TECHNO INDIA GROUP PUBLIC SCHOOL, HOOGHLY

AISSCE-CBSE: 2021 - 2022

Topic: Payroll Management System

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Class- XII

Sec- Science(2)

Roll No.-

Regd. No.- B/2/22/15728/0212



Project Synopsis

CS-083

python™

~: Certificate :~

This is to certify that Master / ~~Miss~~ **Susnata Chattopadhyay** *of*

Class XII Sc2 *has successfully completed his / ~~her~~ project on the topic*

Python Programming on Payroll Management System *under my supervision.*

He / ~~She~~ has taken interest and has shown at most sincerity in completion of this project within the given date : / /2021.

I certify this Project up to my expectation and as per guidelines issued by

CBSE, NEW DELHI.

Date of Submission: / /2021

Internal's Signature

External's Signature

The Principal's Signature

ACKNOWLEDGEMENT

It is with pleasure that I acknowledge my sincere gratitude to our Computer Science Teacher who taught and undertook the responsibility of teaching the subject computer science. I have been greatly benefitted from her classes. My sincere thanks goes to our ***Principal****, who has always been a source of encouragement and support and without whose inspiration, this project would not have been a successful.*

Finally, I would like to express my sincere appreciation for all the other students of my batch for their friendship & the fine times that we wished to share together. Last but not least, I would like to thank all those who had helped directly or indirectly towards the completion of this project.

Susnata Chattopadhyay

Class XII Sc2

DECLARATION

We hereby declare that the Project Report titled-

'Python Programming on Payroll Management System' *is authentic record of our genuine work done and has been carried out by our own efforts under the guidance of* ***Mrs. Kamalika Bhattacharya.***

The synopsis of our project has been prepared by us. The outputs and observations were genuine and were obtained on successful execution of the system functionalities.

Susnata Chattopadhyay

Sammanyo Pal

Ayush Bagh

Index

Sl_No.	TOPIC
1	Introduction
2	Objective of Project
3	Advantages of the proposed system
4	System Requirements
5	Codes
6	Output
7	Future Scope of Project
8	Conclusion
9	Bibliography

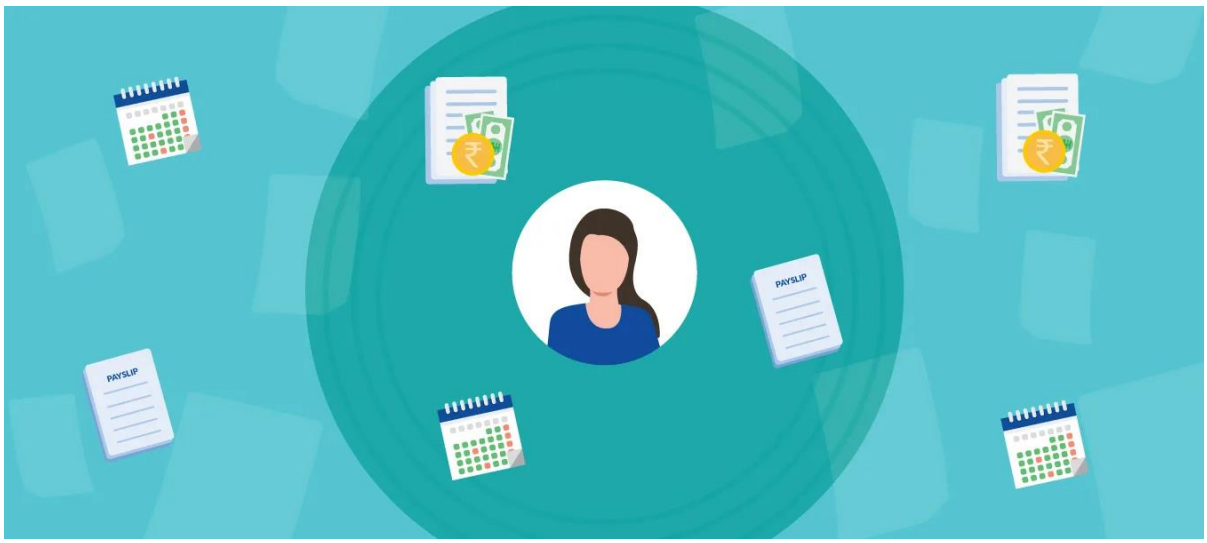
INTRODUCTION

What is Payroll?

Payroll is a list of employees who get paid by the company. Payroll also refers to the total amount of money employer pays to the employees.

A payroll system is a software to automate the payroll process. These systems can be integrated with leave and attendance tracking systems and employee self-service portal and are used to keep track of employee's working hours, calculate salaries, calculate taxes and deductions, print pay-slip, etc.

Every organization, whether big and small, has challenges to overcome and managing the information of employee, Payroll, appraisals, payment, working points. This is designed to assist in strategic planning, and will help us to ensure that our organization is equipped with the right level of information and details for our future goals. These systems will ultimately allow you to better manage resources.

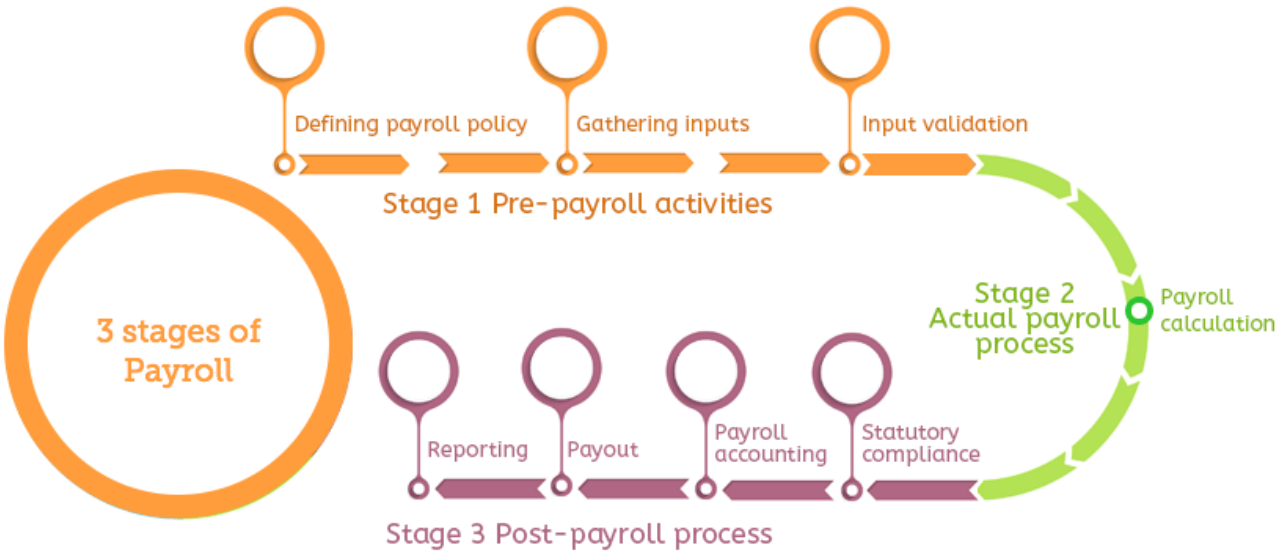


OBJECTIVE OF THE PROJECT

The main objective of the Payroll Management system is to manage the details of Payment, Salary, Working points, Appraisals, Payroll. It also manages all the related information. The project is totally built at administrative end and thus only the administrator is guaranteed the access.

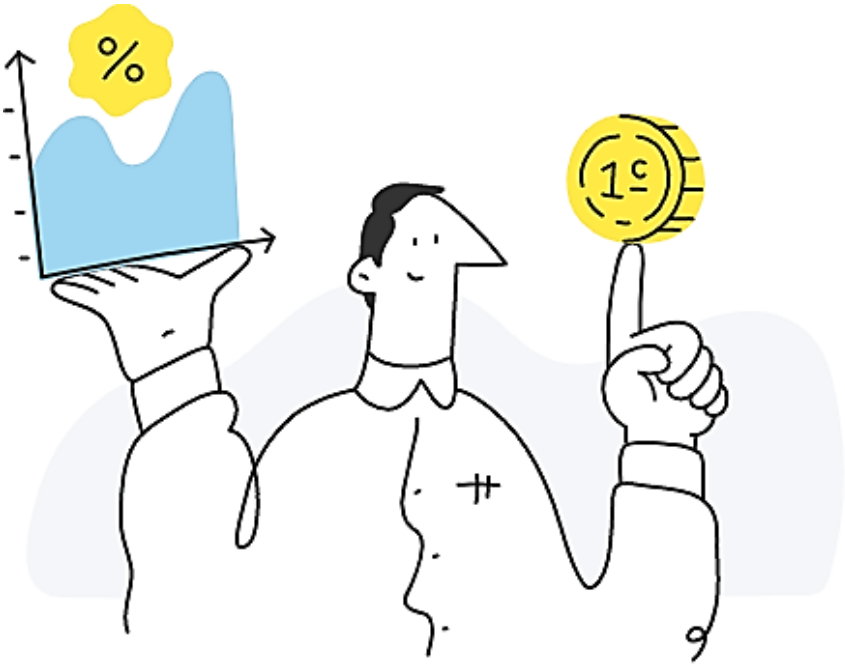
The purpose of the project is to build an application program to reduce the manual work for managing the payments, salary, employee, working points. It tracks all the details about payroll, appraisals.

We can say that this system will not only automate the process but save the valuable time of the manager or the admin, which can be well utilized buy his institute. This will be an additional advantage and management of power based on their free time from his normal duty.



ADVANTAGES OF THE PROPOSED SYSTEM

Our project has many advantages. Some of them are: ~



- It saves time as it speeds up every aspect of the employee database management and payroll process with a range of automated features.
- It is secure, as the employee database and the payroll process is managed by the admin in-house rather than sending private information to a third party.
- Validating procedures and checks, restrict user from making mistakes.
- The software is easy to use and user friendly, so no expertise is required.
- The calculations are automated so no chance of error.
- This software is very light weight, so it is compatible with most of the computers.

SYSTEM REQUIREMENTS

Hardware:

- Monitor (1024 X 728)- For Interactive Display
- Keyboard- For Entering Records
- Mouse- For Navigating the interface.
- CPU: Multi Core 64bit X86
- RAM: DDR3 / DDR4
- Memory Capacity: 4GB (Minimum)
- Storage Space: 10GB (Minimum)

Software:

- IDLE Python $3.x$ 64/32 bit
- MySQL 5.7 Command Line Client.
  ```
  Username: root
  Hostname: localhost
  Port: 3306
  ```
- MySQL Shell

Operating System:

- Windows 7 and higher.
- macOS (10.12)-Sierra and higher.

CODES

```
# Project Name  : Payroll Management System
# Made by       : Susnata Chattopadhyay, Samannyo Pal, Ayush Bagh
# Session       : 2021-2022
#-------------------------------------------------------------------------------
-----------
from datetime import datetime
import mysql.connector as mycon
from tabulate import tabulate
import os
import sys
#-------------------------------------------------------------------------------
-----------
def cur_dt():
  now=datetime.now()
  dt=now.strftime("%d-%m-%y  %H:%M:%S")
  print("Current Date & Time:",dt)
#-------------------------------------------------------------------------------
-----------
def sal(a,b):
  bs=a
  ej=b
  if ej.lower()=="manager":
    da=bs*0.28
    hra=bs*0.18
  elif ej.lower()=="officer":
    da=bs*0.25
    hra=bs*0.15
  else:
    da=bs*0.2
    hra=bs*0.1
  gs=bs+da+hra
```

```
  if (gs*12)<=250000:
    tax=0
  elif (gs*12)>250000 and (gs*12)<= 500000:
    tax=((gs*12)-250000)*0.05
  else:
    tax=12500+(((gs*12)-500000)*0.1)
  ns=(gs*12)-tax
  ns=ns/12
  return da,hra,gs,tax,ns
#-------------------------------------------------------------------------------
-----------
def inst():
  print("\n\n\n\n\n")
  print("\t\t-----------------------------------------------------------------
-")
  print("\t\t|                   INSERTING EMPLOYEE'S DETAILS
|")
  print("\t\t-----------------------------------------------------------------
-")
  print()
  eid=input("*Enter the ID of the employee: ")
  en=input("*Enter the name of the employee: ")
  ej=input("Enter the Job/Designation of the employee: ")
  bs=float(input("Enter the Basic Salary of the employee: "))
  da,hra,gs,tax,ns=sal(bs,ej)
  qry="insert into "+tbl+"
values('{}','{}','{}',{},{},{},{},{},{})".format(eid,en,ej,bs,da,hra,gs,tax,ns)
  mycur.execute(qry)
  mydb.commit()
  print("--------------------Employee's Record Added successfully--------------
-----")
#-------------------------------------------------------------------------------
-----------
def rpt_all():
  print("\n\n\n\n\n")
```

```
  print("\t\t-------------------------------------------------------------------
-")
  print("\t\t|                   RECORDS OF ALL THE EMPLOYEES                    
|")
  print("\t\t-------------------------------------------------------------------
-")
  print()
  qry="select * from "+tbl
  mycur.execute(qry)
  data=mycur.fetchall()
  print(tabulate(data,
headers=['EmpID','Name','Job','BasicSalary','DA','HRA','GrossSalary','Tax','NetS
alary'], tablefmt="fancy_grid"))
  print("Total number of rows",mycur.rowcount)
#-------------------------------------------------------------------------------
-----------
def rpt_one(eid):
  print("\n\n\n\n\n")
  print("\t\t-------------------------------------------------------------------
-")
  print("\t\t|                   RECORD OF THE EMPLOYEE WHOSE ID: %s     "%eid)
  print("\t\t-------------------------------------------------------------------
-")
  print()
  qry="select * from "+tbl+" where empid="+eid
  mycur.execute(qry)
  rec=mycur.fetchone()
  c=mycur.rowcount
  if c==-1:
    return print("Nothing to display...")
  else:
    return print(rec)#print(tabulate(rec,
headers=['EmpID','Name','Job','BasicSalary','DA','HRA','GrossSalary','Tax','NetS
alary'], tablefmt="fancy_grid"))
#-------------------------------------------------------------------------------
-----------
def sal_slip(eid):
```

```
  print("\n\n\n\n\n")
  print("\t\t-------------------------------------------------------------------
-")
  print("\t\t|                  S  A  L  A  R  Y    S  L  I  P                 
|")
  print("\t\t-------------------------------------------------------------------
-")
  print()
  cur_dt()
  print("\t\t-------------------------------------------------------------------
-")
  print("\t\t|                   RECORD OF THE EMPLOYEE WHOSE ID: %s     "%eid)
  print("\t\t-------------------------------------------------------------------
-")
  print()
  rpt_one(eid)
#-------------------------------------------------------------------------------
-----------
def updt(eid):
  print("\n\n\n\n\n")
  print("\t\t-------------------------------------------------------------------
-")
  print("\t\t|              MODIFYING/UPDATING EMPLOYEE'S DETAILS                
|")
  print("\t\t-------------------------------------------------------------------
-")
  print()
  qry="select * from "+tbl+" where empid="+eid
  mycur.execute(qry)
  rec=mycur.fetchone()
  c=mycur.rowcount
  if c==-1:
    print("Nothing to display...")
  else:
    print(tabulate(rec,
headers=['EmpID','Name','Job','BasicSalary','DA','HRA','GrossSalary','Tax','NetS
alary'], tablefmt="fancy_grid"))
```

```
    print("Enter new data for the employee or press enter for no change....")
    u_name=rec[1]
    u_job=rec[2]
    u_bs=rec[3]
    x=input("Enter the name of the employee: ")
    if len(x)>0:
      u_name=x
    x=input("Enter the Job/Designation of the employee: ")
    if len(x)>0:
      u_job=x
    x=input("Enter the Basic Salary of the employee: ")
    if len(x)>0:
      u_bs=float(x)
    da,hra,gs,tax,ns=sal(u_bs,u_job)
    qry="update "+tbl+" set
name='{}',job='{}',basicsalary={},da={},hra={},grosssalary={},tax={},netsalary={
} where empid='{}'".format(u_name,u_job,u_bs,da,hra,gs,tax,ns,eid)
    print(qry)
    mycur.execute(qry)
    mydb.commit()
    print("--------------------Employee's Record Updated successfully----------
---------")


#-------------------------------------------------------------------------------
-----------
def dlt(eid):
  rpt_one(eid)
  print("\n\n\n\n\n")
  d=input("Do you want to delete the above record from the database?(y/n): ")
  if d not in ("nN"):
    qry="delete from "+tbl+" where empid="+eid
    mycur.execute(qry)
    mydb.commit
    print("--------------------Employee's Record Deleted successfully----------
---------")
```

```
#-------------------------------------------------------------------------
-----------

def welcome():

  global c

  print("\n\n")


print("\t\t**********************************************************************
****")

  print("\t\t*
*")

  print("\t\t*                  Welcome to PAYROLL MANAGEMENT SYSTEM
*")

  print("\t\t*
*")


print("\t\t**********************************************************************
****")

  print("\t\t                      Company Name: %s
"%c.upper())

  print("\n\n\n")

#-------------------------------------------------------------------------
-----------



def mainmenu():

  print("\n\n")

  print("\t\t-----------------------------------------------------------------
------")

  print("\t\t|                            M A I N  M E N U
|")

  print("\t\t-----------------------------------------------------------------
------")

  print("""

\t-> To INSERT Employee's Details PRESS  1

\t-> REPORT SUB-MENU:

\t->    To DISPLAY all the Records PRESS  2

\t->    To DISPLAY any Employee's Record PRESS  3

\t->    To GENERATE SALARY SLIP for a particular Employee PRESS  4
```

```
\t-> To MODIFY/UPDATE Employee's Details PRESS  5

\t-> To DELETE any Employee's Record PRESS  6

\t-> To EXIT PRESS  7

""")

  choice=input("\nEnter your choice here: ")

  return choice

#-------------------------------------------------------------------------------
-----------


c=input("Enter your company name here: ")

welcome()

svr=input("Enter the server: ")

usr=input("Enter the username of MySQL Server: ")

psd=input("Enter the password for the user: ")


try:

  mydb=mycon.connect(host=svr, user=usr, password=psd)

  if mydb.is_connected():

    flag=1

  mycur=mydb.cursor()

  mycur.execute("show databases")

  dbs=mycur.fetchall()

  print(tabulate(dbs,headers=["Databases in your system
are..."],tablefmt="fancy_grid"))

  db=input("Type the name for database from the list or Type a name for a new
database & hit Enter: ")

  mycur.execute("create database if not exists %s"%(db,))

  mycur.execute("use %s"%(db,))

  mycur.execute("show tables")

  tbls=mycur.fetchall()

  print(tabulate(tbls,headers="Tables in your database
are...",tablefmt="fancy_grid"))

  tbl=input("Type the table name from the list or Type a name for a new table &
hit Enter: ")

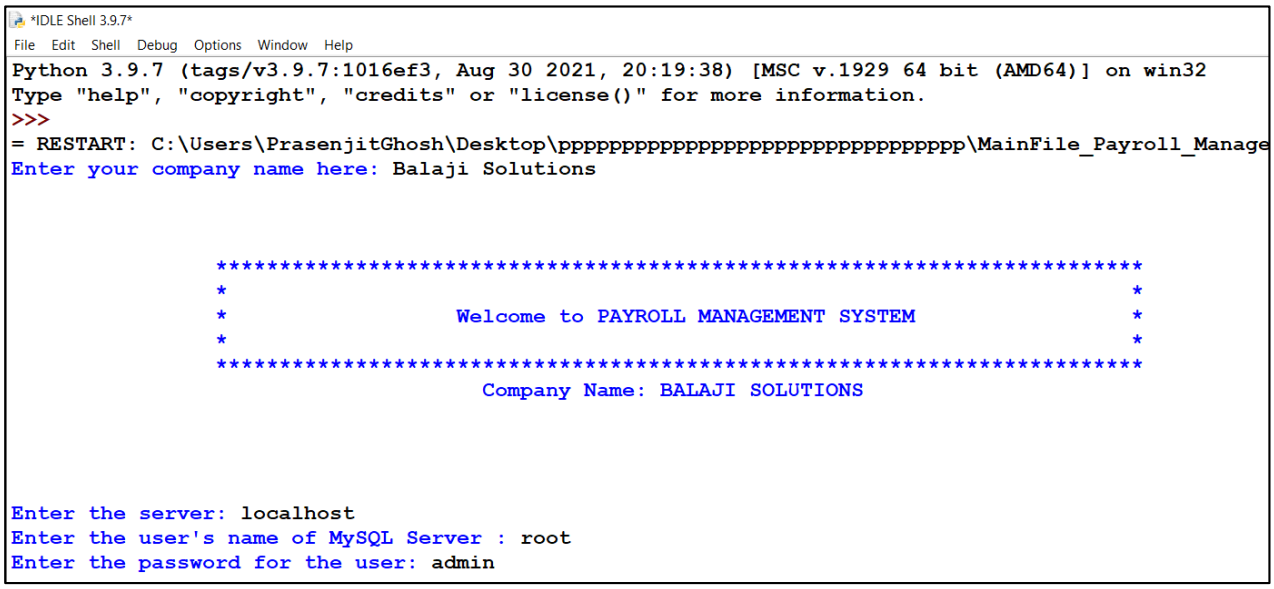
  os.system("mysql -u"+usr+" -p"+psd+" "+db+" "+tbl+"<..\payroll.sql")
```

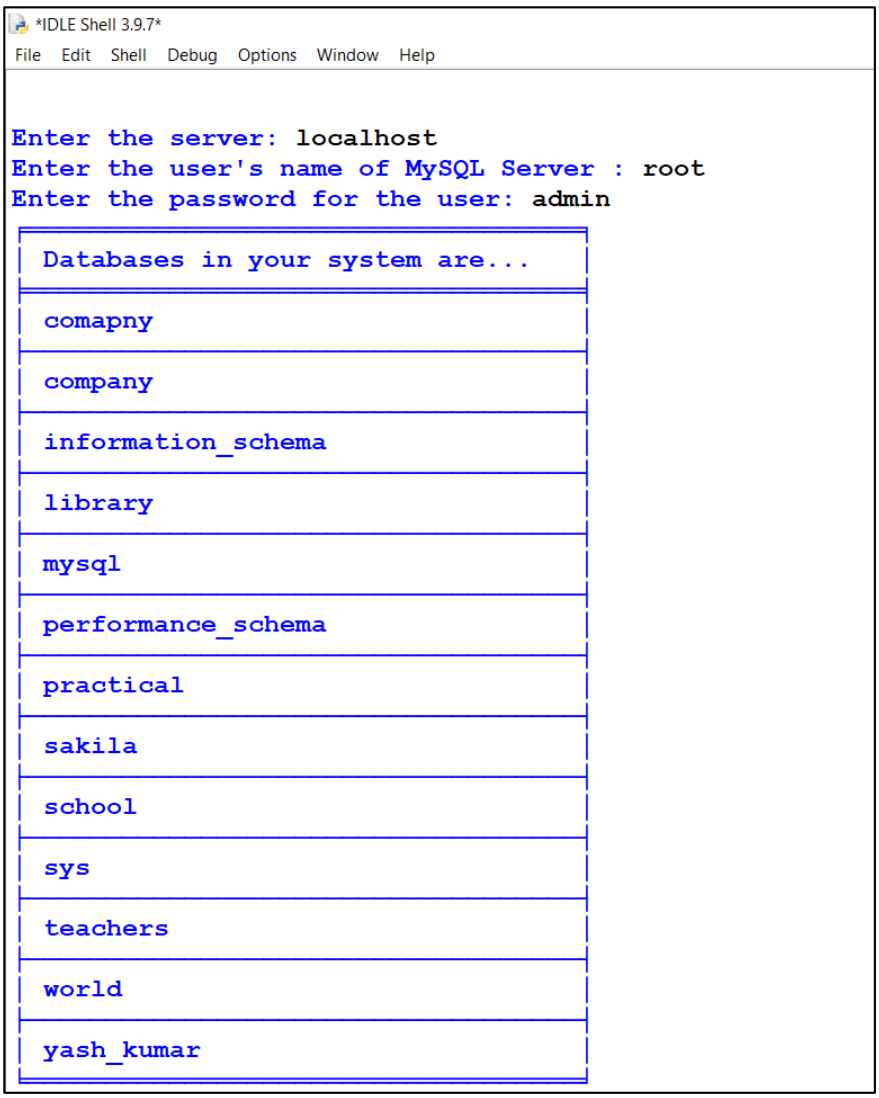
```
    qry="create table if not exists %s(EmpID varchar(15) primary key,\
    Name varchar(50) not null, Job varchar(25), BasicSalary float,\
    DA float, HRA float, GrossSalary float, TAX float, NetSalary float)"%(tbl,)
    mycur.execute(qry)
    mydb.commit()
  except:
    flag=0

  while True:
    if flag==0:
      print("\n\n RUN THE PROGRAM AGAIN & ENTER THE CREDENTIALS CORRECTLY ... ")
      break
    else:
      ch=mainmenu()
    if ch=="7":
      print("Have a nice day !!")
      os.system("mysqldump -u"+usr+" -p"+psd+" "+db+" "+tbl+">..\payroll.sql")
      mydb.close()
      break
      sys.exit()
    elif ch=="1":
      eid=input("*Enter the ID of the employee: ")
      inst(eid)
    elif ch=="2":
      rpt_all()
    elif ch=="3":
      eid=input("*Enter the ID of the employee: ")
      rpt_one(eid)
    elif ch=="4":
      eid=input("*Enter the ID of the employee: ")
      sal_slip(eid)
    elif ch=="5":
      eid=input("*Enter the ID of the employee: ")
```

```
    updt(eid)
  elif ch=="6":
    eid=input("*Enter the ID of the employee: ")
    dlt(eid)
  else:
    print("Press the number displayed within the bracket(1-7) for the
corresponding operation")
```

OUTPUTS


IDLE Shell 3.9.7
File Edit Shell Debug Options Window Help
Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\PrasenjitGhosh\Desktop\ppppppppppppppppppppppppppppppp\MainFile_Payroll_Manage
Enter your company name here: Balaji Solutions
****
* *
* Welcome to PAYROLL MANAGEMENT SYSTEM *
* *
****
Company Name: BALAJI SOLUTIONS
Enter the server: localhost
Enter the user's name of MySQL Server : root
Enter the password for the user: admin


IDLE Shell 3.9.7
File Edit Shell Debug Options Window Help
Enter the server: localhost
Enter the user's name of MySQL Server : root
Enter the password for the user: admin
Databases in your system are...
comapny
company
information_schema
library
mysql
performance_schema
practical
sakila
school
sys
teachers
world
yash_kumar

```
Type the name for database from the list or Type a name for a new database & hit Enter: company
+-----+
| T   |
+-----+
| emp |
+-----+
Type the table name from the list or Type a name for a new table & hit Enter: emp


                ------------------------------------------------------------------------
                |                          M A I N  M E N U                            |
                ------------------------------------------------------------------------

        -> To INSERT Employee's Details PRESS  1
        -> REPORT SUB-MENU:
        ->    To DISPLAY all the Records PRESS  2
        ->    To DISPLAY any Employee's Record PRESS  3
        ->    To GENERATE SALARY SLIP for a particular Employee PRESS  4
        -> To MODIFY/UPDATE Employee's Details PRESS  5
        -> To DELETE any Employee's Record PRESS  6
        -> To EXIT PRESS  7


Enter your choice here:
```

```
*IDLE Shell 3.9.7*
File  Edit  Shell  Debug  Options  Window  Help
Enter your choice here: 1
*Enter the ID of the employee: 111




                ------------------------------------------------------------------------
                |                  INSERTING EMPLOYEE'S DETAILS                        |
                ------------------------------------------------------------------------

*Enter the ID of the employee: 111
*Enter the name of the employee: Bipul Singh
Enter the Job/Designation of the employee: office staff
Enter the Basic Salary of the employee: 25000
--------------------Employee's Record Added successfully---------------------
```

```
                ------------------------------------------------------------------------
                |                  RECORDS OF ALL THE EMPLOYEES                        |
                ------------------------------------------------------------------------

+-------+--------------+--------------+-----------+-------+-------+-------------+--------+-----------+
| EmpID | Name         | Job          | BasicSalary | DA    | HRA   | GrossSalary | Tax    | NetSalary |
+-------+--------------+--------------+-----------+-------+-------+-------------+--------+-----------+
|   101 | Subham Kumar | clerk        |     24500 |  4900 |  2450 |       31850 |   6610 |   31299.2 |
+-------+--------------+--------------+-----------+-------+-------+-------------+--------+-----------+
|   110 | Ritesh Sharma| manager      |     49600 | 13888 |  8928 |       72416 | 49399.2|   68299.4 |
+-------+--------------+--------------+-----------+-------+-------+-------------+--------+-----------+
|   111 | Bipul Singh  | office staff |     25000 |  5000 |  2500 |       32500 |   7000 |   31916.7 |
+-------+--------------+--------------+-----------+-------+-------+-------------+--------+-----------+
Total number of rows 3
```

FUTURE SCOPE OF THE PROJECT

- The option to print the records in future.
- We can give more advance software for payroll Management System including more facilities.
- We will host the platform on online servers to make it accessible worldwide.
- Integrate multiple load balancer to distribute the loads of the system.
- We intend to add a leave structure in future.
- We would like to implement a regular backup mechanism to back up the employee database to avoid disasters.



The above mentioned points are enhancements which can be done to increase the applicability and usage of this project. We have left all the option so that if there is any other future requirement in the system by the user for the enhancement of the system then it is possible to implement them.

CONCLUSION

Our project is only a humble venture to satisfy the needs to manage the project work. Several user friendly coding have also been adopted. This package shall prove to be a useful in satisfying all the requirements of any institution. According to the requested requirement, the admin can add, manipulate, update and delete all employee data in his organization. The Admin can add new departments and delete them. He can also add predefined pay grades for the employees. The payment of the employee is based on monthly basis. Numerous validations implemented, would enable the admin to enter accurate data. The objective of software planning is to provide a frame work that enables the manager to make reasonable estimates within a limited time frame.

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3. https://www.freshbooks.com/hub/accounting/how-payroll-systems-work
4. https://www.youtube.com/
5. https://www.wikiwand.com/en/Payroll

Thank

You!