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Experiment No. 6

Producer/Consumer
Code:

```c
#include<stdio.h>
#include<stdlib.h> int
mutex=1,full=0,empty=3,x=0;
int main(){
   int n; void
   producer(); void
   consumer();
   int wait(int);
   int signal(int);
   printf("\n1.Producer\n2.Consumer\n3.Exit");
   while(1){
      printf("\nEnter your choice:");
      scanf("%d",&n); switch(n){
        case 1: if((mutex==1)&&(empty!=0))
                producer();
                else
                printf("Buffer is full!!");
                      break;
         case 2: if((mutex==1)&&(full!=0))
                consumer(); else
                   printf("Buffer is empty!!");
                   break;
         case 3:
            exit(0);
             break; }
 } return 0;}
int wait(int s){
   return (--s);
   } int
signal(int s){
   return(++s);
   }
void producer(){
   mutex=wait(mutex);
   full=signal(full);
   empty=wait(empty);
   x++;
   printf("\nProducer produces the item %d",x);
   mutex=signal(mutex);
}
void consumer(){
```

```
    mutex=wait(mutex);
    full=wait(full);
    empty=signal(empty); printf("\nConsumer
    consumes item %d",x);
    x--;
    mutex=signal(mutex);
}
```

Output:

```
ospc-12@ospc12-H81M-S:~/Akshit_45$ gcc EXP6.c
ospc-12@ospc12-H81M-S:~/Akshit_45$ ./a.out

1.Producer
2.Consumer
3.Exit
Enter your choice:1

Producer produces the item 1
Enter your choice:1

Producer produces the item 2
Enter your choice:2

Consumer consumes item 2
Enter your choice:2

Consumer consumes item 1
Enter your choice:2
Buffer is empty!!
Enter your choice:3
```