PROJECT ON

"QUIZ MASTER"

SUBMITTED TO
CENTRAL BOARD OF SECONDARY EDUCATION

COMPUTER SCIENCE
(CLASS XII)
2021-2022

Submitted By:

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NAVY CHILDREN SCHOOL
VISAKHAPATNAM

CERTIFICATE

This is to certify that **Saikat Saha** of **class XII**, bearing Roll No. **20611517** has successfully completed his/her project on "**QUIZ MASTER**" in database connectivity for All India Senior School Certificate Examination (AISSCE) 2022.

Internal Examiner **Principal**

External Examiner

ACKNOWLEDGEMENT

I would like to express my profound sense of gratitude to my guide **Mr.Mukesh bohra ,**PGT Computer Science, **Navy Children School Nausena Baugh,** for inspiring and guiding me throughout the record. The suggestions and ideas given by my guide were most valuable I came to know about so many new things.

Apart from the efforts of me, the success of any project depends largely on the encouragement and guidelines of many others. I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this project.

I express deep sense of gratitude to almighty God for giving me strength for the successful completion of the project.

I would like to thank **Dr. Parul Kumar, Principal of Navy Children School,Nausena Baugh,** for supporting me in my endeavors.

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OBJECTIVE OF THE PROJECT

The objective of this project is to let the students apply the programming knowledge into a real- world situation/problem and exposed the students how programming skills helps in developing a good software.

1. Write programs utilizing modern software tools.

2. Apply object oriented programming principles effectively when developing small to medium sized projects.

3. Write effective procedural code to solve small to medium sized problems.

4. Students will demonstrate a breadth of knowledge in computer science, as exemplified in the areas of systems, theory and software development.

5. Students will demonstrate ability to conduct a research or applied computer Science project, requiring writing and presentation skills which exemplify scholarly style in computer science.

INTRODUCTION

1. This project name is Quiz Master, in which the userwill register with their details and then login to take the quiz.

2. The admin with the admin password can use this code to change the information in backend database.

3. The project is built in Python programming language as the front end and MySQL database is used at the backend.

PROPOSED SYSTEM

Today one cannot afford to rely on the fallible human beings of be really wants to stand against merciless competition where not to wise saying “to err is human” no longer valid, it’s outdated to rationalize your mistake. So, to keep pace with time, to bring about the best result without malfunctioning and greater efficiency so to replace the unending heaps of flies with a much more sophisticated hard disk of the computer.One has to use the data management

software. Software has been an ascent in atomization of various organizations. Many software products working are now in markets, which have helped in making the organizations work easier and efficiently. Datamanagement initially had to maintain a lot of ledgers and a lot of paperwork has to be done but now software production this organization has made their work faster andeasier. Now only this software has to be loaded on the computer and work can be done.This prevents a lot of time and money.

About Python

Python is developed under an OSI-approved open source license, making it freely usable and distributable, even for commercial use. Python's license is administered by the Python Software Foundation. Python is a widely-used, interpreted, object-oriented, and high-level programming language with dynamic semantics, used for general Purpose programming. It was created by Guido van Rossum, and first released on February 20, 1991. While you may know the python as a large snake, the name of the Python programming language comes from an old BBC television comedy sketch series called Monty Python's Flying Circus.One of the amazing features of Python is the fact that it is actually one person's work. Python is an exception Of course, van Rossam did not develop and evolve all the Python components himself. The speedwith which Python has spread around the world is a result of the continuous work of thousandsprogrammers, testers, users (many of them aren't IT specialists) and enthusiasts, but it must be said that the very first idea (the seed from which Python sprouted) came to one head – Guido's.

Why Python?

What makes Python so special? How does it happen that programmers, young and old, experienced and novice, want to use it? How did it happen that large companies adopted Python and implemented their flagship products using it?

There are many reasons – we've listed some of them already, but let's enumerate them again in a more practical manner:

1. it's easy to learn – the time needed to learn Python is shorter than for many other languages; this means that it's possible to start the actual programming faster;
2. it's easy to teach – the teaching workload is smaller than that needed by other languages; this means that the teacher can put more emphasis on general (language-independent) programming techniques, not wasting energy on exotic tricks, strange exceptions and incomprehensible rules;

3. it’s easy to use for writing new software – it’s often possible to write code faster when using Python;it’s easy to understand – it’s also often easier to understand someone else’s code faster if it is written in Python;

4. it’s easy to obtain, install and deploy – Python is free, open and multiplatform; not all languages can boast that.

Python in Action

Where can we see Python in action?
We see it every day and almost everywhere. It’s used extensively to implement complex Internet services like search engines, cloud storage and tools, social media and so on. Whenever you use any of these services, you are actually very close to Python, although you wouldn’t know it. Many developing tools are implemented in Python.More and more everyday use applications are being written in Python. Lots of scientists have abandoned expensive proprietary tools and switched to Python. Lots of IT project testers have started using Python to carry out repeatable test procedures.

Python Examples

Python is a great choice for:

• Web and Internet development (e.g., Django and Pyramid frameworks, Flask and Bottle micro frameworks)

• Scientific and numeric computing (e.g., SciPy – a collection of packages for the purposes of mathematics, science, and engineering;

• Desktop GUIs (e.g., wxWidgets, Kivy, Qt)

• Software Development (build control,

management, and testing – Scons, Buildbot,

Apache Gump, Roundup, Trac)

• Business applications (ERP and e-commerce

systems – Odoo, Tryton)

• Games (e.g., Battlefield series, Sid Meier\’s

Civilization IV...), websites and services (e.g.,

Dropbox, UBER, Pinterest, BuzzFeed...)

About mysql-connector

A database can be accessed from within a Python program with the help of DB API (Database Application Programming Interface) Modules. In order to communicate/access the MySQL databases, we'll use mysql.connector module. MySQL-connector is a self-contained Python driver for communicating with MySQL servers to develop database applications. It is a DB API module that enables Python programs to access MySQL databases. It consists of different functions to perform various database operations.This module does not come built-in with Python.To install it, type the below command in the terminal/command prompt :-

#pip install mysql-connector

#Steps for connecting to MySQL database from within a Python Program:

Pre-requisites: mysql-connector must be installed in your machine.

1. import

2. create connection

#using connect() returns connection object

3. create cursor object

#using cursor()-returns cursor object

4. execute the query

#using execute()-accepts query as string literal

5. fetch result(s), if used select command

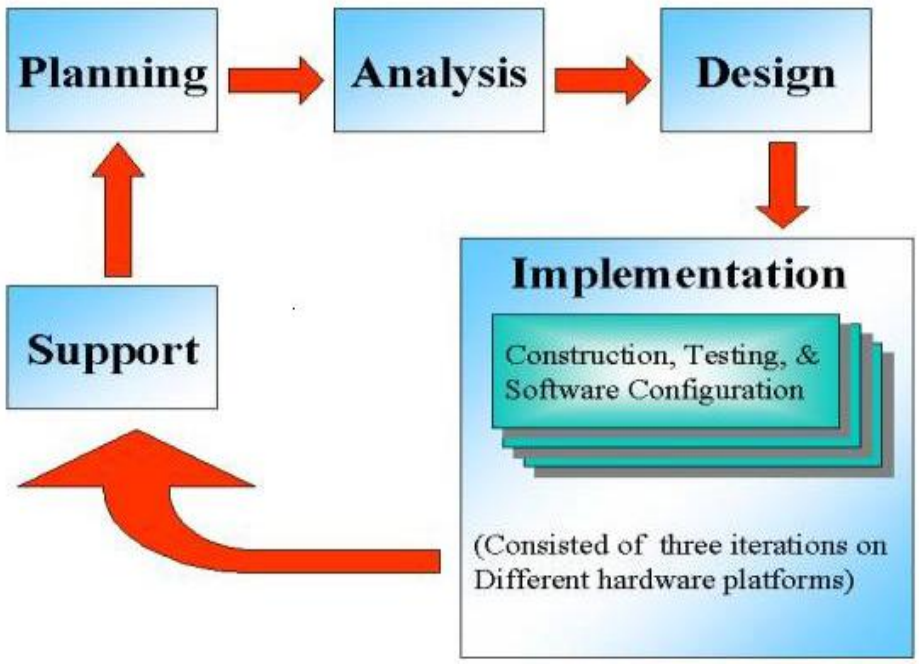
#fetchall(), fetchone(), fetchmany(n)

6. close the connection #using close()

About RDBMS Backend (MySQL)

Structured Query Language (SQL) is the most widely used commercial database language for creating, processing / manipulating and querying the relational DBMSs. Most of the RDBMS's rely on SQL for their data processing capabilities. It was originally developed at IBM's San Jose Research Laboratory in early 1970's. This language was originally named as Sequel. The sequel language has evolved since then, and its name has been changed to SQL. SQL continues to evolve in response to the changing needs in the database area.

SYSTEM DEVELOPMENT LIFE CYCLE (SDLC)



The systems development life cycle is a project management technique that divides complex projects into smaller, more easily managed segments or phases. Segmenting projects allows managers to verify the successful completion of project phases before allocating resources to subsequent phases. Software development projects typically include initiation, planning, design, development, testing, implementation, and maintenance phases. However, the phases may be divided differently depending on the organization involved.

For example, initial project activities might be designated as request, requirements-definition, and planning phases, or initiation, concept-development, and planning phases.

PHASES OF SYSTEM DEVELOPMENT LIFE CYCLE

INITIATION PHASE

The Initiation Phase begins when a business sponsor identifies a need or an opportunity.
The purpose of the Initiation Phase is to:

- Identify and validate an opportunity to improve business accomplishments of the organization or a deficiency related to a business need.
- Identify significant assumptions and constraints on solutions to that need.
- Recommend the exploration of alternative concepts and methods to satisfy the need including questioning the need for technology, i.e., will a change in the business process offer a solution?
- Assure executive business and executive technical sponsorship. The Sponsor designates a Project Manager and the business need is documented in a Concept Proposal. The Concept Proposal includes information about the business process andthe relationship to the Agency/Organization.
- Infrastructure and the Strategic Plan. A successful Concept Proposal results in a Project Management Charter which outlines the authority of the project manager to begin
  the project.

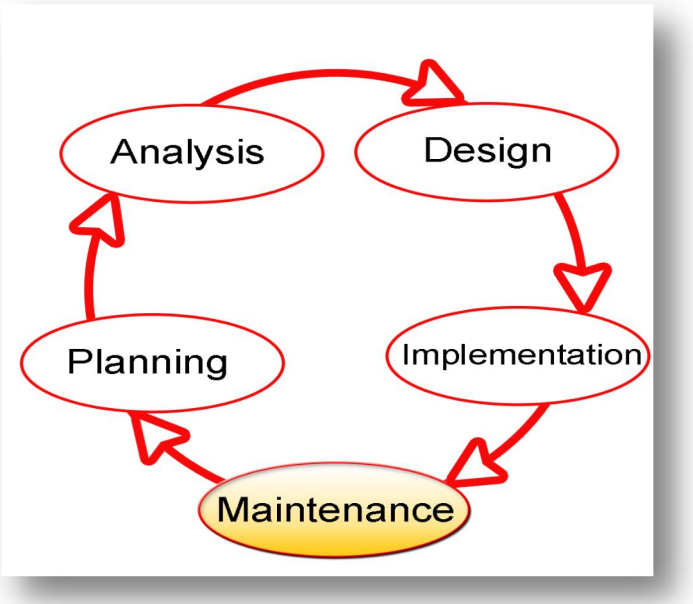
SYSTEM CONCEPT DEVELOPMENT PHASE

The System Concept Development Phase begins after a business need or opportunity is validated by the Agency/Organization Program Leadership and the Agency/Organization CIO.
The purpose of the System Concept Development Phase is to:

- Determine the feasibility and appropriateness of the alternatives.
- Identify system interfaces.
- Identify basic functional and data requirements to satisfy the business need.
- Establish system boundaries; identify goals, objectives, critical success factors, and performance measures.
- Evaluate costs and benefits of alternative approaches to satisfy the basic functional requirements
- Assess project risks

- Identify and initiate risk mitigation actions, andDevelop high-level technical architecture, process models, data models, and a concept of operations. This phase explores potential technical solutions within the context of the business need.

PICTORIAL REPRESENTATION OF SDLC:



PLANNING PHASE

The planning phase is the most critical step in completing development, acquisition, and maintenance projects. Careful planning, particularly in the early stages of a project, is necessary to coordinate activities and manage project risks effectively. The depth and formality of project plans should be commensurate with the characteristics and risks of a given project.

Project plans refine the information gathered during the initiation phase by further identifying the specific activities and resources required to complete a project.

REQUIREMENTS ANALYSIS PHASE

This phase formally defines the detailed functional user requirements using high-level requirements identified in the Initiation, System Concept, and Planning phases. It also delineates the requirements in terms of data, system performance, security, and maintainability requirements for the system. The requirements are defined in this phase to alevel of detail sufficient for systems design to proceed. They need to be measurable, testable, and relate to the business need or opportunity identified in the Initiation Phase. The

requirements that will be used to determine acceptance of the system are captured in the Test and Evaluation MasterPlan.

The purposes of this phase are to:

- Further define and refine the functional and data requirements and document them in the Requirements Document,
- Complete business process reengineering of the functions to be supported (i.e., verify what information drives the business process, what information is generated, who generates it, where does the information go, and who processes it),
- Develop detailed data and process models (system inputs, outputs, and the process.
- Develop the test and evaluation requirements that will be used to determine acceptable system performance**.**

DESIGN PHASE

The design phase involves converting the informational, functional, and network requirements identified during the initiation and planning phases into unified design specifications that developers use to scriptprograms during the development phase. Program designs are c onstructed in various ways. Using a top-down approach, designers first identify and link major program components and interfaces, then expand design layouts as they identify and link smaller subsystems and connections. Using a bottom-up approach, designers first identify and link minor program components and interfaces, then expand design layouts as they identify and link larger systems and connections. Contemporary design techniques often use prototyping tools that build mock-up designs of items such as application screens, database layouts, and system architectures. Since problems in the design phase could be very expensive to solve in the later stage of the software development, a variety of elements are considered in the design to mitigate risk. These include:

- Identifying potential risks and defining mitigating design features.
- Performing a security risk assessment.
- Developing a conversion plan to migrate current data to the new system.
- Determining the operating environment.
- Defining major subsystems and their inputs and outputs.
- Allocating processes to resources.
- Preparing detailed logic specifications for each software module. The result is a draft System Design Document which captures the preliminary design for the system.

DEVELOPMENT PHASE

The development phase involves converting design specifications into executable programs. Effective development standards include requirements that programmers and other project participants discuss design specifications before programming begins. The procedures help ensure programmers clearly understand program designs and functional requirements. Programmers use various techniques to develop computer programs. The large transaction oriented programs associated with financial institutions have traditionally been developed using procedural programming techniques. Procedural programming involves the line-by-line scripting of logical instructions that are combined to form a program.Effective completion of the previous stages is a key factor in the success of the Development phase. The Development phase consists of:

- Translating the detailed requirements and design into system components.
- Testing individual elements (units) for usability.
- Preparing for integration and testing of the IT system.

INTEGRATION AND TEST PHASE

Subsystem integration, system, security, and user acceptance testing is conducted during the integration and test phase. The user, with those responsible for quality assurance, validates that the functional requirements, as defined in the functional requirements document, are satisfied by the developed or modified system. OIT Security staff assess the system security and issue a security certification and accreditation prior to installation /implementation. Multiple levels of testing are performed, including:

- Testing at the development facility by the contractor and possibly supported by end users.
- Testing as a deployed system with end users working together with contract personnel.
- Operational testing by the end user alone performing all functions. Requirements are traced throughout testing,a final Independent Verification & Validation evaluation is performed and all documentation is reviewedand accepted prior to acceptance of the system.

IMPLEMENTATION PHASE

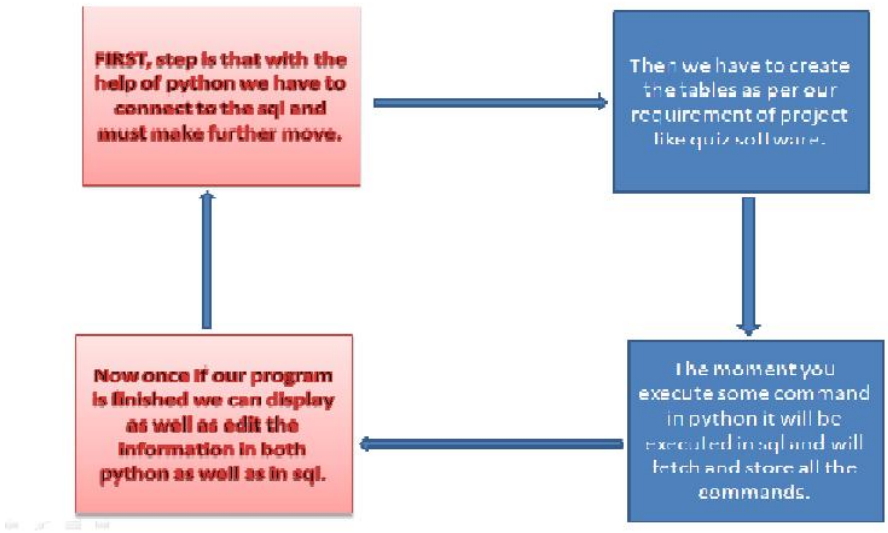
This phase is initiated after the system has been tested and accepted by the user. In this phase, the system is installed to support the intended business functions. System performance is compared to performance objectives established during the planning phase. Implementation includes user notification, user training, installation of hardware, installation of software onto production computers, and integration of the system into daily work processes. This phase continues until the system is operating in production in accordance with the defined userrequirements.

OPERATIONS AND MAINTENANCE PHASE

The system operation is ongoing. The system is monitored for continued performance in accordance with user requirements and needed system modifications are incorporated. Operations continue as long as the system can be effectively adapted to respond to the organization's needs. When modifications or changes are identified, the system may reenter the planning phase. The purpose of this phase is to:

- Operate, maintain, and enhance the system.
- Certify that the system can process sensitive information.
- Conduct periodic assessments of the system to ensure the functional requirements continue to be satisfied.
- Determine when the system needs to be modernized, replaced, or retired.

FLOW CHART



SOURCE CODE

Description and Global variables

```
"""
************************ NAVY CHILDREN SCHOOL ****************************
***************************** QUIZ MASTER ***************************
*******  Designed and Maintained By :-
*******  SAIKAT SAHA                -  CLASS XII B  [ 2021-2022 ]
*******  PRAVALLIKA KANDRELA     -  CLASS XII B  [ 2021-2022 ]
*******  PARTIK PRATIHAR            -  CLASS XII B  [ 2021-2022 ]
*******  DEEPAK KUMAR SINGH      -  CLASS XII B  [ 2021-2022 ]
"""

import mysql.connector as mk

# GLOBAL VARIABLES DECLARATION
db_choice = None
db_pwd=None
tot_ques_default = 5
```

MAIN MENU

```
def home():
    while True:
        print()
        print("*****************************************************************")
        print("               ***WELCOME TO QUIZ MASTER***               ")
        print("*****************************************************************")
        print("1. To configure/reset backend database (ADMIN ACCESS)")
        print("2. To Register")
        print("3. To Login and Quiz")
        print("4. To Exit")
        print("*****************************************************************")
        choice=int(input("Enter your choice (1-4): "))
        if choice==1:
            config_reset()
        elif choice==2:
            register()
        elif choice==3:
            login()
        elif choice==4:
            print("Exiting....")
            print("Thank You for using the application!!!")
            print("********Copyrights reseved to NCS Vizag Group 8 students only !!!*********")
            print("Have a Great Day..... ")
            break
        else:
            print("*** Try again with a valid choice!!!!!")
home()
```

REGISTRATION

```
def register():
    #DONE
    ask_credentials()
    con= mk.connect(host="localhost",user="root",password=db_pwd)
    cur=con.cursor()
    q1="show databases;"
    cur.execute(q1)
    rs=cur.fetchall()

    for dname in rs: #checking for database quiz
        if dname[0]=="quiz":
            print("------------------------- WELCOME TO REGISTRATION PORTAL----------------------------")
            x=int(input("select an user id: "))
            searchq1="use quiz;"
            cur.execute(searchq1)
            searchq2="select * from participants where uid={}".format(x)
            cur.execute(searchq2)
            rs=cur.fetchone()
            if (rs!=None):
                print("User id already exists in the table!!")
                print("Try again with another user id!!!")
            else:
                un=input("Enter the user name: ")
                mail=input("Enter mail id: ")
                pswd=input("Enter the password: ")
                pswd_h=input("Enter a password hint: ")
                q="insert into participants values({},'{}','{}','{}','{}')".format(x,un,mail,pswd,pswd_h)
                cur.execute(q)
                con.commit()
                print("User registered successfully!")
            break
    else:
        print("Database quiz not found!!!")  # returns to home()
    con.close()
```

LOGIN

```
def login():
    #DONE
    ask_credentials()
    con= mk.connect(host="localhost",user="root",password=db_pwd)
    cur=con.cursor()
    q1="show databases;"
    cur.execute(q1)
    rs=cur.fetchall()

    for dname in rs:
        if dname[0]=="quiz":
            print("-----------------  LOGIN PORTAL  ------------------")
            x=int(input("Select an user id to login: "))
            y=input("Enter your password: ")
            searchq1="use quiz;"
            cur.execute(searchq1)
            searchq="select * from participants where uid={}".format(x)
            cur.execute(searchq)
            r=cur.fetchone()
            if (r==None):
                print("***No such user registered!!")
                print("***If not Regsitered, Register first!!!")
            else:
                if r[0]==x and r[3]==y:
                    print("Login Successful!")
                    quiz(r)
                else:
                    print("Invalid credentials!!")
            break
    else:
        print("Database quiz not found!!!")
    con.close()
```

QUIZ

```
def quiz(r):
    #DONE
    con=mk.connect(host="localhost",user="root",password=db_pwd,database="quiz")
    cur=con.cursor()
    print()
    print("================  WELCOME TO QUIZ  ======================")
    print("->There will be total of *FIVE* questions.")
    print("->Each question carries 1 mark.")
    print("->Fill the Answers in (a,b,c,d)")
    z = input("Press ENTER to start the quiz....\n")
    total_marks = 0
    tot_ques = 0
    q5 = "select * from questions"
    cur.execute(q5)
    dp = cur.fetchall()
    print(dp)
    for v in range(1,len(dp)+1):
        tot_ques+=1
    print(tot_ques)
    q7 = "select * from questions"
    cur.execute(q7)

    for i in range(1,tot_ques+1):
        rs=cur.fetchone()
        print(i,".",rs[1])
        print("Option a :- ",rs[2])
        print("Option b :- ",rs[3])
        print("Option c :- ",rs[4])
        print("Option d :- ",rs[5])
        ans = input("Enter your option (a,b,c,d) :- ")

        while ans.lower() not in "a,b,c,d":  #checking for alphabets
            ans = input("Enter your valid answer (a,b,c,d): ")
            continue
        else:
            if ans.lower() == rs[6]:  #checking the correct answer
                total_marks += 1
        print()

    print("You Scored",total_marks,"out of",tot_ques,"!!!")

    q1 = "select * from scores where uid={}".format(r[0])
    cur.execute(q1)
    rp = cur.fetchone()
    if (rp == None):
        q2="insert into scores values ({},'{}','{}',{})".format(r[0],r[1],r[2],total_marks)
        cur.execute(q2)
        print("SCORES AND DETAILS INSERTED!!!")
    else:
        q3="update scores set marks={} where uid={}".format(total_marks,r[0])
        cur.execute(q3)
        print("SCORES UPDATED!!!")
    con.commit()
```

Quiz configuration panel

```
def config_reset():
    #DONE
    ask_credentials()
    print("QUIZ MASTER Configuration Panel....")
    key=input("Enter the secret key to configure database: ")
    if key=="boss":
        print("Key Matched!!")
        con=mk.connect(host="localhost",user="root",password=db_pwd)
        print("Connection established with MySQl database!\n")

        while True:
            print("================== MAIN MENU OF CONFIGURATION PANEL ======================")
            print("""WARNING:- IT IS RECOMMENDED TO DELETE YOUR BACKEND DATABASE QUIZ AND
                CREATE A NEW DATABASE QUIZ !!!""")
            print("1. To create database named quiz and add questions! ")
            print("2. To update the questions in the database quiz! ")
            print("3. To insert a question in the database quiz! ")
            print("4. To delete a question in the database quiz! ")
            print("5. To display all the details of questions in the database quiz! ")
            print("6. To Exit!")
            print("============================================================\n")
            print("Enter the serial no. for configuration in QM!!!")
            choice=int(input("Enter your choice (1-6): "))

            if choice==1:
                create_db_quiz()
            elif choice==2:
                update_ques()
            elif choice==3:
                insert_ques()
            elif choice==4:
                delete_ques()
            elif choice==5:
                disp_ques()
            elif choice==6:
                print("Exiting the configuration panel.....")
                break  # jumps to home()
            else:
                print("***Try again with a valid choice!!!!!") # continues while loop
    else:
        print("Invalid credentials!!!") # jumps to home()
```

Admin configuration panel options

```
def create_db_quiz():
    global db_choice
    con= mk.connect(host="localhost",user="root",password=db_pwd)
    cur=con.cursor()
    q1="show databases;"
    cur.execute(q1)
    rs=cur.fetchall()
    print("Checking for existing database quiz.....\n")
    for dname in rs:
        if dname[0]=="quiz":
            print("Database quiz already exists!!!")
            f = int(input("press 1 to delete the existing database:- "))
            if f == 1:
                query1="drop database quiz; "
                cur.execute(query1)
                con.commit()
                print("\nDATABASE DELETION SUCCESSFUL!!!\n")
            else:
                print("***Please try again with valid choice!!!\n")
                break     # returns to config_panel

    else:
        print("Press 1 to Create database with NEW input questions!!!")
        print("Press 2 to Create database with DEFAULT questions!!!")
        db_choice = int(input("Enter your choice (1-2):- "))
        q2="create database {} ".format("quiz")
        print("Creating database QUIZ.....")
        cur.execute(q2)
        print("Database created successfully!")
        q3="use {}".format("quiz")
        cur.execute(q3)
        q4="create table questions(ques_no int(3) primary key , ques_desc varchar(500),opt_a varchar(500), opt_b varchar(500), opt_c varchar(500) ,opt_d varchar(500) , ans varchar(50))"
        cur.execute(q4)
        print("->Table questions created!!! ")
        q5="create table participants(uid int(3) primary key, uname varchar(50), mailid varchar(50), password varchar(22), pwd_hint varchar(30))"
        cur.execute(q5)
        print("->Table particitants created!!!")
        q6="create table scores(uid int(3) primary key, uname varchar(50), mailid varchar(50), marks int(50))"
        cur.execute(q6)
        print("->Table scores created!\n")
```

```
    if db_choice == 1: #new input questions
        tot_ques=int(input("Number of questions to be added: "))
        for num in range(1,tot_ques+1):
            sql=num
            sql1=input("Enter Question: ")
            sql2=input("Enter the option a: ")
            sql3=input("Enter the option b: ")
            sql4=input("Enter the option c: ")
            sql5=input("Enter the option d: ")
            sql6=input("The answer is (a,b,c,d): ")
            sql_in= "insert into questions values({},'{}','{}','{}','{}','{}','{}')".format(sql,sql1,sql2,sql3,sql4,sql5,sql6)
            print()
            cur.execute(sql_in)
            con.commit()
        print("All Questions added successfully!!!\n") #returns to config reset

    elif db_choice == 2:  #default questions
        ques1=[1,"ARPANET stands for ?","Advanced Recheck Projects Agency Internet","Advanced Recheck Projects Agency Network",
               "Advanced Research Projects Agency Network","Advanced Research Projects Agency Internet","c"]
        ques2=[2,"Which protocol is commonly used to retrieve email from a mail server?","FTP","IMAP","HTML","TELNET","b"]
        ques3=[3,"Pick the correct username used for logging in database (sql with Python) :-","root","local","directory","host","a"]
        ques4=[4,"Which of the following is not a legal method for fetching records from database from within Python?",
               "fetchone()","fetchtwo()","fetchall()","fetchmany()","b"]
        ques5=[5," A ___ is property of the entire relation, which ensures through its value that each tuple is unique in a relation",
               "Rows","Key","Attribute","fields","b"]

        sql_1= "insert into questions values({},'{}','{}','{}','{}','{}','{}')".format(ques1[0],ques1[1],ques1[2],ques1[3],ques1[4],ques1[5],ques1[6])
        cur.execute(sql_1)
        sql_2= "insert into questions values({},'{}','{}','{}','{}','{}','{}')".format(ques2[0],ques2[1],ques2[2],ques2[3],ques2[4],ques2[5],ques2[6])
        cur.execute(sql_2)
        sql_3= "insert into questions values({},'{}','{}','{}','{}','{}','{}')".format(ques3[0],ques3[1],ques3[2],ques3[3],ques3[4],ques3[5],ques3[6])
        cur.execute(sql_3)
        sql_4= "insert into questions values({},'{}','{}','{}','{}','{}','{}')".format(ques4[0],ques4[1],ques4[2],ques4[3],ques4[4],ques4[5],ques4[6])
        cur.execute(sql_4)
        sql_5= "insert into questions values({},'{}','{}','{}','{}','{}','{}')".format(ques5[0],ques5[1],ques5[2],ques5[3],ques5[4],ques5[5],ques5[6])
        cur.execute(sql_5)
        print("All Questions added successfully!!!\n")
        con.commit()  #returns to config reset

    else:
        print("***Please try again with a valid choice!!!\n")  #returns to config reset
con.commit()
con.close()


def update_ques():
    #DONE
    con= mk.connect(host="localhost",user="root",password=db_pwd,database="quiz")
    cur=con.cursor()
    print()
    print("->ALL QUESTIONS IN DATABASE :- ")
    d="select * from questions;"
    cur.execute(d)
    sp = cur.fetchall()
    for i in sp:
        print("Q.",i[0],i[1],sep='. ')
    print()

    quesno=int(input("Enter the Question Number to be updated: "))
    searchq="select * from questions where ques_no={}".format(quesno)
    cur.execute(searchq)
    rs=cur.fetchone()
    if (rs==None):
        print("***No such question number in the table!!\n") #returns to config reset
```

```
        else:
            print("\nQuestion Details are as follows :-")
            print("Question ",rs[0],": ",rs[1])
            print("->Option a :- ",rs[2])
            print("->Option b :- ",rs[3])
            print("->Option c :- ",rs[4])
            print("->Option d :- ",rs[5])
            print("=>ANSWER :- ",rs[6])
            print("-----------------------------------------------------------------------------------------")

            ques=input("Enter the NEW question: ")
            a=input("Enter the option a: ")
            b=input("Enter the option b: ")
            c=input("Enter the option c: ")
            d=input("Enter the option d: ")
            answer=input("Enter the correct answer (a,b,c,d): ")
            q="update questions set ques_desc='{}',opt_a='{}',opt_b='{}',opt_c='{}',opt_d='{}',ans='{}' where ques_no={}".format(ques,a,b,c,d,answer,quesno)
            cur.execute(q)
            con.commit()
            print("\nUPDATION SUCCESSFUL!!!\n")
        con.close()


def insert_ques():
    con=mk.connect(host="localhost",user="root",password=db_pwd,database="quiz")
    cur=con.cursor()
    print()
    d="select * from questions;"
    cur.execute(d)
    y=cur.fetchall()
    tot_ques=0
    print("->ALL QUESTIONS IN DATABASE :- ")
    for i in y:
        print(i[0],i[1],sep='.')
        tot_ques += 1
    print("***Total questions in database:- ",tot_ques)
    print()

    quesno=int(input("Enter the New Question number to be inserted: "))
    searchq="select * from questions where ques_no={}".format(quesno)
    cur.execute(searchq)
    rs=cur.fetchone()

    if (rs!=None):
        print("***Question number already exists in the table!!\n")
    else:
        print("Enter the information to be inserted into the questions Table:- ")
        sql1=input("Enter The Question: ")
        sql2=input("Enter the option a: ")
        sql3=input("Enter the option b: ")
        sql4=input("Enter the option c: ")
        sql5=input("Enter the option d: ")
        sql6=input("The answer is (a,b,c,d): ")
        sql_in= "insert into questions values({},'{}','{}','{}','{}','{}','{}','{}')".format(quesno,sql1,sql2,sql3,sql4,sql5,sql6)
        cur.execute(sql_in)
        con.commit()
        print("\nQUESTION INSERTED SUCCESSFULLY!!!\n")
    con.close() #returns to config reset
```

```
def delete_ques():
    #DONE
    con=mk.connect(host="localhost",user="root",password=db_pwd,database="quiz")
    cur=con.cursor()
    print()
    d="select * from questions;"
    cur.execute(d)
    y=cur.fetchall()
    print("->ALL QUESTIONS IN DATABASE :- ")
    for i in y:
        print(i[0],i[1],sep='.')
    print()
    quesno=int(input("Enter the Question number to be deleted: "))
    searchq="select * from questions where ques_no={}".format(quesno)
    cur.execute(searchq)
    rs=cur.fetchone()
    if (rs==None):
        print("\n***No such Question number in the table!!!\n")
    else:

        dquery="delete from questions where ques_no={}".format(quesno)
        cur.execute(dquery)
        con.commit()
        print("\nDELETION SUCCESSFUL!!!\n")
    con.close()

def disp_ques():
    #DONE
    con=mk.connect(host="localhost",user="root",password=db_pwd, database="quiz")
    cur=con.cursor()
    query="select * from questions;"
    cur.execute(query)
    rs=cur.fetchall()
    print()
    if rs==[]:
        print("No Questions Found!!")
    else:
        for row in rs:
            print("Question ",row[0],": ",row[1])
            print("->option a :- ",row[2])
            print("->option b :- ",row[3])
            print("->option c :- ",row[4])
            print("->option d :- ",row[5])
            print("=>Answer  :- ",row[6])
            print()
    con.close()
```

OUTPUT

REGISTRATION PORTAL

```
************************************************************
                ***WELCOME TO QUIZ MASTER***
************************************************************
1. To configure/reset backend database (ADMIN ACCESS)
2. To Register
3. To Login and Quiz
4. To Exit
************************************************************
Enter your choice (1-4): 2
------------------------------------------------------
Before you start, please provide the following info:
Please provide your MySQL database connection password:- Par@150202?
***Make sure that you have backend database named quiz!!!
Input cached into system.
Press Enter to continue....

------------------------- WELCOME TO REGISTRATION PORTAL-----------------
select an user id: 101
Enter the user name: Amit
Enter mail id: amit@gmail.com
Enter the password: root
Enter a password hint: root
User registered successfully!
```

IF USER IS ALREADY REGISTERED

```
------------------------- WELCOME TO REGISTRATION PORTAL---------------------------
select an user id: 100
User id already exists in the table!!
Try again with another user id!!!
```

LOGIN PORTAL

```
************************************************************
                ***WELCOME TO QUIZ MASTER***
************************************************************
1. To configure/reset backend database (ADMIN ACCESS)
2. To Register
3. To Login and Quiz
4. To Exit
************************************************************
Enter your choice (1-4): 3
------------------------------------------------------
Before you start, please provide the following info:
Please provide your MySQL database connection password:- Par@150202?
***Make sure that you have backend database named quiz!!!
Input cached into system.
Press Enter to continue....

-----------------  LOGIN PORTAL  ------------------
Select an user id to login: 101
Enter your password: root
Login Successful!
```

QUIZ PORTAL

```
================  WELCOME TO QUIZ  ========================
->There will be total of *FIVE* questions.
->Each question carries 1 mark.
->Fill the Answers in (a,b,c,d)
Press ENTER to start the quiz....

1 . ARPANET stands for ?
Option a :-  Advanced Recheck Projects Agency Internet
Option b :-  Advanced Recheck Projects Agency Network
Option c :-  Advanced Research Projects Agency Network
Option d :-  Advanced Research Projects Agency Internet
Enter your option (a,b,c,d) :- c

2 . Which protocol is commonly used to retrieve email from a mail server?
Option a :-  FTP
Option b :-  IMAP
Option c :-  HTML
Option d :-  TELNET
Enter your option (a,b,c,d) :- b

3 . Pick the correct username used for logging in database (sql with Python) :-
Option a :-  root
Option b :-  local
Option c :-  directory
Option d :-  host
Enter your option (a,b,c,d) :- a
```

```
4 . Which of the following is not a legal method for fetching records from database from within Python?
Option a :-  fetchone()
Option b :-  fetchtwo()
Option c :-  fetchall()
Option d :-  fetchmany()
Enter your option (a,b,c,d) :- b

5 .  A ____ is property of the entire relation, which ensures through its value that each tuple is unique in a relation
Option a :-  Rows
Option b :-  Key
Option c :-  Attribute
Option d :-  fields
Enter your option (a,b,c,d) :- b

You Scored 5 out of 5 !!!
Updating the scores.......
```

EXITING QUIZ MASTER

```
**************************************************************
                ***WELCOME TO QUIZ MASTER***
**************************************************************
1. To configure/reset backend database (ADMIN ACCESS)
2. To Register
3. To Login and Quiz
4. To Exit
**************************************************************
Enter your choice (1-4): 4
Exiting....
Thank You for using the application!!!
********Copyrights reseved to NCS Vizag Group 8 students only !!!*********
Have a Great Day.....
```

CONFIGURATION PANEL(ADMIN ACCESS)

Creating database if database does not exist

```
================== MAIN MENU OF CONFIGURATION PANEL ======================
WARNING:- IT IS RECOMMENDED TO DELETE YOUR BACKEND DATABASE QUIZ AND
                CREATE A NEW DATABASE QUIZ !!!
1. To create database named quiz and add questions!
2. To update the questions in the database quiz!
3. To insert a question in the database quiz!
4. To delete a question in the database quiz!
5. To display all the details of questions in the database quiz!
6. To Exit!
============================================================

Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 1
Checking for existing database quiz.....

Press 1 to Create database with NEW input questions!!!
Press 2 to Create database with DEFAULT questions!!!
Enter your choice (1-2):- 2
Creating database QUIZ.....
Database created successfully!
->Table questions created!!!
->Table particitants created!!!
->Table scores created!

All Questions added successfully!!!
```

Creating new database by deleting the existing database

```
================== MAIN MENU OF CONFIGURATION PANEL ======================
WARNING:- IT IS RECOMMENDED TO DELETE YOUR BACKEND DATABASE QUIZ AND
                CREATE A NEW DATABASE QUIZ !!!
1. To create database named quiz and add questions!
2. To update the questions in the database quiz!
3. To insert a question in the database quiz!
4. To delete a question in the database quiz!
5. To display all the details of questions in the database quiz!
6. To Exit!
============================================================

Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 1
Checking for existing database quiz.....

Database quiz already exists!!!
press 1 to delete the existing database:- 1

DATABASE DELETION SUCCESSFUL!!!
```

Creating database with default questions

```
Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 1
Checking for existing database quiz.....

Database quiz already exists!!!
press 1 to delete the existing database:- 1

DATABASE DELETION SUCCESSFUL!!!

Press 1 to Create database with NEW input questions!!!
Press 2 to Create database with DEFAULT questions!!!
Enter your choice (1-2):- 2
Creating database QUIZ.....
Database created successfully!
->Table questions created!!!
->Table particitants created!!!
->Table scores created!

All Questions added successfully!!!
```

Creating database with admin questions

```
Press 1 to Create database with NEW input questions!!!
Press 2 to Create database with DEFAULT questions!!!
Enter your choice (1-2):- 1
Creating database QUIZ.....
Database created successfully!
->Table questions created!!!
->Table particitants created!!!
->Table scores created!

Number of questions to be added: 2
Enter Question: What is a relation in RDBMS?
Enter the option a: key
Enter the option b: table
Enter the option c: row
Enter the option d: Data Types
The answer is (a,b,c,d): b

Enter Question: Which of the following systems use RDMS?
Enter the option a: Oracle
Enter the option b: Microsoft SQLServer
Enter the option c: IBM
Enter the option d: All of the mentioned
The answer is (a,b,c,d): d

All Questions added successfully!!!
```

Updating the questions in database

```
================== MAIN MENU OF CONFIGURATION PANEL ======================
WARNING:- IT IS RECOMMENDED TO DELETE YOUR BACKEND DATABASE QUIZ AND
                CREATE A NEW DATABASE QUIZ !!!
1. To create database named quiz and add questions!
2. To update the questions in the database quiz!
3. To insert a question in the database quiz!
4. To delete a question in the database quiz!
5. To display all the details of questions in the database quiz!
6. To Exit!
============================================================

Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 2

->ALL QUESTIONS IN DATABASE :-
Q.no. 1. ARPANET stands for ?
Q.no. 2. Which protocol is commonly used to retrieve email from a mail server?
Q.no. 3. Pick the correct username used for logging in database (sql with Python) :-
Q.no. 4. Which of the following is not a legal method for fetching records from database from within Python?
Q.no. 5.  A ___ is property of the entire relation, which ensures through its value that each tuple is unique in a relation
```

```
Enter the Question Number to be updated: 1

Question Details are as follows :-
Question  1 :  ARPANET stands for ?
->Option a :-  Advanced Recheck Projects Agency Internet
->Option b :-  Advanced Recheck Projects Agency Network
->Option c :-  Advanced Research Projects Agency Network
->Option d :-  Advanced Research Projects Agency Internet
=>ANSWER :-  c
------------------------------------------------------------------------------------
Enter the NEW question: Which of the following is the full form of RDBMS?
Enter the option a: Relational Data Management System
Enter the option b: Relational Database Management System
Enter the option c: Relative Database Management System
Enter the option d: Regional Data Management System
Enter the correct answer: a
Updation successful!
```

If question number to be updated does not exists in database

```
================== MAIN MENU OF CONFIGURATION PANEL ======================
WARNING:- IT IS RECOMMENDED TO DELETE YOUR BACKEND DATABASE QUIZ AND
                CREATE A NEW DATABASE QUIZ !!!
1. To create database named quiz and add questions!
2. To update the questions in the database quiz!
3. To insert a question in the database quiz!
4. To delete a question in the database quiz!
5. To display all the details of questions in the database quiz!
6. To Exit!
============================================================

Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 2

->ALL QUESTIONS IN DATABASE :-
Q.no. 1. Which of the following is the full form of RDBMS?
Q.no. 2. Which protocol is commonly used to retrieve email from a mail server?
Q.no. 3. Pick the correct username used for logging in database (sql with Python) :-
Q.no. 4. Which of the following is not a legal method for fetching records from database from within Python?
Q.no. 5.  A ___ is property of the entire relation, which ensures through its value that each tuple is unique in a relation

Enter the Question Number to be updated: 0
***No such question number in the table!!
```

Inserting existing question number in database

```
================== MAIN MENU OF CONFIGURATION PANEL ======================
WARNING:- IT IS RECOMMENDED TO DELETE YOUR BACKEND DATABASE QUIZ AND
                CREATE A NEW DATABASE QUIZ !!!
1. To create database named quiz and add questions!
2. To update the questions in the database quiz!
3. To insert a question in the database quiz!
4. To delete a question in the database quiz!
5. To display all the details of questions in the database quiz!
6. To Exit!
============================================================

Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 3

->ALL QUESTIONS IN DATABASE :-
1.Which of the following is the full form of RDBMS?
2.Which protocol is commonly used to retrieve email from a mail server?
3.Pick the correct username used for logging in database (sql with Python) :-
4.Which of the following is not a legal method for fetching records from database from within Python?
5. A ___ is property of the entire relation, which ensures through its value that each tuple is unique in a relation
***Total questions in database:-  5

Enter the New Question number: 4
***Question number already exists in the table!!
```

Inserting questions in database

```
Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 3

->ALL QUESTIONS IN DATABASE :-
1.Which of the following is the full form of RDBMS?
2.Which protocol is commonly used to retrieve email from a mail server?
3.Pick the correct username used for logging in database (sql with Python) :-
4.Which of the following is not a legal method for fetching records from database from within Python?
5. A ___ is property of the entire relation, which ensures through its value that each tuple is unique in a relation
***Total questions in database:-  5

Enter the New Question number: 6
Enter the information to be inserted into the questions Table:-
Enter The Question: What is a relation in RDBMS?
Enter the option a: key
Enter the option b: table
Enter the option c: row
Enter the option d: Data Types
The answer is (a,b,c,d): b
Question inserted successfully!!!
```

If the entered question number does not exists in database

```
Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 4

->ALL QUESTIONS IN DATABASE :-
1.Which of the following is the full form of RDBMS?
2.Which protocol is commonly used to retrieve email from a mail server?
3.Pick the correct username used for logging in database (sql with Python) :-
4.Which of the following is not a legal method for fetching records from database from within Python?
5. A ___ is property of the entire relation, which ensures through its value that each tuple is unique in a relation
6.What is a relation in RDBMS?

Enter the Question number to be deleted: 0
***No such Question number in the table!!!
```

Deleting questions from database

```
Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 4

->ALL QUESTIONS IN DATABASE :-
1.Which of the following is the full form of RDBMS?
2.Which protocol is commonly used to retrieve email from a mail server?
3.Pick the correct username used for logging in database (sql with Python) :-
4.Which of the following is not a legal method for fetching records from database from within Python?
5. A ___ is property of the entire relation, which ensures through its value that each tuple is unique in a relation
6.What is a relation in RDBMS?

Enter the Question number to be deleted: 6
Deletion successful!
```

Displaying questions from database

```
Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 5

Question  1 :  Which of the following is the full form of RDBMS?
->option a :-  Relational Data Management System
->option b :-  Relational Database Management System
->option c :-  Relative Database Management System
->option d :-  Regional Data Management System
=>Answer  :-  a

Question  2 :  Which protocol is commonly used to retrieve email from a mail server?
->option a :-  FTP
->option b :-  IMAP
->option c :-  HTML
->option d :-  TELNET
=>Answer  :-  b
```

```
Question  3 :  Pick the correct username used for logging in database (sql with Python) :-
->option a :-  root
->option b :-  local
->option c :-  directory
->option d :-  host
=>Answer  :-  a

Question  4 :  Which of the following is not a legal method for fetching records from database from within Python?
->option a :-  fetchone()
->option b :-  fetchtwo()
->option c :-  fetchall()
->option d :-  fetchmany()
=>Answer  :-  b
```

Exiting configuration panel

```
================== MAIN MENU OF CONFIGURATION PANEL ======================
WARNING:- IT IS RECOMMENDED TO DELETE YOUR BACKEND DATABASE QUIZ AND
                CREATE A NEW DATABASE QUIZ !!!
1. To create database named quiz and add questions!
2. To update the questions in the database quiz!
3. To insert a question in the database quiz!
4. To delete a question in the database quiz!
5. To display all the details of questions in the database quiz!
6. To Exit!
============================================================

Enter the serial no. for configuration in QM!!!
Enter your choice (1-6): 6
Exiting the configuration panel.....
```

BLACK BOX OUTPUT

PARTICIPANTS TABLE

```
mysql> select * from participants;
+-----+--------+------------------+----------+----------+
| uid | uname  | mailid           | password | pwd_hint |
+-----+--------+------------------+----------+----------+
| 100 | qwerty | qwerty@gmail.com | root     | root     |
| 101 | abc    | abc@gmail.com    | boss     | boss     |
+-----+--------+------------------+----------+----------+
2 rows in set (0.05 sec)

mysql> select * from scores;
+-----+--------+------------------+-------+
| uid | uname  | mailid           | marks |
+-----+--------+------------------+-------+
| 100 | qwerty | qwerty@gmail.com |     3 |
| 101 | abc    | abc@gmail.com    |     5 |
+-----+--------+------------------+-------+
2 rows in set (0.04 sec)
```

QUESTIONS TABLE

```
mysql> select * from questions;
+--------+-----------------------------------------------------------------+-----------------------------------------+------+
| ques_no | ques_desc                                                      | opt_a                                   | opt_b
                    | opt_c                                 | opt_d                                 | ans  |
+--------+-----------------------------------------------------------------+-----------------------------------------+------+
|      1 | ARPANET stands for ?                                           | Advanced Recheck Projects Agency Internet | Advanced Rechec
k Projects Agency Network | Advanced Research Projects Agency Network | Advanced Research Projects Agency Internet | c    |
|      2 | Which protocol is commonly used to retrieve email from a mail server?      | FTP                                     | IMAP
                    | HTML                                  | TELNET                                | b    |
|      3 | Pick the correct username used for logging in database (sql with Python) :- | root                                    | local
                    | directory                             | host                                  | a    |
|      4 | Which of the following is the full form of RDBMS?              | Relational Data Management System       | Relational Data
base Management System    | Relative Database Management System   | Regional Data Management System       | a    |
|      5 | what is the capital of india?                                  | delhi                                   | mumbai
                    | goa                                   | vizag                                 | a    |
+--------+-----------------------------------------------------------------+-----------------------------------------+------+
5 rows in set (0.00 sec)
```

DESCRIPTION OF QUESTIONS

```
mysql> desc questions;
+-----------+--------------+------+-----+---------+-------+
| Field     | Type         | Null | Key | Default | Extra |
+-----------+--------------+------+-----+---------+-------+
| ques_no   | int          | NO   | PRI | NULL    |       |
| ques_desc | varchar(500) | YES  |     | NULL    |       |
| opt_a     | varchar(500) | YES  |     | NULL    |       |
| opt_b     | varchar(500) | YES  |     | NULL    |       |
| opt_c     | varchar(500) | YES  |     | NULL    |       |
| opt_d     | varchar(500) | YES  |     | NULL    |       |
| ans       | varchar(50)  | YES  |     | NULL    |       |
+-----------+--------------+------+-----+---------+-------+
7 rows in set (0.12 sec)
```

DESCRIPTION OF PARTICIPANTS

```
mysql> desc participants;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| uid      | int         | NO   | PRI | NULL    |       |
| uname    | varchar(50) | YES  |     | NULL    |       |
| mailid   | varchar(50) | YES  |     | NULL    |       |
| password | varchar(22) | YES  |     | NULL    |       |
| pwd_hint | varchar(30) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

DESCRIPTION OF SCORES

```
mysql> desc scores;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| uid    | int         | NO   | PRI | NULL    |       |
| uname  | varchar(50) | YES  |     | NULL    |       |
| mailid | varchar(50) | YES  |     | NULL    |       |
| marks  | int         | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

TESTING

Software Testing is an empirical investigation conducted to provide stakeholders with information about the quality of the product or service under test[1] , with respect to the context in which it is intended to operate. Software Testing also provides an objective, independent view of the software to allow the business to appreciate and understand the risks at implementation of the software. Test techniques include, but are not limited to, the process of executing a program or application with the intent of finding software bugs.

It can also be stated as the process of validating and verifying that a software program/application/product meets the business and technical requirements that guided its design and development, so that it works as expected and can be implemented with the same characteristics. Software Testing, depending on the testing method employed, can be implemented at any time in the development process, however the most test effort is employed after the requirements have been defined and coding process has been completed.

TESTING METHODS

Software testing methods are traditionally divided into black box testing and white box testing. These two approaches are used to describe the point of view that a test engineer takes when designing test cases.

BLACK BOX TESTING

Black box testing treats the software as a "black box," without any knowledge of internal implementation. Black box testing methods include: equivalence partitioning, boundary value analysis, all-pairs testing, fuzz testing, model-based testing, traceability matrix, exploratory testing and specification-based testing.

SPECIFICATION-BASED TESTING

Specification-based testing aims to test the functionality of software according to the applicable requirements.[16] Thus, the tester inputs data into, and only sees the output from, the test object. This level of testing usually requires thorough test cases to be provided to the tester, who then can simply verify that for a given input, the output value (or behaviour), either "is" or "is not" the same as the expected value specified in the test case. Specification-based testing is necessary, but it is insufficient to guard against certain risks.

ADVANTAGES AND DISADVANTAGES

The black box tester has no "bonds" with the code, and a tester's perception is very simple: a code must have bugs. Using the principle, "Ask and you shall receive," black box testers find bugs where programmers don't. But, on the other hand, black box testing has been said to be "like a walk in a dark labyrinth without a flashlight," because the tester doesn't know how the software being tested was actually constructed.

That's why there are situations when (1) a black box tester writes many test cases to check something that can be tested by only one test case, and/or (2) some parts of the back end are not tested at all. Therefore, black box testing has the advantage of "an unaffiliated opinion," on the one hand, and the disadvantage of "blind exploring," on the other.

WHITE BOX TESTING

White box testing, by contrast to black box testing, is when the tester has access to the internal data structures and algorithms (and the code that implement these)

Types of white box testing:-

The following types of white box testing exist:

- api testing - Testing of the application using Public and Private APIs.
- Code coverage - creating tests to satisfy some criteria of code coverage.
- fault injection methods.
- mutation testing methods.
- static testing - White box testing includes all static testing.

CODE COMPLETENESS EVALUATION

White box testing methods can also be used to evaluate the completeness of a test suite that was created with black box testing methods. This allows the software team to examine parts of a system that are rarely tested and ensures that the most important function points have been tested. Two common forms of code coverage are:

- Function Coverage: Which reports on functions executed and
- Statement Coverage: Which reports on the number of lines executed to complete the test? They both return coverage metric, measured as a percentage.

HARDWARE AND SOFTWARE REQUIREMENTS

Hardware Requirements:

1.Operating system	1.Windows7 or above 2.Mac OS x 10.11 or above 3.Linux RHEL 6/7
2.Processor	1.Intel Pentium or above 2.AMD Athlon or above 3.Nvidiategra or above
3.Motherboard	1.845 or 915,995 for Pentium or MSI K9MM-V VIAk8M8oo+8237P plus Chipsetfor AMB Athlon
4.RAM	512MB or above
5.Hard disk	SATA 40 GB or above
6.CD/DVD drive	If backup required

Software Requirements:

I. Windows OS

II. Python

III. MySql

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****** THE END ******