

**MAXFORT SCHOOL ROHINI**

**SUBJECT: COMPUTER SCIENCE (083)**

**SESSION: 2022-2023**

**THEME OF THE PROJECT:**

**“BANK MANAGEMENT SYSTEM”**

Submitted to- Submitted By-

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**CERTIFICATE**

This is to certify that student Hridey Arora, CBSE Roll No: \_\_\_\_\_\_\_\_\_\_\_\_ has successfully completed the project work entitled "Bank Management System" in the subject Computer Science laid down under the guidelines of CBSE for the purpose of Practical Examination in Class XII .

Internal Examiner Signature: \_\_\_\_\_\_\_\_\_\_\_

External Examiner Signature: \_\_\_\_\_\_\_\_\_\_\_

Principal Signature: \_\_\_\_\_\_\_\_\_

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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.

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Hridey Arora

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**Introduction of Python-**

**Python** is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code.

The python language is one of the most accessible programming languages available because it has simplified syntax and not complicated, which gives more emphasis on natural language. Due to its ease of learning and usage, python codes can be easily written and executed much faster than other programming languages.

Python is used by Wikipedia, Google, Yahoo!, CERN and NASA, among many other organisations. It's often used as a “scripting language” for web applications.

**Features of Python-**

**Python** is a dynamic, high level, free open source and interpreted programming language. It supports object-oriented programming as well as procedural oriented programming.  
In Python, we don’t need to declare the type of variable because it is a dynamically typed language.

Its features are-

* Easy to code: It is very easy to code in python language and anybody can learn python basics in a few hours or days. It is also a developer-friendly language.
* Free and Open Source: Since it is open-source, this means that source code is also available to the public. So you can download it as, use it as well as share it.
* Object-Oriented Language:  Python supports object-oriented language and concepts of classes, objects encapsulation, etc.
* GUI Programming Support: Graphical User interfaces can be made using a module such as PyQt5, PyQt4, wxPython, or Tk in python.
* High-Level Language: When we write programs in python, we do not need to remember the system architecture, nor do we need to manage the memory.
* Extensible feature: . We can write us some Python code into C or C++ language and also we can compile that code in C/C++ language.
* Python is Portable language: if we have python code for windows and if we want to run this code on other platforms such as Linux, Unix, and Mac then we do not need to change it, we can run this code on any platform.
* Python is an Integrated language**:** Python is also an Integrated language because we can easily integrated python with other languages like c, c++, etc.

**Introduction of MYSQL-**

**MySQL** is an open-source relational database management system (RDBMS). It is the most popular database system used with PHP. MySQL is developed, distributed, and supported by Oracle Corporation. The data in a MySQL database are stored in tables, which consists of columns and rows.

MySQL creates a database for storing and manipulating data, defining the relationship of each table. Clients can make requests by typing specific SQL statements on MySQL. The server application will respond with the requested information and it will appear on the clients' side

**Features of MYSQL-**

MySQL is a relational database management system (RDBMS) based on the SQL (Structured Query Language) queries. It is one of the most popular languages for accessing and managing the records in the table.

Its features are-

* Relational Database Management System (RDBMS):MySQL is a relational database management system. This database language is based on the sql queries to access and manage the records of the table.
* Easy to use: MySQL is easy to use. We have to get only the basic knowledge of SQL. We can build and interact with MySQL by using only a few simple SQL statements.
* It is secure: MySQL consists of a solid data security layer that protects sensitive data from intruders. Also, passwords are encrypted in MySQL.
* Client/ Server Architecture: MySQL follows the working of a client/server architecture. There is a database server (MySQL) and arbitrarily many clients (application programs), which communicate with the server; that is, they can query data, save changes, etc.
* Free to download: MySQL is free to use so that we can download it from MySQL official website without any cost.
* It is scalable: MySQL supports multi-threading that makes it easily scalable. It can handle almost any amount of data, up to as much as 50 million rows or more. The default file size limit is about 4 GB. However, we can increase this number to a theoretical limit of 8 TB of data.
* Speed: MySQL is considered one of the very fast database languages, backed by a large number of the benchmark test.
* High Flexibility: MySQL supports a large number of embedded applications, which makes MySQL very flexible.

**Functions used in the Project-**

Various functions have been used in this project each having an important task of its own.

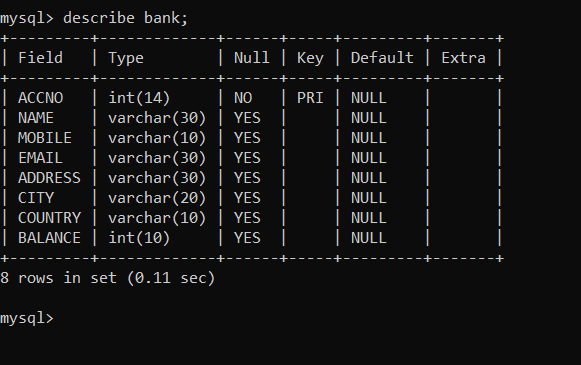
Functions like main() provide the frontend interface to the project. Some functions are independent and some are dependent. They run as the user specifies their actions and give the output. Functions like sortacc(), delete(), update(), insert() helps managing the program with each having its own task.

**Databases and Tables used in the project-**

Our main database integrated into the system is “bank”.

The program creates, manage and update data into this database. It has a table named “bank”. Bank has all the data like credentials of customers, account numbers, money records etc.

**Table Structure:-**

****

**SOURCE CODE:-**

import mysql.connector as sql

import pickle

db=sql.connect(host="localhost",user="root",password="admin",database="bank")

cursor=db.cursor()

def main():

print("Main Menu:-")

print("1. Insert Record")

print("2. Display Records as per Account Number")

print("a. Sorted As Per Account Number")

print("b. Sorted As Per Customer Name")

print("c. Sorted As Per Customer Balance")

print("3. Search Record Details as per Account Number")

print("4. Update Record")

print("5. Delete Record")

print("6. Transactions Debit/Credit from the account")

print("a. Debit/Withdraw from the account")

print("b. Credit into the account")

print("7. Exit")

def Insert():

Acc = int(input("Enter Acc No: "))

Name = input("Enter Name: ")

Mob = input("Enter Mob No: ")

email = input("Enter Email Address: ")

Add = input("Enter Address: ")

City = input("Enter City Name: ")

Country = input("Enter Country Name: ")

Bal = int(input("Enter Balance: "))

Rec = [Acc, Name, Mob, email, Add, City, Country,Bal]

Cmd = "insert into BANK values (%s, %s, %s, %s, %s, %s, %s, %s)"

cursor.execute(Cmd, Rec)

db.commit()

print(cursor.rowcount, 'record inserted')

def sortacc():

try:

cmd = "SELECT \* FROM bank ORDER BY accno"

cursor.execute(cmd)

x = "%15s %15s %15s %15s %15s %15s %15s %15s"

print(x % ("ACCNO", "NAME", "MOBILE", "EMAIL ADDRESS", "COMPLETE ADDRESS", "CITY", "COUNTRY", "BALANCE"))

for i in cursor:

for a in i:

print("%14s" % a, end=" ")

print()

print("="\*125)

except:

print("Table Doesn't exist")

def sortname():

try:

cmd = "select \* from bank order by name"

cursor.execute(cmd)

x = "%15s %15s %15s %15s %15s %15s %15s %15s"

print(x % ("ACCNO", "NAME", "MOBILE", "EMAIL ADDRESS", "COMPLETE ADDRESS", "CITY", "COUNTRY", "BALANCE"))

for i in cursor:

for a in i:

print("%14s" % a, end=" ")

print()

print("="\*125)

except:

print("Table doesnt exist")

def sortbal():

try:

cmd= "SELECT \* FROM bank ORDER BY balance"

cursor.execute(cmd)

x = "%15s %15s %15s %15s %15s %15s %15s %15s"

print(x % ("ACCNO", "NAME", "MOBILE", "EMAIL ADDRESS", "COMPLETE ADDRESS", "CITY", "COUNTRY", "BALANCE"))

for i in cursor:

for a in i:

print("%14s" % a, end=" ")

print()

print("=" \* 125)

except:

print("Table doesnt exist")

def searchacc():

try:

cmd= "SELECT \* FROM bank"

cursor.execute(cmd)

ch= input("Enter the accno to be searched: ")

for i in cursor:

if i[0] == ch:

print('='\*125)

x = "%15s %15s %15s %15s %15s %15s %15s %15s"

print(x % ("ACCNO", "NAME", "MOBILE", "EMAIL ADDRESS", "COMPLETE ADDRESS", "CITY", "COUNTRY", "BALANCE"))

for a in i:

print('%14s' % a, end=' ')

print()

break

else:

print("Record Not Found")

except:

print("Table Doesnt Exist")

def update():

cmd= "SELECT \* FROM bank"

cursor.execute(cmd)

a = int(input("Enter the accno whose details have to be updated: "))

for i in cursor:

i = list(i)

if int(i[0]) ==a:

ch= input("Change name?(Y/N): ")

if ch.upper() == 'Y':

i[1] = input("Enter name: ")

i[1] = i[1].upper()

ch = input("Change mobile no?(Y/N): ")

if ch.upper() == 'Y':

i[2] = input("Enter mobile no: ")

i[2] = i[2].upper()

ch = input("Change email?(Y/N): ")

if ch.upper() == 'Y':

i[3] = input("Enter email: ")

i[3] = i[3].upper()

ch = input("Change Address?(Y/N): ")

if ch.upper() == 'Y':

i[4] = input("Enter address: ")

i[4] = i[4].upper()

ch = input("Change City?(Y/N): ")

if ch.upper() == 'Y':

i[5] = input("Enter City: ")

i[5] = i[5].upper()

ch = input("Change Country?(Y/N): ")

if ch.upper() == 'Y':

i[6] = input("Enter Country: ")

i[6] = i[6].upper()

ch = input("Change Balance?(Y/N): ")

if ch.upper() == 'Y':

i[7] = int(input("Enter Balance: "))

cmd= "UPDATE BANK SET NAME= %s, MOBILE= %s, EMAIL= %s, ADDRESS= %s, CITY= %s, COUNTRY= %s, BALANCE= %s WHERE ACCNO= %s"

val= (i[1], i[2], i[3], i[4], i[5], i[6], i[7], int(i[0]),)

cursor.execute(cmd, val)

db.commit()

print("Account Updated")

break

else:

print("Record Not Found")

def create():

try:

cursor.execute("CREATE TABLE bank(ACCNO int(14) primary key

, NAME varchar(30), MOBILE varchar(10), EMAIL varchar(30), ADDRESS varchar(30), CITY varchar(20), COUNTRY varchar(10), BALANCE int(10))")

print("Table Created")

Insert()

except:

Insert()

def delete():

cmd= "SELECT \* FROM bank"

cursor.execute(cmd)

a = int(input("Enter the account no whose details need to be deleted: "))

for i in cursor:

i= list(i)

if int(i[0]) == a:

cmd= "DELETE FROM bank WHERE accno = %s"

val = (int(i[0]), )

cursor.execute(cmd, val)

db.commit()

print("Account Deleted")

break

else:

print("Record Not Found")

def debit():

cmd= "SELECT \* FROM bank"

cursor.execute(cmd)

print("Please Note that the money can only be debited if min balance of Rs 5000 exists")

acc= int(input("Enter the accno from which the money is to be debited: "))

for i in cursor:

i= list(i)

if int(i[0]) == acc:

Amt= int(input("Enter the amount to be withdrawn: "))

if ((int(i[7])-Amt)) >= 5000:

i[7] = int(i[7])

i[7] -= Amt

cmd= "UPDATE bank SET BALANCE = %s WHERE accno = %s"

val = (int(i[7]), int(i[0]))

cursor.execute(cmd, val)

db.commit()

print("Amount Debited")

break

else:

print("There must be at least Rs 5000 in the balance")

break

else:

print("Record Not Found")

def credit():

cmd= "SELECT \* FROM bank"

cursor.execute(cmd)

acc= int(input("Enter the accno from which the money is to be debited: "))

for i in cursor:

i= list(i)

if int(i[0])== acc:

Amt= int(input("Enter the amount to be credited: "))

i[7] = int(i[7])

i[7] += Amt

cmd= "UPDATE BANK SET BALANCE = %s WHERE accno = %s"

val= (int(i[7]), int(i[0]))

cursor.execute(cmd, val)

db.commit()

print("Amount Credited")

break

else:

print("Record Not Found")

while True:

main()

ch= input("Enter your choice: ")

if ch == '1':

Insert()

elif ch == '2':

while True:

ch1= input("Enter your choice(a/b/c/d): ")

if ch1=="a":

sortacc()

elif ch1=="b":

sortname()

elif ch1=="c":

sortbal()

elif ch1=="d":

print("Back to main menu")

break

else:

print("Invalid choice")

elif ch == '3':

searchacc()

elif ch == '4':

update()

elif ch == '5':

delete()

elif ch == '6':

while True:

ch1= input("Enter a choice (a/b/c): ")

if ch1.upper() == "A":

debit()

elif ch1.upper() == "B":

credit()

elif ch1.upper() == "C":

print("Back to Main Menu")

break

else:

print("Invalid Choice")

elif ch == '7':

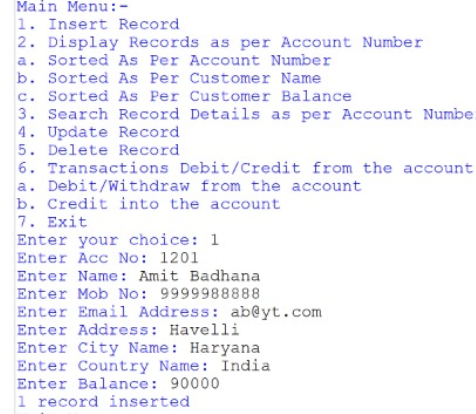
print("Exiting the menu.")

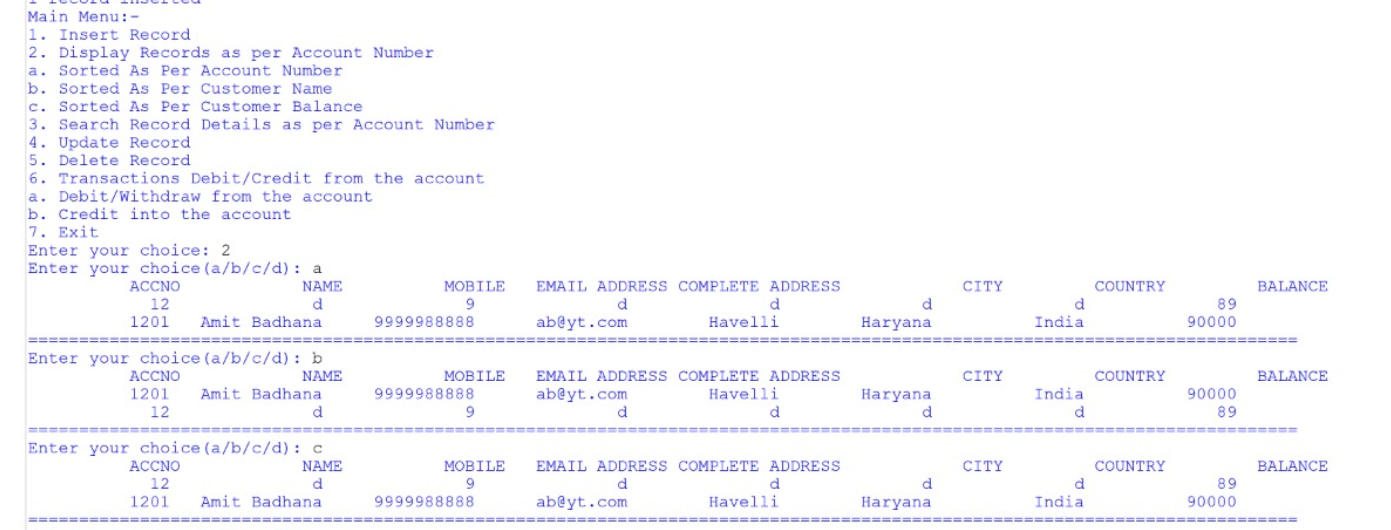
break

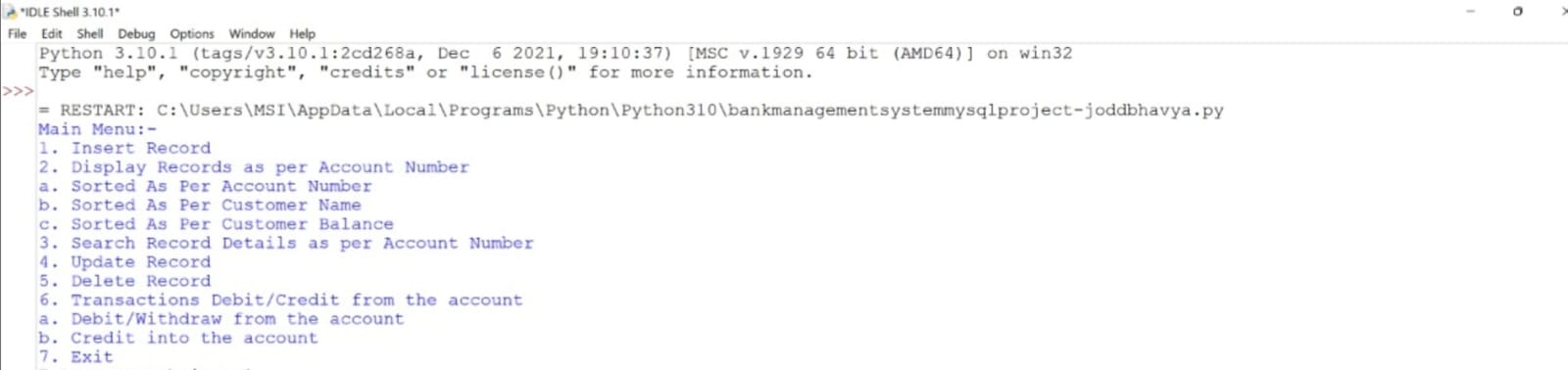
else:

print("Wrong Choice Entered")

**Output Screens:-**







**Bibliography-**

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* Stackoverflow.com