.method == 'POST': username =
     request.form['username']name =
     request.form['name']
     email = request.form['email'] phone =
     request.form['phone'] domain =
     request.form['domain']
     password = request.form['password']try:
        sql = "insert into agents values(?,?,?,?,?,?)"stmt =
        ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt, 1, username)
        ibm_db.bind_param(stmt, 2, name)
        ibm_db.bind_param(stmt, 3, email)
        ibm_db.bind_param(stmt, 4, phone)
        ibm_db.bind_param(stmt, 5, password)
        ibm_db.bind_param(stmt, 6, domain)
        ibm_db.execute(stmt)
     except:
        print("cant insert")
```

```
sql = "select * from agents"
     agents = []
     stmt = ibm_db.prepare(conn, sql)
     ibm db.execute(stmt)
     dictionary = ibm_db.fetch_assoc(stmt)while
     dictionary != False:
        agents.append(dictionary)
        dictionary = ibm_db.fetch_assoc(stmt)
     return render_template('agents.html', agents=agents)
@app.route('/updatecomplaint', methods=["GET", "POST"])def
updatecomplaint():
  if request.method == 'POST':cid =
     request.form['cid']
     solution = request.form['solution']try:
        sql = "update complaints set solution =?,status=1 where c_id = ? and assigned_agent=?"
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt, 1, solution)
        ibm_db.bind_param(stmt, 2, cid)
        ibm_db.bind_param(stmt, 3, userid)
        ibm db.execute(stmt)
        sql = "update agents set status = 3 where username = ?"stmt =
        ibm_db.prepare(conn, sql) ibm_db.bind_param(stmt, 1, userid)
        ibm db.execute(stmt)
     except:
        print("cant insert")
     sql = "select * from complaints where assigned_agent = ?"complaints = []
     stmt = ibm db.prepare(conn, sql)
     ibm db.bind param(stmt, 1, userid)
     ibm db.execute(stmt)
     dictionary = ibm db.fetch assoc(stmt)while
     dictionary != False:
        complaints.append(dictionary) dictionary =
        ibm_db.fetch_assoc(stmt)
```

```
# print(complaints)
     return render_template('agentdash.html', name=userid,
complaints=complaints)
@app.route('/tickets') def
tickets():
  sql = "select * from complaints" complaints =
  stmt = ibm_db.prepare(conn, sql)
  ibm_db.execute(stmt)
  dictionary = ibm_db.fetch_assoc(stmt)while
  dictionary != False:
     complaints.append(dictionary) dictionary =
     ibm_db.fetch_assoc(stmt)
  sql = "select username from agents where status <> 1"freeagents =
  stmt = ibm_db.prepare(conn, sql)
  ibm db.execute(stmt)
  dictionary = ibm_db.fetch_assoc(stmt)while
  dictionary != False:
     freeagents.append(dictionary) dictionary =
     ibm db.fetch assoc(stmt)
  print(freeagents)
  return render_template('tickets.html', complaints=complaints,freeagents=freeagents)
@app.route('/assignagent', methods=['GET', 'POST'])def
assignagent():
  if request.method == "POST": ccid
     = request.form['ccid'] agent =
     request.form['agent']print(ccid)
     print(agent)
     try:
        sql = "update complaints set assigned_agent =? where c_id = ?"stmt =
        ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt, 1, agent)
```

```
ibm_db.bind_param(stmt, 2, ccid)
    ibm_db.execute(stmt)
    sql = "update agents set status =1 where username = ?"stmt =
    ibm_db.prepare(conn, sql) ibm_db.bind_param(stmt, 1, userid)
    ibm_db.execute(stmt)
    except:
        print("cant update")
    return redirect(url_for('tickets'))

if___name___ == "___main___":
    app.run(debug=True)
```

GitHub Repository Link:

https://github.com/IBM-EPBL/IBM-Project-34470-1660236275

G-drive link:

https://drive.google.com/drive/folders/1HPcWIQZuW-Oey1O1zxySjeZgwBc89ekl?usp=share_link