

WAP in Java to implement thread synchronization

Code:

```
#include <stdio.h>
#include <stdlib.h>
#include <malloc.h>

struct node
{
    int info;
    struct node *next;
} *start, *q, *r;

void kill(int n, int k);

void display(int n, int k)
{
    q = start;
    int i = 0;
    while ((q != NULL) && (i <= n))
    {
        if (i != 0)
        {
            printf("-> ");
        }
        i++;
        printf("%d ", q->info);
        q = q->next;
    }
    printf("\n");
    kill(n, k);
}

void kill(int n, int k)
{
    if (n != k)
    {
        q = start;
        for (int j = 0; j < k - 1; j++)
        {
            q = q->next;
        }
        r = q->next;
        q->next = r->next;
        start = r->next;
        free(r);
    }
}
```

```

        display(n - 1, k);
    }
}

void createLinkedList(int n, int k)
{
    int counter = 1;
    while (counter <= n)
    {
        struct node *temp;
        temp = malloc(sizeof(struct node));
        temp->info = counter;
        temp->next = NULL;

        if (start == NULL)
        {
            start = temp;
            counter++;
        }
        else
        {
            q = start;
            while (q->next != NULL)
            {
                q = q->next;
            }
            q->next = temp;
            counter++;
            if (counter > n)
            {
                q = q->next;
                q->next = start;
            }
        }
    }
    display(n, k);
}

int main()
{
    int n, k;
    printf("Enter number of person: ");
    scanf("%d", &n);

    printf("Enter skip length: ");
    scanf("%d", &k);
}

```

```

    createLinkedList(n, k);
    return 0;
}

```

Output:

```
PS C:\Users\Ajay kumar\Desktop\SEIT-B> cd "c:\Users\Ajay
```

```
Enter number of person: 10
```

```
Enter skip length: 3
```

```
1 -> 2 -> 3 -> 4 -> 5 -> 6 -> 7 -> 8 -> 9 -> 10 -> 1
```

```
9 -> 10 -> 1 -> 2 -> 3 -> 5 -> 6 -> 7 -> 9
```

```
3 -> 5 -> 6 -> 7 -> 9 -> 10 -> 1 -> 3
```

```
9 -> 10 -> 1 -> 3 -> 5 -> 6 -> 9
```

```
5 -> 6 -> 9 -> 10 -> 1 -> 5
```

```
1 -> 5 -> 6 -> 9 -> 1
```

```
1 -> 5 -> 6 -> 1
```

```
PS C:\Users\Ajay kumar\Desktop\SEIT-B> cd "c:\Users\Ajay
```

```
Enter number of person: 14
```

```
Enter skip length: 1
```

```
1 -> 2 -> 3 -> 4 -> 5 -> 6 -> 7 -> 8 -> 9 -> 10 -> 11 -> 12 -> 13
```

```
-> 14 -> 1
```

```
3 -> 4 -> 5 -> 6 -> 7 -> 8 -> 9 -> 10 -> 11 -> 12 -> 13 -> 14 -> 1
```

```
-> 3
```

```
5 -> 6 -> 7 -> 8 -> 9 -> 10 -> 11 -> 12 -> 13 -> 14 -> 1 -> 3 -> 5
```

```
7 -> 8 -> 9 -> 10 -> 11 -> 12 -> 13 -> 14 -> 1 -> 3 -> 5 -> 7
```

```
9 -> 10 -> 11 -> 12 -> 13 -> 14 -> 1 -> 3 -> 5 -> 7 -> 9
```

```
11 -> 12 -> 13 -> 14 -> 1 -> 3 -> 5 -> 7 -> 9 -> 11
```

```
13 -> 14 -> 1 -> 3 -> 5 -> 7 -> 9 -> 11 -> 13
```

```
1 -> 3 -> 5 -> 7 -> 9 -> 11 -> 13 -> 1
```

```
5 -> 7 -> 9 -> 11 -> 13 -> 1 -> 5
```

```
9 -> 11 -> 13 -> 1 -> 5 -> 9
```

```
13 -> 1 -> 5 -> 9 -> 13
```

```
5 -> 9 -> 13 -> 5
```

```
13 -> 5 -> 13
```

```
13 -> 13
```

```
PS C:\Users\Ajay kumar\Desktop\SEIT-B\DSA\Lab\9 - Josephus>
```