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.** |
|  | Code  name=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")  Output  Enter your name:Ajay  Enter your class:IX  Enter your roll number:22  Enter your school name:ISWk  Enter your location:Wadi Kabir  Your details are  Ajay  IX  22  ISWK  Wadi Kabir |
| 2 | Write a program to concatenate two string and repeat a string 3 times |
|  | **Code**:  A="INDIAN"  B="SCHOOL"  C=A+B  #CONCATENATION  print(C)  #STRING REPETITION  print(A\*3)  **Output**  INDIANSCHOOL  INDIANINDIANINDIAN |
| 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"))  #addition  sum=x+y  print("the sum of given two numbers is:",sum)  #Subtraction  diff=x-y  print("the difference of given two numbers is:",diff)  #multiplication  product=x\*y  print("the product of given two numbers is:",product)  #division  quotient=x//y  print("the quotient is:",quotient)  remainder=x%y  print("the remainder is:",remainder)  div=x/y  print("the result of division with decimal places:",div)  **Output:**  enter the first number10  enter the second number3  the sum of given two numbers is: 13  the difference of given two numbers is: 7  the product of given two numbers is: 30  the quotient is: 3  the remainder is: 1  the 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 Particle  g = 9.8  m = 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): 20  Enter displacement of an object(m): 5  Enter velocity of an object(m/s): 15  Potential Energy : 980.0 J  Kinetic Energy : 2250.0 J  Total 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: 3.5  Enter the acceleration in m/s2: 2.4  Enter the time taken in seconds: 10  The 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 check5  the number is positive  enter the number to check-15  the number is negative  enter the number to check0  the 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 age0  entered age is invalid  enter your age19  you are eligible for voting  enter your age13  you 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 check28  28 is even number |
| 9 | Create a list in Python of children selected for science quiz with following names- Arjun, Sonakshi, Vikram, Sandhya, Sonal, Isha, Kartik  Perform 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 is  6  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 password  user\_input = input("Enter PIN or password: ")  # Check if the user input matches the PIN or password  if 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: ISWK  Phone unlocked.  Enter PIN or password: iswk  Phone 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.   |  |  | | --- | --- | | 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 categoryA  The charges for the category A is:18 |
| 13 | Write a program to reverse entered number using while loop.  **Code:**  num = 1234  reversed\_num = 0  while num != 0:  digit = num % 10  reversed\_num = reversed\_num \* 10 + digit  num //= 10  print("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 user  num = int(input("Enter a number: "))  # initialize sum  sum = 0  # find the sum of the cube of each digit  temp = num  while temp > 0:  digit = temp % 10  sum += digit \*\* 3  temp //= 10  # display the result  if num == sum:  print(num,"is an Armstrong number")  else:  print(num,"is not an Armstrong number")  **Output:**  Enter a number: 153  153 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 user  num = int(input("Display multiplication table of? "))  # Iterate 10 times from i = 1 to 10  for i in range(1, 11):  print(num, 'x', i, '=', num\*i)  **Output:**  Display multiplication table of? 3  3 x 1 = 3  3 x 2 = 6  3 x 3 = 9  3 x 4 = 12  3 x 5 = 15  3 x 6 = 18  3 x 7 = 21  3 x 8 = 24  3 x 9 = 27  3 x 10 = 30 |
| 16 | Write a program to find sum of first N numbers  **CODE:**  # Sum of natural numbers up to N  num = 16  if 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)+32  print("Temperature in Fahrenheit is:",f)  **Output:**  Enter the temperature in Celsius:23  Temperature in Fahrenheit is: 73.4 |
| 18 | Program to Check If a number is Prime or not **CODE:**  # taking input from user  number = int(input("Enter any number: "))  # prime number is always greater than 1  if 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: 12  12 is not a prime number |