



SARDAR PATEL PUBLIC SCHOOL

HOSHANGABAD ROAD, MISROD, BHOPAL



DEPARTMENT OF COMPUTER SCIENCE

INVESTIGATORY PROJECT

(Session 2022-23)

QUIZ MASTER

SUBMITTED TO:

**MS. RAKHI SHRIVASTAVA
(PGT COMPUTER SCIENCE)**

SUBMITTED BY:

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Class : XII
Roll No.**

DECLARATION

I hereby declare that the investigatory project titled **“QUIZ MASTER”** submitted in the partial fulfillment of the AISSCE 2023 examination for Computer Science, is an authentic record of my own work carried out under the able guidance of **Ms. Rakhi Shrivastava, PGT Computer Science.**

The work has been carried out at **SARDAR PATEL PUBLIC SCHOOL MISROD, BHOPAL.**

Student Name : Anubhav Bhatnagar

CERTIFICATE

This is to certify that **Anubhav Bhatnagar**, student of Class XII, Sardar Patel Public School, Bhopal has successfully completed the investigatory project titled **“Quiz Master”** for the partial fulfillment of the AISSCE Examination, 2023 under the guidance of **Ms. Rakhi Shrivastava, PGT (Computer Science)**.

The project is the original work of the candidate and is made in the school computer lab.

Rakhi Shrivastava
(PGT Computer Science)

Signature of Examiner
with Name & examiner Number

Dr. Rajesh K. Sharma
(Principal)

ACKNOWLEDGEMENT

In the accomplishment of this project successfully, many people have bestowed upon me their blessings and the heart pledged support, I am utilizing this place to thank all the people who have been concerned with this project.

I express my deep sense of gratitude to my respected teacher **Ms. Rakhi Shrivastava** for her valuable help and guidance.

I am grateful to my respected Principal **Dr. Rajesh K. Sharma**, Sardar Patel Public School Misrod, Bhopal for permitting me to select this topic and utilize all the necessary facilities of the institution.

I am also thankful to the management and all faculty members of my school for their kind co-operation and help.

Lastly, I would like to express my deep appreciation towards my classmates and my indebtedness to my parents and other family members for providing me the moral support and encouragement.

Anubhav Bhatnagar

INDEX

S.No.	Topic	Page no.
1.	PROJECT ON QUIZ MASTER	6
2.	System Development Life Cycle(SDLC)	8
3.	FLOWCHART	16
4.	SOURCE CODE	17
5.	OUTPUT	22
6.	INSTALLATION PROCEDURE	24
7.	TESTING	25
8.	HARDWARE AND SOFTWARE REQUIREMENTS	28
9.	BIBLIOGRAPHY	29

PROJECT ON QUIZ MASTER

INTRODUCTION

This project is about a program for a Quiz. It helps to have a complete walk around of a quiz.

The project has been divided into 2 parts for easy and simple functioning and understanding.

It receives username and password to register and login for different roles of Admin and student.

For Admin login,

It helps an admin to add questions in the quiz along with the correct answer. The admin has complete control over the information to be added in the question as well as its options.

For Student login,

The student login is designed for the purpose of taking the quiz, when the user logs in as student, he/she is prompted for taking the quiz, on selecting yes he/she gets a choice of how many questions to attempt, after one completes taking the quiz, they can see their net score also.

OBJECTIVES 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.

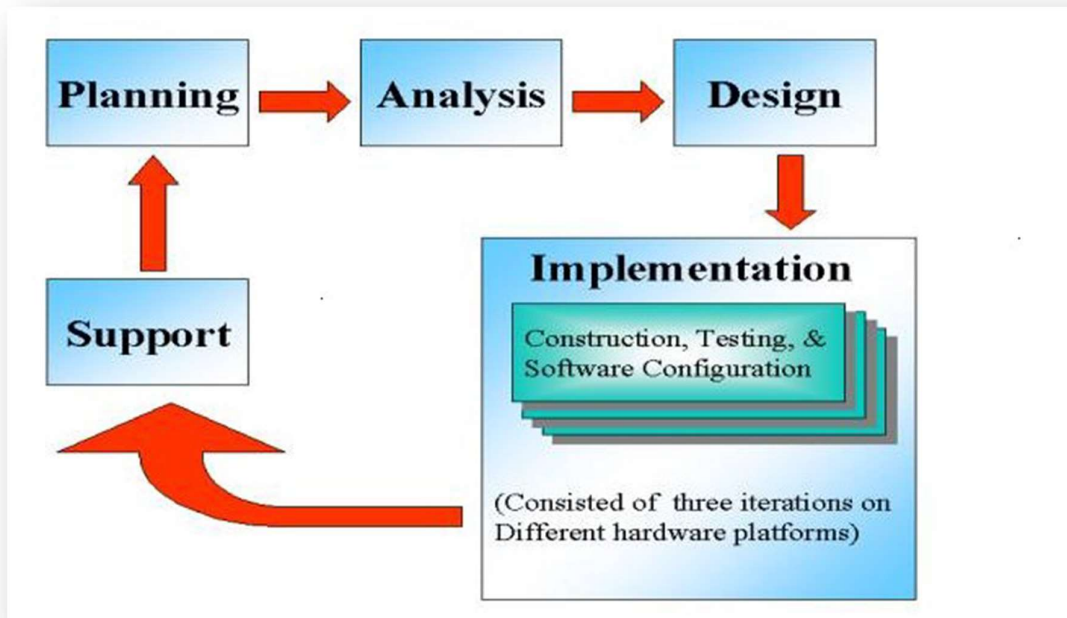
PROPOSED SYSTEM

Today one cannot afford to rely on the fallible human beings of be really wants to stand against today's merciless competition So, to keep pace with time, to bring about the best result without malfunctioning and greater efficiency so to replace the unending heaps of files with a much sophisticated hard disk of the computer.

One has to use the data management software. Software has been an ascent in atomization various organisations. Many software products working are now in markets, which have helped in making the organizations work easier and efficiently. Data management initially had to maintain a lot of ledgers and a lot of paper work has to be done but now software product on this organization has made their work faster and easier. Now only this software has to be loaded on the computer and work can be done.

This prevents a lot of time and money. The work becomes fully automated and any information regarding the organization can be obtained by clicking the button. Moreover, now it's an age of computers of and automating such an organization gives the better look.

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. End users of the system under development should be involved in reviewing the output of each phase to ensure the system is being built to deliver the needed functionality.

SYSTEM CONCEPT DEVELOPMENT PHASE

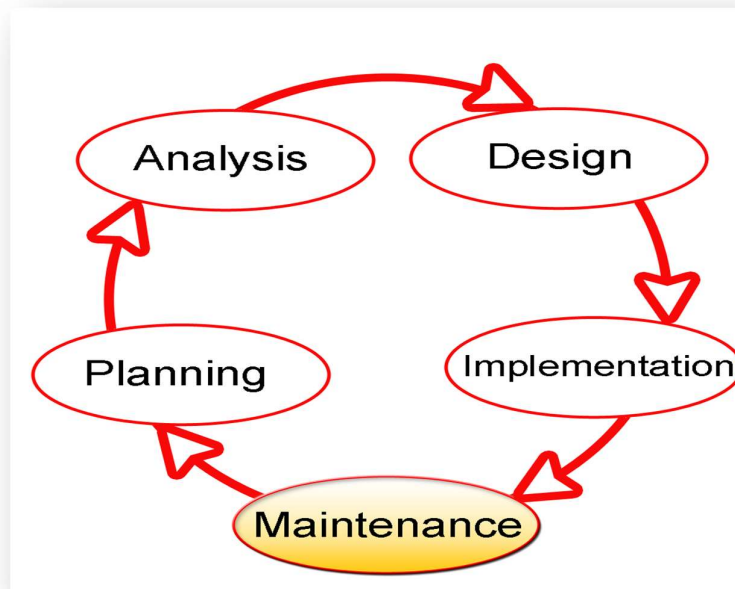
The System Concept Development Phase begins after a business need or opportunity is validated by the Agency/Organization Program Leadership and the Agency/Organization CIO.

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, and Develop 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.
- ✚ It may include several trade-off decisions such as the decision to use COTS software products as opposed to developing custom software or reusing software components, or the decision to use an incremental delivery versus a complete, onetime deployment.
- ✚ Construction of executable prototypes is encouraged to evaluate technology to support the business process. The System Boundary Document serves as an important reference document to support the Information Technology Project Request (ITPR) process.

- ✚ The ITPR must be approved by the State CIO before the project can move forward.

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.

A critical part of a project manager's job is to coordinate discussions between user, audit, security, design, development, and network personnel to identify and document as many functional, security, and network

requirements as possible. During this phase, a plan is developed that documents the approach to be used and includes a discussion of methods, tools, tasks, resources, project schedules, and user input. Personnel assignments, costs, project schedule, and target dates are established.

A Project Management Plan is created with components related to acquisition planning, configuration management planning, quality assurance planning, concept of operations, system security, verification and validation, and systems engineering management planning.

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 a level 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 Master Plan.

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 script programs during the development phase. Program designs are constructed 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. End users, designers, developers, database managers, and network administrators should review and refine the prototyped designs in an iterative process until they agree on an acceptable design. Audit, security, and quality assurance personnel should be involved in the review and approval process. During this phase, the system is designed to satisfy the functional requirements identified in the previous phase. 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.
- ✚ Everything requiring user input or approval is documented and reviewed by the user. Once these documents have been approved by the Agency CIO and Business Sponsor, the final System Design Document is created to serve as the Critical/Detailed Design for the system.
- ✚ This document receives a rigorous review by Agency technical and functional representatives to ensure that it satisfies the business requirements. Concurrent with the development of the system design, the Agency Project Manager begins development of the Implementation Plan, Operations and Maintenance Manual, and the Training Plan.

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 reviewed and 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 user requirements.

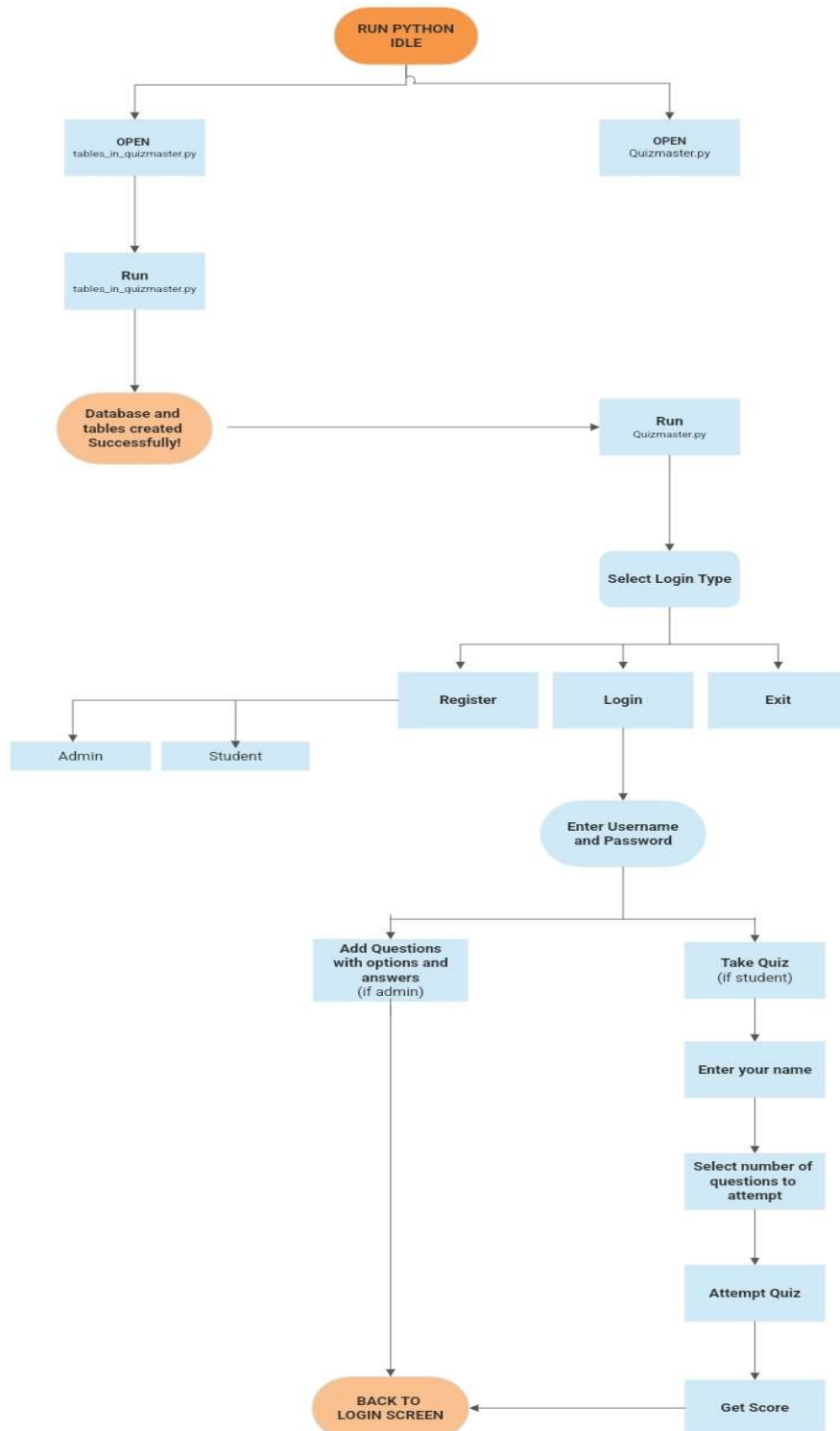
OPERATIONS AND MAINTENANCE PHASE

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.

FLOWCHART



SOURCE CODE

=====

tables_in_mysql.py

```
#Database and Table creation

import mysql.connector as cntr
db = cntr.connect(host = 'localhost' , user = 'root' ,
passwd = 'root')
if db.is_connected():
    print('Connected Successfully!')
cur = db.cursor()
cur.execute("create database if not exists quiz")
cur.execute("use quiz")

cur.execute("create table question(qid integer(4),question
varchar(500),op1 varchar(100),op2 varchar(100),op3
varchar(100),op4 varchar(100),ans varchar(100))")
cur.execute("create table auth(username varchar(50),password
varchar(50),category varchar(50))")
print("Database and Tables created successfully")
c = input("Press any key to continue-----> ")
cur.close()
db.close()
```

=====

Quizmaster.py

```
#Main Quiz Program

'''
Made by: Anubhav Bhatnagar
Class: XII
School: Sardar Patel Public School
Class XII CBSE Computer Science Project
'''

import sys
import mysql.connector
import random
mydb=mysql.connector.connect(host= "localhost" ,user=
"root",passwd="root", database='quiz')
```

```

mycursor=mydb.cursor()
def Home():
    Login()
    '''    f=1
    while f!=3:
        print("Welcome to Quiz")
        print("*****")
        print("1. Enter Questions")
        print("2. Take Quiz")
        print("3. Exit")
        f=int(input("Enter your choice: "))
        if f==1:
            Question()
        elif f==2:
            Quiz()
        elif f==3:
            print("Exiting the Quiz")
            mycursor.close()
            mydb.close()
            sys.exit();
        else:
            Home()'''

def register():
    un = input("Enter your user name:")
    pw = input ("Enter password:")
    c = input ("Enter Category ....(admin/student):")
    st="insert into auth values
('{}','{}','{}')".format(un,pw,c)
mycursor.execute(st)
mydb.commit()
print ("User Created Successfully...!!")

def Question():
    ch='Y'
    while ch=='Y' or ch=='y':
        print("Welcome to Question Portal")
        print("*****")
        q=input("Enter the question :")
        op1=input("Enter the option 1 :")
        op2=input("Enter the option 2 :")
        op3=input("Enter the option 3 :")
        op4=input("Enter the option 4 :")
        ans=0
        while ans==0:
            op=int(input("Which option is correct answer
(1,2,3,4) :"))
            if op==1:
                ans=op1
            elif op==2:
                ans=op2

```

```

        elif op==3:
            ans=op3
        elif op==4:
            ans=op4
        else:
            print("Please choose the correct option as
answer")
            mycursor.execute("Select * from question")
            data=mycursor.fetchall()
            qid=(mycursor.rowcount)+1
            mycursor.execute("Insert into question values
(%s,%s,%s,%s,%s,%s,%s)", (qid,q,op1,op2,op3,op4,ans))
            mydb.commit()
            ch=input("Question added successfully.. Do you want
to add more (Y/N) ")
            Home()
def Quiz():
    print("Welcome to Quiz portal")
    print("*****")
    mycursor.execute("Select * from question")
    data=mycursor.fetchall()
    name=input("Enter your name :")
    rc=mycursor.rowcount
    noq=int(input("Enter the number of questions to attempt
(max %s):"%rc))
    l=[]
    while len(l)!=noq:
        x=random.randint(1,rc)
        if l.count(x)>0:
            l.remove(x)
        else:
            l.append(x)
    print("Quiz has started")
    c=1
    score=0
    for i in range(0,len(l)):
        mycursor.execute("Select * from question where
qid=%s", (l[i],))
        ques=mycursor.fetchone()
        print("-----")
        print("Q.",c,":
",ques[1],"\nA.",ques[2],"\t\tB.",ques[3],"\nC.",ques[4],"\t
\tD.",ques[5])
        print("-----")
        c+=1
        ans=None
        while ans==None:
            choice=input("Answer (A,B,C,D) :")
            if choice=='A' or choice=='a':

```

```

        ans=ques[2]
        elif choice=='B' or choice=='b':
            ans=ques[3]
        elif choice=='C' or choice=='c':
            ans=ques[4]
        elif choice=='D' or choice=='d':
            ans=ques[5]
        else:
            print("Kindly select A,B,C,D as option
only")
    if ans==ques[6]:
        print("Correct")
        score=score+1
    else:
        print("Incorrect.. Correct answer is :",ques[6])
print("Quiz has ended !! Your final score is :",score)
input("Press any key to continue")
Home()
def Login():
    n=1
    while n!=3:
        print("Welcome to Quiz portal")
        print("*****")
        print("Select Login Type")
        print("1. Register")
        print("2. Login")
        print("3. Exit")
        n=int(input("Enter your choice: "))
        if n==1:
            register()
        elif n==2:
            Auth()
        elif n==3:
            print("Exiting the Log-on")
            mycursor.close()
            mydb.close()
            sys.exit();
        else:
            Home()
def Auth():
    print("Welcome to Question Portal")
    print("*****")
    un=input("Username :")
    pw=input("Password :")
    mycursor.execute("Select * from auth where username
='{}' and password ='{}' ".format(un,pw))
    data = mycursor.fetchall()
    if mycursor.rowcount:
        for row in data:

            if row[2]=='admin':

```

```
        Question()
    elif row[2]=='student':
        Quiz()
    else:
        print("You entered a wrong password, please try
again")
        Home()
    Home()

Home()
```

=====

OUTPUT

REGISTER: -

As admin:

```
===== RESTART: C:\Users\anubh\Desktop\Edited Code\Quizmaster.py =====
Welcome to Quiz portal
*****
Select Login Type
1. Register
2. Login
3. Exit
Enter your choice: 1
Enter your user name:anubhav
Enter password:anu123
Enter Category ....(admin/student):admin
User Created Successfully...!!
```

As student:

```
Welcome to Quiz portal
*****
Select Login Type
1. Register
2. Login
3. Exit
Enter your choice: 1
Enter your user name:anubhav1
Enter password:anu1234
Enter Category ....(admin/student):student
User Created Successfully...!!
```

Login: -

As admin:

```
Welcome to Quiz portal
*****
Select Login Type
1. Register
2. Login
3. Exit
Enter your choice: 2
Welcome to Question Portal
*****
Username :anubhav1
Password :anu1234
Welcome to Quiz portal
*****
Enter your name :|
```

As Student:

```
===== RESTART: C:\Users\anubh\Desktop\=====
Welcome to Quiz portal
*****
Select Login Type
1. Register
2. Login
3. Exit
Enter your choice: 2
Welcome to Question Portal
*****
Username :anubhav
Password :anu123
Welcome to Question Portal
*****
Enter the question :
```

Adding Question:

```
Welcome to Quiz portal
*****
Select Login Type
1. Register
2. Login
3. Exit
Enter your choice: 2
Welcome to Question Portal
*****
Username :anubhav
Password :anul23
Welcome to Question Portal
*****
Enter the question :Which type of Programming language does Python Support?
Enter the option 1 :Object-oriented programming
Enter the option 2 :Structured programming
Enter the option 3 :Functional programming
Enter the option 4 :All of the mentioned
Which option is correct answer (1,2,3,4) :4
Question added successfully.. Do you want to add more (Y/N)n
Welcome to Quiz portal
*****
Select Login Type
1. Register
2. Login
3. Exit
Enter your choice:
```

Taking Quiz:

```
Welcome to Quiz portal
*****
Select Login Type
1. Register
2. Login
3. Exit
Enter your choice: 2
Welcome to Question Portal
*****
Username :anubhav1
Password :anul234
Welcome to Quiz portal
*****
Enter your name :Anubhav
Enter the number of questions to attempt (max 6):2
Quiz has started

-----
Q. 1 : Who among the following presided the first session of Indian National Congress 1885?
A. W C Bannerjee          B. Dadabhai Naoroji
C. Badruddin Taiyabji     D. George Yule
-----

Answer (A,B,C,D) :a
Correct

-----
Q. 2 : Which among the following provides potential energy to an object?
A. Its momentum          B. It's position
C. It's acceleration      D. It's shape
-----

Answer (A,B,C,D) :a
Incorrect.. Correct answer is : It's position
Quiz has ended !! Your final score is : 1
Press any key to continue
```

INSTALLATION PROCEDURE

Quizmaster :-

Pre-Requisites :-

1. You have to have the following softwares for the successful running of this software; which are

I) Python (Only for the First time), it is downloadable from 'www.python.org'.

II) MySQL (Only for the First time), it is downloadable from 'www.mysql.org'.

Installation :-

1. There will be two python files namely 'tables_in_quizmaster.py' and 'Quizmaster.py'.

2. If you are running the software by the 3rd step mentioned below you have to pre install the following modules :-

A.) mysql.connector

3. Open the files in any python editors and run it to start and work on the software.

4. First run the 'tables_in_quizmaster.py' to create the database and tables in MySQL.

6. Then run the file 'Quizmaster.py' to start and work on the software.

TESTING

Software Testing is an empirical investigation conducted to provide stakeholders with information about the quality of the product or service under test, 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.

For example, the test designer can create tests to cause all statements in the program to be executed at least once.

- ✚ 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

OPERATING SYSTEM	:	WINDOWS 7 AND ABOVE
PROCESSOR	:	PENTIUM(ANY) OR AMD ATHALON(3800+- 4200+ DUAL CORE)
MOTHERBOARD	:	1.845 OR 915,995 FOR PENTIUM OR MSI K9MM-V VIA K8M800+8237R PLUS CHIPSET FOR AMD ATHALON
RAM	:	512 MB+
HARD DISK	:	SATA 40 GB OR ABOVE
CD/DVD r/w multi drive combo:		(If Backup required)
FLOPPY DRIVE 1.44 MB	:	(If Backup required)
MONITOR	:	14.1 or 15 -17 inch
KEY BOARD AND MOUSE		
PRINTER	:	required

SOFTWARE REQUIREMENTS:

1. Windows OS
2. Python
3. MySQL
4. MySQL and python connector(can be installed using pip- command)

BIBLIOGRAPHY

1. Computer science With Python - Class XII

By : Sumita Arora

2. Website: <https://www.youtube.com>