**PROGRAMS-1**

**[ problems covering fundamentals/operators and functions/control flow]**

1. ***Find whether the given three digit number is armstrong or not***

(If the sum of the cubes of the individual digits of the number is equal to that number)

1. ***Display the following output.***

***1***

***121***

***12321***

1. ***Find how many times a digit is occuring in a given number***

(13357 contains 1 one time, 3 two times, 5 one time and 7 one time like that)

1. ***Form a new string by taking 1st/3rd/6th/7th fields from the following line with ‘|’ as separator.***

icrisat:x:1001:51:global crop research institute:/home/icrisat:/bin/bash

1. ***Display all the python program files which have two characters only as part of their filename other than the extention*.**

**PROGRAMS-2**

**[ problems covering user defined functions/modules & packages/files & exceptions ]**

1. **Create a package ‘main.app’ which as ‘master’ and ‘trans’ as sub-directories .Create master.py file which has three actions – addition/deletion/modification of an employee record. Create trans.py file which will accept employee number, no. Of days attended in a month and basic. Finally, generate the payslip of an employee. Use possible exceptions wherever possible.**

**PROGRAMS-3**

**[ problems covering Regular Expressions & Python Standard Library & databases]**

**Exercise: 1**

Create a data file called employee in the format given below:

a. EmpCode    Character

b. EmpName   Character

c. Grade           Character

d. Years of experience

e. Basic Pay     Numeric

A001           ARJUN       E1      01      12000.00

A006           Anand         E1      01      12450.00

A010           Rajesh         E2      03      14500.00

A002           Mohan         E2      02      13000.00

A005           John             E2      01      14500.00

A009           Denial SmithE2      04      17500.00

A004           Williams      E1      01      12000.00

1. Sort the file on EmpCode.
2. Sort the file on (i) Decreasing order of basic pay (ii) Increasing order of years of experience.
3. Display the number of employees whose details are included in the file.
4. Display all records with ‘smith’ a part of employee name.
5. Display all records with EmpName starting with ‘B’.
6. Display the records on Employees whose grade is E2 and have work experience of 2 to 5 years.
7. Store in ‘file 1’ the names of all employees whose basic pay is between 10000 and 15000.
8. Display records of all employees who are not in grade E2.

**Exercise: 2**

In a bed \_le, how can you get a list of all distinct chromosomes? For example, if your

bed \_le consists of nine entries such as

chr2 74711 127472363 Pos1 0 +

chr3 74723 127473530 Pos2 0 +

chr1 73530 127474697 Pos3 0 +

chr2 17469 127475864 Pos4 0 +

chr3 12747 127477031 Neg1 0 -

chr5 17477 127478198 Neg2 0 -

chr7 74781 127479365 Neg3 0 -

chr7 74795 127480532 Pos5 0 +

chr1 12748 127481699 Neg4 0 –

then how can you obtain the list chr1, chr2, chr3, chr5, chr7?

You have a bed file where the chromosome the entry is coming from, is given in the firrst column. The chromosomes are labeled as chr1, chr2, ..., chr22, chrX, chrY. How can you extract the entries that only come from chromosome 1?

**PROGRAMS-4**

**[ problems covering oops and debugging]**

1. **Create ‘CARS’ class which has the attributes:- color/cost/manufacturer/mileage and code the methods to accept these values.**

**Create ‘BUSES’ class which has the attributes:- color/cost/manufacturer/mileage and code the methods to accept these values**

**A School has 2 differnt cars and 3 different buses. Codify all these using oops in Python.**

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