**PYTHON ACTIVITY 15):**

1. Many people think about their height in feet and inches, even in some countries that primarily use the metric system. Write a program that reads a number of feet from the user, followed by a number of inches. Once these values are read, your program should compute and display the equivalent number of centimeters.

Hint: One foot is 12 inches. One inch is 2.54 centimeters.

2)A univariate quadratic function has the form f (x) = ax 2 + bx + c, where a, b and c are constants, and a is non-zero. The roots of a quadratic function can be found by finding the values of x that satisfy the quadratic equation ax 2 + bx + c = 0. A quadratic function may have 0, 1 or 2 real roots. These roots can be computed using the quadratic formula, shown below:

root =√−b ± b 2 − 4ac/2a

The portion of the expression under the square root sign is called the discriminant. If the discriminant is negative then the quadratic equation does not have any real roots. If the discriminant is 0, then the equation has one real root. Otherwise the equation has two real roots, and the expression must be evaluated twice, once using a plus sign, and once using a minus sign, when computing the numerator. Write a program that computes the real roots of a quadratic function. Your program should begin by prompting the user for the values of a, b and c. Then it should display a message indicating the number of real roots, along with the values of the real roots (if any).

3)A string is a palindrome if it is identical forward and backward. For example “anna”, “civic”, “level” and “hannah” are all examples of palindromic words. Write a program that reads a string from the user and uses a loop to determines whether or not it is a palindrome. Display the result, including a meaningful output message.

1. In this exercise you will write a function that determines whether or not a password is good. We will define a good password to be a one that is at least 8 characters long and contains at least one uppercase letter, at least one lowercase letter, and at least one number. Your function should return true if the password passed to it as its only parameter is good. Otherwise it should return false. Include a main program that reads a password from the user and reports whether or not it is good. Ensure that your main program only runs when your solution has not been imported into another file.
2. Write a program that reads integers from the user and stores them in a list. Use 0 as a sentinel value to mark the end of the input. Once all of the values have been read your program should display them (except for the 0) in reverse order, with one value appearing on each line.
3. When writing out a list of items in English, one normally separates the items with commas. In addition, the word “and” is normally included before the last item, unless the list only contains one item. Consider the following four lists:

apples

apples and oranges

apples, oranges and bananas

apples, oranges, bananas and lemons

Write a function that takes a list of strings as its only parameter. Your function

should return a string that contains all of the items in the list formatted in the manner described previously as its only result. While the examples shown previously only include lists containing four elements or less, your function should behave correctly for lists of any length. Include a main program that reads several items from the user, formats them by calling your function, and then displays the result returned by the function.

1. While the popularity of cheques as a payment method has diminished in recent years, some companies still issue them to pay employees or vendors. The amount being paid normally appears on a cheque twice, with one occurrence written using digits, and the other occurrence written using English words. Repeating the amount in two different forms makes it much more difficult for an unscrupulous employee or vendor to modify the amount on the cheque before depositing it. In this exercise, your task is to create a function that takes an integer between 0 and 999 as its only parameter, and returns a string containing the English words for that number. For example, if the parameter to the function is 142 then your function should return “one hundred forty two”. Use one or more dictionaries to implement your solution rather than large if/elif/else constructs. Include a main program that reads an integer from the user and displays its value in English words.
2. Create a program that determines and displays the number of unique characters in a string entered by the user. For example, Hello, World! has 10 unique characters while zzz has only one unique character. Use a dictionary or set to solve this problem.