INDIAN SCHOOL AL WADI AL KABIR

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| **Class: IX**  | **Department: Computer Science** | **Date:03-05-2023** |
| **Practical Worksheet No: 1** | ARTIFICIAL INTELLIGENCE |

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| 1 | **Print 5 lines about yourself using print() function.** |
|  | Codename=input("Enter your name:")Class=input("Enter your class:")roll=input("Enter your roll number:")school=input("Enter your school name:")place=input("Enter your location:")print("Your details are", name, Class, roll, school, place, sep="\n")OutputEnter your name:AjayEnter your class:IXEnter your roll number:22Enter your school name:ISWkEnter your location:Wadi KabirYour details areAjayIX22ISWKWadi Kabir |
| 2 | Write a program to concatenate two string and repeat a string 3 times |
|  | **Code**:A="INDIAN"B="SCHOOL"C=A+B#CONCATENATIONprint(C)#STRING REPETITIONprint(A\*3)**Output**INDIANSCHOOLINDIANINDIANINDIAN |
| 3 | Write a program to show the arithmetic operations on two numbers. |
|  | **Code:**x=int(input("enter the first number"))y=int(input("enter the second number"))#additionsum=x+yprint("the sum of given two numbers is:",sum)#Subtractiondiff=x-yprint("the difference of given two numbers is:",diff)#multiplicationproduct=x\*yprint("the product of given two numbers is:",product)#divisionquotient=x//yprint("the quotient is:",quotient)remainder=x%yprint("the remainder is:",remainder)div=x/yprint("the result of division with decimal places:",div)**Output:**enter the first number10enter the second number3the sum of given two numbers is: 13the difference of given two numbers is: 7the product of given two numbers is: 30the quotient is: 3the remainder is: 1the result of division with decimal places: 3.3333333333333335 |
| 4 | Write a program to calculate energy using this formula: energy =PE+KE |
|  | **Code:**#To find Mechanical Energy of a Particleg = 9.8m = int(input("Enter Mass of an object(Kg): "))h = int(input("Enter displacement of an object(m): "))v = int(input("Enter velocity of an object(m/s): "))P = m\*g\*h #Potential energy(P.E = mgh)K =0.5\*m\*v\*v #Kinetic energy(K.E = 1/2mv^2)M = P+K #To calculate Mechanical energy(M.E = P.E+K.E)print("Potential Energy : " ,P,"J")print("Kinetic Energy : " ,K,"J")print("Total Mechanical Energy: " ,M,"J")**Output:**Enter Mass of an object(Kg): 20Enter displacement of an object(m): 5Enter velocity of an object(m/s): 15Potential Energy : 980.0 JKinetic Energy : 2250.0 JTotal Mechanical Energy: 3230.0 J |
| 5 | Write a program to calculate distance using this formula: distance = ut+1/2at2 |
|  | **Code:**ini\_vel=float(input("Enter the initial velocity in m/s: "))acc=float(input("Enter the acceleration in m/s2: "))time=float(input("Enter the time taken in seconds: "))dist=(ini\_vel\*time)+(0.5\*acc\*time\*time)print("The distance calculated is:",dist,"meters")**Output:**Enter the initial velocity in m/s: 3.5Enter the acceleration in m/s2: 2.4Enter the time taken in seconds: 10The distance calculated is: 155.0 meters |
| 6 | Write a program to check whether the number is positive or negative |
|  | **Code:** x=int(input("enter the number to check"))if x>0: print("the number is positive")elif x<0: print("the number is negative")else: print("the number is neither positive nor negative")**Output:**enter the number to check5the number is positiveenter the number to check-15the number is negativeenter the number to check0the number is neither positive nor negative |
| 7 | Write a program to check whether you are eligible for voting or not |
|  | **Code:**age=int(input("enter your age"))if age>=18 and age!=0: print("you are eligible for voting")elif age<18 and age!=0 : print("you are not eligible for voting")else: print("entered age is invalid")**Output**enter your age0entered age is invalidenter your age19you are eligible for votingenter your age13you are not eligible for voting |
| 8 | Write a program to check whether the entered number is odd or even. |
|  | **Code:**n=int(input("enter the number to check"))if n%2==0: print("%d is even number"%n)else: print("%d is odd number"%n)**Output:**enter the number to check2828 is even number |
| 9 | Create a list in Python of children selected for science quiz with following names- Arjun, Sonakshi, Vikram, Sandhya, Sonal, Isha, KartikPerform the following tasks on the list in sequence-○ Print the whole list○ Delete the name “Vikram” from the list○ Add the name “Jay” at the end○ Remove the item which is at the second position. |
|  | **Code**stud\_names=['arjun','sonakshi','vikram','sandhya','sonal','isha','kartik']print("The list created is:")print(stud\_names,"\n")stud\_names.remove('vikram')print("The list after removing vikram is:")print(stud\_names,"\n")stud\_names.append('jay')print("The list after adding jay at the end is:")print(stud\_names,"\n")stud\_names.pop(1)print("The list after removing the item in second position is:")print(stud\_names,"\n")**Output:**The list created is:['arjun', 'sonakshi', 'vikram', 'sandhya', 'sonal', 'isha', 'kartik'] The list after removing vikram is:['arjun', 'sonakshi', 'sandhya', 'sonal', 'isha', 'kartik'] The list after adding jay at the end is:['arjun', 'sonakshi', 'sandhya', 'sonal', 'isha', 'kartik', 'jay'] The list after removing the item in second position is:['arjun', 'sandhya', 'sonal', 'isha', 'kartik', 'jay'] |
| 10 | Create a list num=[23,12,5,9,65,44]○ Print the length of the list○ Print the elements from second to fourth position using positive indexing○ Print the elements from position third to fifth using negative indexing |
|  | **Code:**num=[23,12,5,9,65,44]print("length of the list is")length=len(num)print(length,"\n")print("the elements from 2nd to 4th position using positive indexing")print(num[1:4],"\n")print("the elements from 3rd to 5th position using negative indexing")print(num[-4:-1],"\n")**Output**length of the list is6 the elements from 2nd to 4th position using positive indexing[12, 5, 9] the elements from 3rd to 5th position using negative indexing[5, 9, 65]  |
| 11 | Write a program to lock or unlock your phone using pin or password and generate appropriate message**Code:**# Get user input for the PIN or passworduser\_input = input("Enter PIN or password: ")# Check if the user input matches the PIN or passwordif user\_input=='ISWK':# If the user input matches, unlock the phone print("Phone unlocked.")else:# If the user input does not match, lock the phone print("Phone locked.")**Output:**Enter PIN or password: ISWKPhone unlocked.Enter PIN or password: iswkPhone locked. |
| 12 | A tours and travels company charges their customer as per following criteria according to customer category: Write a program to display the appropriate messages.

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| Category | Charges |
| A | 18 |
| B | 15 |
| C | 12 |
| D | 10 |

**CODE:**category=input("Enter the category")if category=='A': print("The charges for the category",category,"is:18")elif category=='B': print("The charges for the category",category,"is:15")elif category=='C': print("The charges for the category",category,"is:12")elif category=='D': print("The charges for the category",category,"is:10")else: print("incorrect category entered")**Output:**Enter the categoryAThe charges for the category A is:18 |
| 13 | Write a program to reverse entered number using while loop.**Code:**num = 1234reversed\_num = 0while num != 0: digit = num % 10 reversed\_num = reversed\_num \* 10 + digit num //= 10print("Reversed Number: " + str(reversed\_num))**Output:**Reversed Number: 4321 |
| 14 | Write a program to check entered number is Armstrong or not# Python program to check if the number is an Armstrong number or not.**Code:**# take input from the usernum = int(input("Enter a number: "))# initialize sumsum = 0# find the sum of the cube of each digittemp = numwhile temp > 0: digit = temp % 10 sum += digit \*\* 3 temp //= 10# display the resultif num == sum: print(num,"is an Armstrong number")else: print(num,"is not an Armstrong number")**Output:**Enter a number: 153153 is an Armstrong number |
| 15 | Write a program to print a multiplication table of entered number**Code:**# Multiplication table (from 1 to 10) in Python# To take input from the usernum = int(input("Display multiplication table of? "))# Iterate 10 times from i = 1 to 10for i in range(1, 11): print(num, 'x', i, '=', num\*i)**Output:**Display multiplication table of? 33 x 1 = 33 x 2 = 63 x 3 = 93 x 4 = 123 x 5 = 153 x 6 = 183 x 7 = 213 x 8 = 243 x 9 = 273 x 10 = 30 |
| 16 | Write a program to find sum of first N numbers**CODE:**# Sum of natural numbers up to Nnum = 16if num < 0: print("Enter a positive number")else: sum = 0 # use while loop to iterate until zero while(num > 0): sum += num num -= 1 print("The sum is", sum)**Output:**The sum is 136 |
| 17 | Write a program to take the temperature in Celsius and convert it to Fahrenheit.**CODE:**Celsius=int(input("Enter the temperature in Celsius:"))f=(Celsius\*1.8)+32print("Temperature in Fahrenheit is:",f)**Output:**Enter the temperature in Celsius:23Temperature in Fahrenheit is: 73.4 |
| 18 | Program to Check If a number is Prime or not**CODE:**# taking input from usernumber = int(input("Enter any number: "))# prime number is always greater than 1if number > 1: for i in range(2, number): if (number % i) == 0: print(number, "is not a prime number") break else: print(number, "is a prime number")**Output:**Enter any number: 1212 is not a prime number |