

Problem:

schedule a tournament with n teams such that each team plays every other team exactly once

Input:

number of teams n

Output:

fixture of matches

Steps:

1. open text file containing the team names
2. ask user for number of teams n
3. read n team names from text file
4. if n odd, add a dummy team to the list to make n even
5. for the first $n-2$ rounds :
 - a. output - round k
 - b. initialize a vector x of length n with entries 1
 - c. if team i ($i = 1$ to n) is not assigned a match
 - i. if $2i = k \pmod{n-1}$
 - ii. if team n is dummy, bye round for team i
 - iii. else team i plays team n
 $x(i) = 0, x(n) = 0$
 - d. else team i plays team j , where $i+j = k \pmod{n-1}$
 $x(i) = 0, x(j) = 0$
6. for the last round :
 - a. output - round k
 - b. initialize a vector x of length n with entries 1
 - c. if team i ($i = 1$ to $n-2$) is not assigned a match
 - i. output - team i plays team $n-i-1$
 $x(i) = 0, x(n-i-1) = 0$
 - d. if n odd - bye round for team $n-1$
 - e. else - team $n-1$ plays team $n-2$