ANKARA UNIVERSITY

COMPUTER ENGINEERING DEPARTMENT

Computer Programming II

Spring 2022-23

LAB5 Quiz
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An interesting number is a number which has the some rules like:

89 --> $8^1 + 9^2 = 89 * 1$

695 --> $6^2 + 9^3 + 5^4 = 1390 = 695 * 2$

46288 --> $4^3 + 6^4 + 2^5 + 8^6 + 8^7 = 2360688 = 46288 * 51$

You will write a function which takes a number n and a positive integer p and returns a positive integer k , such as the sum of the digits of n taken to the successive powers of p is equal to k*n.

a, b, c, d …. are the digits of given number

So if there is an integer k

(a^p + b^(p+1) + c^(p+2) + d^(p+3) + ….) = n * k →like that

You need to print k

Otherwise , your function will return -1 if k is not found.

function prototype is

interesting_number (n, p)

Example:

interesting_number (89, 1) —> 1

because $8^1 + 9^2 = 89 = 89 * 1$

interesting_number (92, 1) —> -1

because there is no k such as $9^1 + 2^2$ equals 92 * k

interesting_number (695, 2) —> 2

$6^2 + 9^3 + 5^4 = 1390 = 695 * 2$ //be careful !! power starts from 2, not from 1

interesting_number (261,3) —> 5

$2^3 + 6^4 + 1^5 = 1305 = 261*5$ //be careful !! power starts from 3, not from 1

Submission:

1- Name your C source file as <student_id>.c; replace <student_id> with your student id number.

2- Upload your C file using the interface provided in e-kampüs course page.

Compiling Process

Compiling your program and to use the input file

//normal compile process
gcc yourfilename.c -o yourprogramname

//running compiled program
./yourprogramname

//to use .txt file as input
./yourprogramname<input.txt

// to use .txt file as input and to print the results to .txt file
./yourprogramname<input.txt>output.txt

// to compare two files
diff -w filename1 filename2

Please, PAY ATTENTION TO THE I/O FORMAT!