Homework
Week 2

Bogazici Airbenders UAV Team

Problem 1. Given positive integers m coprime to n, meaning that they share no common divisors greater than 1, a positive integer k is called the order of m modulo n if and only if k is the smallest positive integer such that when m^k is divided by n, the remainder is 1, equivalently k is the smallest positive integer such that $m^k \equiv 1 \pmod{n}$. Write a program that takes a prime p as input and puts orders of positive integers $1 < m < p$ modulo p into a vector and prints them all consecutively. You may assume that k always exists.

Notice that k always is a divisor of $p - 1$ as a consequence of a theorem in Number Theory!

Problem 2. A string is a palindrome if it is spelled the same forward and backward ignoring spaces, punctuation, capitalization. The word *Kayak* is a palindrome. Write a program that takes a string as input and computes if the given string is a palindrome or not. The program should ask "*Do you want to check another string? (y/n)*" after every check.

Hint: You may want to use the cctype library to check if given character is alphanumeric. Also, you may want to use getline() and cin.ignore().