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**Exercise 3**

**(1) Generate squares of all the integers from 1 to 50.**

**(2) Count the number of characters in a string using a loop.**

**(3) Print a string in reverse.**

**(4) Find all the prime numbers below 50.**

**(5) Sum all the multiple integers of 5 below 50.**

**(6) Generate the patterns given below:**

**\* 1 12345 \* \* 21 2 23 4 5 \* \* \* \* 32 1 23 34 5 \*\*\*\*\* 4321234 45**

**5**

**(7) Print Armstrong numbers in the range 1 to 1000. An Armstrong number is a number whose sum of the cubes of the digits is equal to the number itself.**

**For example, 370 = 33+73+03**

**(8)Create an employee database having record for 5-10 employees in it. The attributes for an employee record are his/her name, age, salary, address. Take inputs from the user. (a)Print each record on a separate line**

**(b) Update a record with given name.**

**CODE**

**#Program 1  
for i in range(1,51):**

**s=i\*i**

**print("Integer = ",i," Square = ",s)**

**#Program 2**

**string = input("Enter a string: ")**

**print(string)**

**char = 0**

**for i in string:**

**char=char + 1**

**print("The Number of Characters in a String is ",char)**

**#Program 3**

**w=input(“Enter the string :”)**

**l=len(w)**

**str=""**

**for i in w :**

**str= i + str**

**print("The reversed string is :",str)**

**#Program 4**

**for Number in range (1, 51):**

**count = 0**

**for i in range(2, (Number//2 + 1)):**

**if(Number % i == 0):**

**count = count + 1**

**break**

**if (count == 0 and Number != 1):**

**print(" %d" %Number, end = ' ')**

**#Program 5  
lst=[]**

**max = 51**

**result = 0**

**print("Multple Integers of 5: ")**

**for i in range(0,max):**

**if i%5 == 0:**

**lst.append(i)**

**result += i**

**print(lst)**

**print("\nSum all the multiple integers of 5 below 50 = ",result)**

**#Program 6**

**for i in range(0, 5):**

**for j in range(0, i+1):**

**print("\* ",end="")**

**print()**

**print("\n\n\n")**

**rows = 5**

**for i in range(0, rows + 1):**

**for j in range(rows-i, 0, -1):**

**print(j, end=' ')**

**print()**

**print("\n\n\n")**

**size = 7**

**m = (2 \* size) - 2**

**for i in range(0, size):**

**for j in range(0, m):**

**print(end=" ")**

**# decrementing m after each loop**

**m = m - 1**

**for j in range(0, i + 1):**

**print(j, end=' ')**

**print(" ")**

**#Program 7**

**lst = []**

**print("Armstrong Numbers Between 1 and 1000:")**

**first = 1**

**last = 1000**

**while first<=last:**

**res = 0**

**temp = first**

**noOfDigit = 0**

**while temp>0:**

**temp = int(temp/10)**

**noOfDigit = noOfDigit + 1**

**num = first**

**while num>0:**

**rem = num%10**

**pow = 1**

**i = 0**

**while i<noOfDigit:**

**pow = pow\*rem**

**i = i+1**

**res = res+pow**

**num = int(num/10)**

**if res == first:**

**lst.append(res)**

**first = first+1**

**print("\n")**

**print(lst)**

**#Program 8**

**class Person():**

**def \_\_init\_\_(self, per\_name, per\_age):**

**self.name = per\_name**

**self.age = per\_age**

**def display1(self):**

**print("Name:", self.name)**

**print("Age:", self.age)**

**# subclass**

**class Employee(Person):**

**def \_\_init\_\_(self, emp\_name, emp\_age, emp\_salary, emp\_address):**

**super().\_\_init\_\_(emp\_name, emp\_age)**

**self.salary = emp\_salary**

**self.address=emp\_address**

**def display2(self):**

**super().display1()**

**print("Salary:", self.salary)**

**print("Address:", self.address)**

**emp= Employee("MERU NATH TIWARI", 21, 90000, "Mahoba, Uttar Pradesh")**

**emp1= Employee("Rahul Gusain", 19, 100000, "Dehradun, Uttarakhand")**

**emp2= Employee("Rohit Kumar", 19, 95000, "Bhagalpur, Bihar")**

**emp3= Employee("Hiya Chopra", 18, 98000, "Dehradun, Uttarakhand")**

**emp4= Employee("Anshul Pandey", 19, 94000, "Dehradun, Uttarakhand")**

**emp5= Employee("Vanshika Awasthi", 18, 95420, "Jhansi, Uttar Pradesh")**

**emp6= Employee("Vaishali Saxena", 26, 120000, "Kanpur, Uttar Pradesh")**

**emp7= Employee("Monika Manglik", 200000, 2000, "Dehradun, Uttarakhand")**

**emp8= Employee("Nilima Salankar Fulmare", 89, 100, "Dehradun, Uttarakhand")**

**emp9= Employee("Avita Katal", 36, 150, "Dehradun, Uttarakhand")**

**emp.display2()**

**print("\n\n")**

**emp1.display2()**

**print("\n\n")**

**emp2.display2()**

**print("\n\n")**

**emp3.display2()**

**print("\n\n")**

**emp4.display2()**

**print("\n\n")**

**emp5.display2()**

**print("\n\n")**

**emp6.display2()**

**print("\n\n")**

**emp7.display2()**

**print("\n\n")**

**emp8.display2()**

**print("\n\n")**

**emp9.display2()**