**CHETTINAD VIDYASHRAM**

**STD XI – CSc RECORD PROGRAMS (2022 – 23)**

**14/06/2022 SALARY SLIP**

#1. Write a program to accept the name and the basic pay of an employee and print the neat salary slip for the employee.

**#PROGRAM:**

ename=input("Enter the employee name: ")

bp=int(input("Enter the basic pay: "))

da=20/100\*bp

hra=30/100\*bp

ta=10/100\*bp

pf=13/100\*bp

it=5/100\*bp

gross=bp+ta+hra+da

ded=pf+it

net=gross-ded

print("\t\t\tSALARY SLIP")

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

print("NAME:",ename)

print("---------------------------------------")

print("BASIC PAY:",bp,"\tPF:",pf)

print("D.A :",da,"\tIT:",it)

print("H.R.A :",hra)

print("T.A :",ta)

print("Gross :",gross,"\tDeduction:",ded)

print("NETPAY :",net)

print("---------------------------------------")

**#OUTPUT:**

Enter the employee name: Shyam

Enter the basic pay: 5000

SALARY SLIP

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NAME: Shyam

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BASIC PAY: 5000 PF: 650.0

D.A : 1000.0 IT: 250.0

H.R.A : 1500.0

T.A : 500.0

Gross : 8000.0 Deduction: 900.0

NETPAY : 7100.0

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**14/06/2022 ROOTS OF QUADRATIC EQUATION**

#2. Write a program to find the roots of quadratic equation.

**#PROGRAM**

import math

a=int(input("Enter a"))

b=int(input("Enter b"))

c=int(input("Enter c"))

d=(b\*b)-(4\*a\*c)

if d==0:

print("Roots are real and equal")

print("Roots are",-b/(2\*a))

elif d>0:

print("Roots are real and unequal")

print("R1=",(-b+math.sqrt(d))/(2\*a))

print("R2=",(-b-math.sqrt(d))/(2\*a))

else:

print("Roots are imaginary")

**#OUTPUT:**

a)

Enter a1

Enter b-4

Enter c5

Roots are imaginary

b)

Enter a1

Enter b-5

Enter c4

Roots are real and unequal

R1= 4.0

R2= 1.0

c)

Enter a1

Enter b-6

Enter c9

Roots are real and equal

Roots are 3.0

**21/06/22 ELECTRICITY BILL**

#3. Write a program to accept the consumer name, EB number, number of units and type

# of consumption [ D – Domestic , C – commercial ] Calculate the amount to be paid

# based on the following criteria

For Domestic purpose

a.for the first 100 units - No charges

b.for units 101- 200, ₹7.20 per unit

c.for units 201-300, ₹9.80 per unit

d.for units 301 and above ₹12 per unit.

For Commercial purpose

a.for the first 100 , ₹ 10 per unit

b.for units 101- 200, ₹ 25 per unit

c.for units 201-300, ₹ 40 per unit

d.for units 301 and above ₹ 55 per unit.

Print the EB bill in the given format

ELECTRICITY BILL

CONSUMER NAME :

EB NUMBER :

TYPE OF CONSUMPTION :

NUMBER OF UNITS :

TOTAL AMOUNT :

**#PROGRAM**

con\_name=input("Enter consumer name:")

ebno=int(input("Enter eb number:"))

contype=input("Enter type of consumption:")

nou=int(input("Enter number of units:"))

if contype=='D' or contype=='d':

if nou<=100:

amt=0

elif nou>=101 and nou<=200:

amt=0+(nou-100)\*7

elif nou>=201 and nou<=300:

amt=0+100\*7+(nou-200)\*9.5

else:

amt=0+100\*7+100\*9.5+(nou-300)\*12

elif contype=='C' or contype=='c':

if nou<=100:

amt=nou\*10

elif nou>=101 and nou<=200:

amt=1000+(nou-100)\*25

elif nou>=201 and nou<=300:

amt=1000+100\*25+(nou-200)\*40

else:

amt=1000+100\*25+100\*40+(nou-300)\*55

else:

print("Invalid type of consumption")

#amt="amount not defined"

print("\t\tELECTRICITY BILL\n\t\t------------")

print("CONSUMER NAME :",con\_name)

print("EB NO :",ebno)

print("TYPE OF CONSUMPTION:",contype)

print("NO OF UNITS :",nou)

print("AMOUNT :",amt)

**#Output:**

a)

Enter consumer name:Raja

Enter eb number:12345

Enter type of consumption:D

Enter number of units:270

ELECTRICITY BILL

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CONSUMER NAME : Raja

EB NO : 12345

TYPE OF CONSUMPTION: D

NO OF UNITS : 270

AMOUNT : 1365.0

b)

Enter consumer name:Raja

Enter eb number:12345

Enter type of consumption:C

Enter number of units:270

ELECTRICITY BILL

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CONSUMER NAME : Raja

EB NO : 12345

TYPE OF CONSUMPTION: C

NO OF UNITS : 270

AMOUNT : 6300

**21/06/22 MENU DRIVEN PROGRAM TO FIND AREA OF THE SHAPES**

#4. Write a menu driven program to find the area of circle, rectangle, square and triangle

**#PROGRAM**

print("1.Area of Circle\n2.Area of Rectangle\n3.Area of Square\n4.Area of Triangle")

choice=int(input("Enter your choice:"))

if choice==1:

r=int(input("Enter radius:"))

print("Area of circle is ",3.14\*r\*r)

elif choice==2:

l=int(input("Enter length:"))

b=int(input("Enter breadth:"))

print("Area of Rectangle is",l\*b)

elif choice==3:

s=int(input("Enter side:"))

print("Area of Square is",s\*s)

elif choice==4:

b=int(input("Enter base:"))

h=int(input("Enter height:"))

print("Area of Triangle is",0.5\*b\*h)

else:

print("Invalid Choice")

**#OUTPUT:**

A)

1.Area of Circle

2.Area of Rectangle

3.Area of Square

4.Area of Triangle

Enter your choice:1

Enter radius:2

Area of circle is 12.56

B)

1.Area of Circle

2.Area of Rectangle

3.Area of Square

4.Area of Triangle

Enter your choice:2

Enter length:2

Enter breadth:4

Area of Rectangle is 8

C)

1.Area of Circle

2.Area of Rectangle

3.Area of Square

4.Area of Triangle

Enter your choice:3

Enter side:3

Area of Square is 9

D)

1.Area of Circle

2.Area of Rectangle

3.Area of Square

4.Area of Triangle

Enter your choice:4

Enter base:5

Enter height:7

Area of Triangle is 17.5

E)

1.Area of Circle

2.Area of Rectangle

3.Area of Square

4.Area of Triangle

Enter your choice:8

Invalid Choice

**28/06/2022 NUMBER MANIPULATION**

#5. WAP to accept a number and reverse the number and also count the number of odd

# and even digits in the number using while loop

**#PROGRAM**

n=int(input("Enter a number"))

rev=od=ev=0

while n!=0:

r=n%10

if r%2==0:

ev+=1

else:

od+=1

rev=rev\*10+r

n//=10

print("Reverse of the number =",rev)

print("Number of even digits=",ev)

print("Number of odd digits=",od)

**#OUTPUT:**

Enter a number53782

Reverse of the number = 28735

Number of even digits= 2

Number of odd digits= 3

**05/07/2022 PRINT THE SUM OF THE SERIES BY ACCEPTING THE CHOICE**

#6. Accept the choice and find the sum of the following series

1. x - x^2/2! + x^3/3! - x^4/4! + x^5/5! ..... ± x^n/n!

2. 1 + (1+2) + (1+2+3) + (1+2+3+4) + ......+ (1+2+....+n)

**#PROGRAM**

ch=int(input("Enter your choice"))

if ch==1:

x=int(input("Enter a value for x"))

n=int(input("Enter the limit"))

s,f=0,1

for i in range(1,n+1):

f=f\*i

if i%2==0:

s-=pow(x,i)/f

else:

s+=pow(x,i)/f

print("Sum of the series=",s)

elif ch==2:

n=int(input("Enter the limit"))

s,s1=0,0

for i in range(1,n+1):

s1+=i

s+=s1

print("Sum of the series=",s)

else:

print("Invalid choice")

**#Output:**

a)

Enter your choice1

Enter a value for x2

Enter the limit8

Sum of the series= 0.8634920634920635

b)

Enter your choice2

Enter the limit8

Sum of the series= 120

c)

Enter your choice7

Invalid choice

**05/07/2022 PRINT THE FORMAT USING NESTED LOOPS**

#7. Write a program to print the following output:

a)

1

2 3

4 5 6

7 8 9 10

**#PROGRAM**

k=1

for i in range(1,5):

for j in range(1,i+1):

print(k,end=' ')

k+=1

print()

**#OUTPUT**

1

2 3

4 5 6

7 8 9 10

b)

J I H G

F E D

C B

A

**#PROGRAM**

A=ord("J")

for i in range(4,0,-1):

for j in range(1,i+1):

print(chr(A),end=' ')

A-=1

print()

**#OUTPUT**

J I H G

F E D

C B

A

**12/07/2022 COUNTING ALPHABETS, SPACES, DIGITS AND SPECIAL CHARACTERS**

#8. Accept a line of strings and print the number of uppercase characters, lowercase characters,

#space, digits & special characters

**#PROGRAM**

s=input("Enter a string: ")

u=l=d=sp=sc=0

for i in s:

if i.isupper():

u+=1

elif i.islower():

l+=1

elif i.isdigit():

d+=1

elif i.isspace():

sp+=1

else:

sc+=1

print("Number of Uppercase letters:",u)

print("Number of lowercase letters:",l)

print("Number of digits:",d)

print("Number of spaces:",sp)

print("Number of special characters:",sc)

**#OUTPUT**

Enter a string: Chettinad Vidyashram @ 2021

Number of Uppercase letters: 2

Number of lowercase letters: 17

Number of digits: 4

Number of spaces: 3

Number of special characters: 1

**19/07/2022 TO PRINT THE SUM OF THE NUMBERS PRESENT IN THE GIVEN STRING**

#9. Write a program that does the following.

#i) Accept two inputs: one integer and one string

#ii) Extract all the digits, in the order they occur from the given string, add the given integer

#input and the digits extracted from the string.

#iii) If no digits occur in the given string, set the extracted digit to 0.

#Eg: For input 12, 'a4b5c6' ---- 12 + 456 =468

#For input 20, 'hello' ---- 20+0= 20

**#PROGRAM**

n=int(input("Enter integer no:"))

s=input("Enter the string:")

s1=' '

l=len(s)

for i in range(0,l):

if s[i].isdigit():

s1+=s[i]

m=int(s1)

else:

m=0

print("Given number = ",n)

print("Given String = ",s)

print("Sum =",n,"+",m,"=",n+m)

**#OUTPUT:**

a)

Enter integer no: 12

Enter the string: a4b5c6

Given number = 12

Given String = a4b5c6

Sum=12+456 = 468

b)

Enter integer no: 20

Enter the string: hello

Given number = 20

Given String = hello

Sum=20+0 = 20

**26/07/2022 STRING MANIPULATION**

#10. Write a program to accept a word (length of the word should be at least 3 and add ‘ing’ at #the end of the given word. If the given string already ends with ‘ing’ then add ‘ly’ instead. If #the length of the given string is less than 3, leave it unchanged.

#Input string: Land Output: Landing

#Input string: Smiling Output: Smilingly

#Input string: CV Output: CV

**#PROGRAM**

s=input("Enter any string: ")

l=len(s)

if l>2:

if s[-3:]=='ing':

s+='ly'

else:

s+='ing'

print("Modified string is",s)

**#OUTPUT**

a)

Enter any string: Land

Modified string is Landing

b)

Enter any string: Smiling

Modified string is Smilingly

c)

Enter any string: CV

Modified string is CV

**02/08/2022 PRINT PALINDROME WORDS FROM THE LINE**

#11. Write a program that reads a line of strings and print all the palindrome words from the line.

#Eg. S=’Ajay has a racecar. He is a level 1 racer.’

#Palindrome words: racecar level

**#PROGRAM**

s=input("Enter any string: ")

l=s.split()

print("Palindrome words are:")

for i in l:

i=i.strip('.')

rev=i[::-1]

if i.lower()==rev.lower() and len(i)>1:

print(i)

**#OUTPUT**

Enter any string: Ajay has a racecar. He is a level 1 racer.

Palindrome words are:

racecar

level

**09/08/2022 REPLACING SUBSTRING WITH GIVEN STRING**

#12. Write a program to input a string S1. Input two substrings S2 and S3 existing in S1 and a

#replacement string S4. Replace the range of string starting from S2 till end of S3 with S4.

#Ex: Given string S1 = 'Where there is a will there is a way'

#Substring S2 = 'there'

#Substring S3 = 'is'

#Substring S4 = 'exists'

#Output: Where exists a will exists a way

**#PROGRAM**

S1=input("Enter any string: ")

S2=input("Enter any substring that is existing in S1: ")

S3=input("Enter any substring that is existing in S1: ")

S4=input("Enter a replacement string: ")

ind\_s2=S1.find(S2)

ind\_s3=S1.find(S3)

if ind\_s3 > ind\_s2:

S1=S1.replace(S1[ind\_s2:(ind\_s3+len(S3))],S4)

print(S1)

else:

print(S1)

**#OUTPUT**

Enter any string: Where there is a will there is a way

Enter any substring that is existing in S1: there

Enter any substring that is existing in S1: is

Enter a replacement string: exists

Where exists a will exists a way

**16/08/2022 CONVERTING WORDS INTO TITLE CASE AND REVERSING THREE LETTER WORDS**

#13. Write a program that takes a string with multiple words and then capitalizes the first letter

#of each word and reverses all three letter words.

#Eg:Given String = ‘I have a car in red colour’

#New string = ‘I Have A raC In deR Colour’

**#PROGRAM**

s=input("Enter any string: ")

s=s.title()

l=s.split()

s1=''

for i in l:

if len(i)==3:

s1+= i[::-1]+' '

else:

s1+= i+' '

print(s1)

**#OUTPUT**

Enter any string: I have a car in red colour

I Have A raC In deR Colour

**23/08/2022 TO PRINT LONGEST WORD FROM THE GIVEN STRING AND PRINT THE SAME WITHOUT VOWELS**

#14. Write a program that reads a line and prints the longest word and its length and also print the

#same without vowels

#Eg: Given string = 'Python offers many methods for string manipulation'

#Output 1 = Longest word: Manipulation Its Length: 12

#Output 2 = Longest word without vowels: mnpltn

**#PROGRAM**

s=input("Enter a line of string :")

print("Given string =", s)

l=s.split()

longstr=''

length=0

for i in l:

if len(i)>length:

longstr=i

length=len(i)

print("Longest word:",longstr,"\tIts Length:",length)

print("Longest word without vowels:",end='')

for i in longstr:

if i in 'AEIOUaeiou':

continue

print(i,end='')

**#OUTPUT**

Enter a line of string :Python offers many methods for string manipulation

Given string = Python offers many methods for string manipulation

Longest word: manipulation Its Length: 12

Longest word without vowels:mnpltn

**30/08/2022 TO VALIDATE AND PRINT THE CORRECT PHONE NUMBER**

#15. Write a program to read N phone numbers with 10 digits and 2 dashes. Print all the valid

#phone numbers, if they are in the format 017-555-1212

Eg: Given phone numbers

044-225-2461

12-234-1235

044-223-1234

Output:

Valid phone numbers

044-225-2461

044-223-1234

**#PROGRAM**

N=int(input("Enter the limit"))

s = ''

print("Enter",N,"phone numbers")

for i in range(N):

p = input()

s+=p+'\n'

li=s.split()

print("Given phone numbers")

for i in li:

print(i)

print("Valid phone numbers are")

for i in li:

if len(i) == 12 and i[3] == '-' and i[7] == '-':

if (i[:3]+i[4:7]+i[8:]).isdigit():

print(i)

**#OUTPUT**

Enter the limit3

Enter 3 phone numbers

044-225-2461

12-234-1235

044-223-1234

Given phone numbers

044-225-2461

12-234-1235

044-223-1234

Valid phone numbers are

044-225-2461

044-223-1234

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