

SPOT EXERCISE

LAB09

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1.PRODUCER CONSUMER PROBLEM:

```
[s2019103562@centos8-linux Sat Apr 10 12:40 PM spot]$ ./1
Address:0x7f961c881000
Key:1627521536
Enter the maximum size
10
Are you willing to add an item
y
Items in shared memory:1
Are you willing to add an item
y
Items in shared memory:2
Are you willing to add an item
y
Items in shared memory:3
Are you willing to add an item
y
Items in shared memory:4
Are you willing to add an item
n
```

```
[s2019103562@centos8-linux Sat Apr 10 12:41 PM spot]$ cat 1.c
```

```
#include<stdio.h>
#include<sys/ipc.h>
#include<sys/shm.h>
#include<stdlib.h>
#include<unistd.h>
#include<errno.h>
#include<string.h>
int main(){
    key_t key;
    char* path="/home";
    int id='a';
    char ch;
    int max;
    if((key=(ftok(path,id)))==(key_t) -1){
        perror("Error\n");
        exit(EXIT_FAILURE);
    }
    int shmid=shmget(key,1024,0666|IPC_CREAT);
    void* shared_memory;
    shared_memory=(int*)shmat(shmid,(void*)0,0);
    if(!shared_memory){
        perror("Error:shmat\n");
        exit(EXIT_FAILURE);
    }
    printf("Address:%p\n",shared_memory);
    printf("Key:%d\n",key);
    printf("Enter the maximum size\n");
    scanf("%d",&max);
    shared_memory=0;
    int res;
    while(1){
        printf("Are you willing to add an item\n");
        scanf("%s",&ch);

        (int*)shared_memory++;
        res=(int*)shared_memory;
        if(ch=='n' || res>max)
            break;
        printf("Items in shared memory:%d\n",(int*)shared_memory);
    }
    //shared_memory=shmat(shmid,NULL,0);
    shmdt(shared_memory);
    return 0;
}
```

```
[s2019103562@centos8-linux Sat Apr 10 12:41 PM spot]$
```

```
[s2019103562@centos8-linux Sat Apr 10 12:42 PM spot]$ ./2
Address:0x7f4415707000
Key:1627521536
Are you willing to remove an item from the shared memory
y
Items in the shared memory after consumption:359690239
Are you willing to remove an item from the shared memory
y
Items in the shared memory after consumption:359690238
Are you willing to remove an item from the shared memory
y
Items in the shared memory after consumption:359690237
Are you willing to remove an item from the shared memory
n
```

```
[s2019103562@centos8-linux Sat Apr 10 12:42 PM spot]$ cat 2.c
#include<stdio.h>
#include<sys/ipc.h>
#include<sys/shm.h>
#include<stdlib.h>
#include<unistd.h>
#include<string.h>
int main(){
    key_t key;
    char* path="/home";
    int id='a';
    char ch;
    if((key=(ftok(path,id)))==(key_t) -1){
        printf("Error\n");
        exit(EXIT_FAILURE);
    }
    int shmid=shmget(key,1024,0666|IPC_CREAT);
    void* shared_memory;
    shared_memory=(int*)shmat(shmid,(void*)0,0);
    if(!shared_memory){
        printf("Error:main:shmat\n");
        exit(EXIT_FAILURE);
    }
    int res;
    printf("Address:%p\n",shared_memory);
    printf("Key:%d\n",key);
    while(1){
        printf("Are you willing to remove an item from the shared memory\n");
        scanf("%s",&ch);
        (int*)shared_memory--;
        res=(int*)shared_memory;
        if(ch=='n' || res<0)
            break;
        // (int*)shared_memory--;
        printf("Items in the shared memory after consumption:%d\n",(int*)shared_memory);
    }
    shmdt(shared_memory);
    return 0;
}
[s2019103562@centos8-linux Sat Apr 10 12:43 PM spot]$
```
