Implementation of Josephus Problem using Circular LL

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// code:
#include <stdio.h>
#include <stdlib.h>
// Josephus problem using circular linked list
struct node {
   int id;
   struct node *next;
};

struct node *start, *ptr, *newNode;

int main() {
   int i, n, k, count;
   printf("Enter the number of player :  ");
   scanf("%d", &n);
   printf("Enter value of k :  ");
   scanf("%d", &k);

   start = malloc(sizeof(struct node));
   start->id = 1;
   ptr = start;
   // creating list of size n
   for (i = 2 ; i <= n ; i++) {
      newNode = malloc(sizeof(struct node));
      ptr->next = newNode;
      newNode->id = i;
      newNode->next = start;
      ptr = newNode;
   }
   // traversing the list and deleting every kth node
   for (count = n ; count>1 ; count--) {

      for (i = 0 ; i < k-1 ; i++) {
         ptr = ptr->next;
      }
      ptr->next = ptr->next->next;
   }
   printf("\nW I N N E R :  %d", ptr->id);
}
```

// output

```
Enter the number of player :  5
Enter value of k :  2

W I N N E R :  3
Process returned 0 (0x0)   execution time : 3.743 s
Press any key to continue.
```

```
Enter the number of player :  7
Enter value of k :  3

W I N N E R :  4
Process returned 0 (0x0)   execution time : 4.812 s
Press any key to continue.
```