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Assignment Set :1

Problem No: 8

Problem Statement :

Convert your Name and Surname into large integers by juxtaposing integer ASCII codes for alphabet. Print the corresponding converted integer. Cut the large integers into two halves and add the two halves. Compute the remainder after dividing the by the prime numbers *P* in problem 7.

Solution Approach:

In each case ,that is name or surname we will be first considering the ASCII code for the alphabets then convert that code to string and keep it concatenating with an empty string .When this is over we print the corresponding integer and then initialise two other strings with first with first as the substring of first half of the original string and second string as the remaining half of the original string. Then again convert both the strings to integers and add them .The result obtained from the addition is then divided by the prime numbers of the previous problem say from a prime p choosing from the Array[1..8] and print the number obtained.

Structured Pseudocode :

1.Initialise char name[]=”name”,char surname[]=”surname”

2.Initialise empty strings str,str1,str2

1.from i from 1 to name.length()

2. do,str=str+convert\_to\_string(name[i])

3.from j from 1 to name.length()/2

4. initialise str1=first half substring of str

5. initialise str2=last half substring of str

6.convert str1 to integer temp1,str2 to integer temp2

7.sum= temp1+temp2

6.print the sum modulo p for each prime in Array[1..i..8]

//Indentation refers to the scope of a particular block

Results:

In this problem we are juxtaposing the ASCII code of each alphabets in the name and surname and then creating a large integer from it .The large integer is then halved and then added and divided by the prime number of the previous problem and the result is printed .This is done once for the name and surname .

Discussions:

Possible problems can occur if the name is way too large such that the string formed can’t be converted into large integer due to overflow problem , so the name should be not too large .That case would require the creation of the integers using an array with the array elements holding each digit of the number.

We can make a large string but while converting it to large integer we should be careful about the upper limit of the integer that is supported by our compiler and check the possibilities of integer overflow.

Separate files containing commented source code

The file has been attached.