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PROG: treat

LANG: C++

ID: hayk.sa1

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#include <stdio.h>

#include <string.h>

int p[100010];

int t[100010];

int d[100010];

int main()

{

freopen("treat.in", "r", stdin);

freopen("treat.out", "w", stdout);

int n, c, s, l, i;

scanf("%d", &n);

for (i = 0; i < n; i++)

{

scanf("%d", p+i);

p[i]--;

}

memset(d, -1, sizeof(d));

for (i = 0; i < n; i++)

if (!t[i])

{

l = 1;

c = i;

while (!t[c])

{

if (d[c] != -1)

break;

t[c] = l++;

c = p[c];

}

if (d[c] == -1)

{

s = p[c];

d[c] = l-t[c];

while (s != c)

{

d[s] = l-t[c];

s = p[s];

}

l = t[c];

}

s = i;

while (s != c)

{

d[s] = l-t[s]+d[c];

s = p[s];

}

}

for (i = 0; i < n; i++)

printf("%d\n", d[i]);

return 0;

}