1. A disk drive shows **T** bytes and **U** bytes as free and used space respectively. If you delete a file of size **O** bytes and create a new file of size **H** bytes then how many free bytes will the disk have? Here **T**, **U**, **O** and **H** are user-entered values. Write a program in python to find the same.

2. The mumbai city local train system carries 2,75,000 people each day. The train system observes 15% growth in rainy season only for a particular period (in months) entered by user. How many people does the train system carry each year? Write a program in python for the same.

3. Mr. Samuel Gene is purchasing items for his relatives. He has purchased the following items:
   i. 3 shirts, at the rate of 680 rupees
   ii. 1 computer game, at the rate of 750 rupees
   iii. 2 bracelets, at the rate of 230 rupees

   Write a program to find the total cost. Later he returned one of the bracelet for a full refund and one shirt at a loss of 50%. Find the total cost after refund using the same program.

4. Salesperson Rita drives 2,052 miles in **N** days, stopping at 2 towns each day. How many miles does she average between the setups. Write a program in python for the same where value of **N** is provided by user.

5. Sanorita rented two movies to watch last night. The first was 100 minutes long, the second was 150 minutes long. Sanorita has to pay **D** dollars for each 50 minutes. How many hours did it take for Sanorita to watch the two movies and how much she has to pay (in dollars). Write a program in Python for the same where **D** is entered by user.

6. Write a program in python to find the sum of three numbers, entered by user, with the condition that if one of the value is the same as another of the values, it does not count towards the sum.

7. Write a program in python that makes square of unique elements only for the list entered by user.

8. Write a program in python to check the occurrences of each element of a string using dictionary. A space separated string of elements will be provided by user.

9. Write a program in python to find the palindrome in a list where the list of strings is entered by user.

10. Write a program in python using regular expression to retrieve all words having at least 4 character length. The text file name containing words is given by user.

11. Write a program in python to find all missing numbers in the list containing a series of 1 to 100.

12. Jack bought 200 burgers for the school picnic. They were contained in packages of 8 burgers. Write a program in python to find how many total packages did he buy?

Q16. Write a program in python to push all zeroes at the end of the list of N length, where list and length is provided by user.

Q17. Write a program in python to calculate the sum of the digits of the number 2^{40}

Q18. Write a program in python using regular expression to find the sequence of one uppercase letter followed by lower case letter

Q19. David spent 10% of her weekly earnings on Toys and deposited the rest in to his savings accounts. Write a program in python to find how much did he deposit in to his saving account if he spent 40 rupees on Toys.

Q20. There are 10 students in a class. Some students' names are same to other students. Write a python program to print the names that occur more than one time. The file name will be given by user where all names are written in a file as new line.

1. Write a function intreverse(n) that takes as input a positive integer n and returns the integer obtained by reversing the digits in n.

   Here are some examples of how your function should work.

   ```
   >>> intreverse(783)
   387
   >>> intreverse(242789)
   987242
   >>> intreverse(3)
   3
   ```

2. Write a function matched(s) that takes as input a string s and checks if the brackets "(" and ")" in s are matched: that is, every "(" has a matching ")" after it and every ")" has a matching "(" before it. Your function should ignore all other symbols that appear in s. Your function should return True if s has matched brackets and False if it does not.

   Here are some examples to show how your function should work.

   ```
   >>> matched("zb%78")
   True
   >>> matched("(7)(a")
   False
   >>> matched("a)*(?")
   False
   >>> matched("((jkl)78(A)&l(8(dd(FJI:),):)?)")
   True
   ```

3. Write a function sumprimes(l) that takes as input a list of integers and returns the sum of all the prime numbers in l.

   Here are some examples to show how your function should work.

   ```
   >>> sumprimes([3,3,1,13])
   19
   >>> sumprimes([2,4,6,9,11])
   13
   >>> sumprimes([-3,1,6])
   0
   ```

4. Define a Python function "descending(l)" that returns True if each element in its input list is at most as big as the one before it

   For instance:

   ```
   >>> descending([])
   True

   >>> descending([4,4,3])
   True

   >>> descending([19,17,18,7])
   False
   ```

5. A two dimensional matrix can be represented in Python row-wise, as a list of lists: each inner list represents one row of the matrix. For instance, the matrix

   ```
   1  2  3
   4  5  6
   ```

   would be represented as [[1,2,3],[4,5,6]].

   Write a Python function "matmult(m1,m2)" that takes as input two matrices using this row-wise representation and returns the matrix product m1*m2 using the same representation.

   You may assume that the input matrices are well-formed and have compatible dimensions.

   For instance:

   ```
   >>> matmult([[1,2],[3,4]],[[1,0],[0,1]])
   [[1,2],[3,4]]

   >>> matmult([[1,2,3],[4,5,6]],[[1,4],[2,5],[3,6]])
   [[14, 32], [32, 77]]
   ```

6. Define a Python function "alternating(l)" that returns True if the values in the input list alternately go up and down (in a strict manner).

   For instance:

   ```
   >>> alternating([])
   True

   >>> alternating([1,3,2,3,1,5])
   True

   >>> alternating([3,2,3,1,5])
   True

   >>> alternating([3,2,2,1,5])
   False

   >>> alternating([3,2,1,3,5])
   False
   ```