单链表 （18.7.3）

#include <stdio.h>

#include <string.h>

#include <stdlib.h>

typedef struct list\_nod

{

int data;

struct list\_nod \*next;

}list\_sing; //单链表的写法

int **main**()

{

list\_sing \*head =NULL;

head = (list\_sing \*)malloc(sizeof(list\_sing));

if(head == NULL)

{

printf("malloc failed \n");

}

memset(head,0,sizeof(head));

head->data=100;

head->next =NULL;

printf("data = %d\n",head->data);

free(head);

return 0;

}

1.开辟空间

2.不为空指针

3.清空，再使用

4使用

5.free()

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

#define LEN sizeof (list\_init)

typedef struct student

{

int num;

float score;

struct student \*next;

}list\_init;

list\_init stu;

int n;

struct student \***Create**()

{

struct student \*head; //头节点

struct student \*p1 = NULL; //p1保存创建的新节点的地址

struct student \*p2 = NULL; //p2保存原链表最后一个节点的地址

n = 0; //创建前链表的节点总数为0：空链表

p1 = (struct student \*) malloc (LEN); //开辟一个新节点

p2 = p1; //如果节点开辟成功，则p2先把它的指针保存下来以备后用

if(p1==NULL) //节点开辟不成功

{

printf ("\nCann't create it, try it again in a moment!\n");

return NULL;

}

else //节点开辟成功

{

head = NULL; //开始head指向NULL

printf ("Please input %d node -- num,score: ", n + 1);

scanf ("%d %f", &(p1->num), &(p1->score)); //录入数据

}

while(p1->num != 0) //只要学号不为0，就继续录入下一个节点

{

n += 1; //节点总数增加1个

if(n == 1) //如果节点总数是1，则head指向刚创建的节点p1

{

head = p1;

p2->next = NULL; //此时的p2就是p1,也就是p1->next指向NULL。

}

else

{

p2->next = p1; //指向上次下面刚刚开辟的新节点

}

p2 = p1; //把p1的地址给p2保留，然后p1产生新的节点

p1 = (struct student \*) malloc (LEN);

printf ("Please input %d node -- num,score: ", n + 1);

scanf ("%d %f", &(p1->num), &(p1->score));

}

p2->next = NULL; \//此句就是根据单向链表的最后一个节点要指向NULL

free(p1); //p1->num为0的时候跳出了while循环，并且释放p1

p1 = NULL;//特别不要忘记把释放的变量清空置为NULL,否则就变成"野指针"，即地址不确定的指针

return head; //返回创建链表的头指针

}

void **Print**(struct student \*head)

{

struct student \*p;

printf ("\nNow , These %d records are:\n", n);

p = head;

if(head != NULL) //只要不是空链表，就输出链表中所有节点

{

printf("head is %o\n", head); //输出头指针指向的地址

do

{

/\*

输出相应的值：当前节点地址、各字段值、当前节点的下一节点地址。

这样输出便于读者形象看到一个单向链表在计算机中的存储结构，和我们

设计的图示是一模一样的。

\*/

printf ("%o %d %5.1f %o\n", p, p->num, p->score, p->next);

p = p->next; //移到下一个节点

}

while (p != NULL);

}

}

/\*

list\_init \*creat()

{

list\_init \*head;

list\_init \*p1=NULL;

list\_init \*p2=NULL;

p1 = (list\_init \*)malloc(sizeof(LEN));

if(p1 == NULL)

{

printf("sizeof failed \n");

return NULL;

}

head = NULL;

p2 = p1;

printf("node = %d p1->num = %d\n",n+1,p1->num);

while(!p1->num)

{

n =+ 1;

if(n == 1)

{

head =p1;

p2->next = NULL;

}

else

{

p2 -> next =p1;

}

p2 = p1;

p1 = (list\_init \*)malloc(sizeof(LEN));

printf("input %d \n",n+1);

scanf("%d,%f",&(p1->num),&(p1->score));

}

}

list\_init print(list\_init \*head)

{

list\_init \*p;

p = head;

printf ("\nNow , These %d records are:\n", n);

if(head != NULL)

{

printf("head print = %o p = %o \n",head,p);

do

{

printf("p = %o p->num = %d, p->score = %f \n",p,p->num,p->score,p->next);

p= p->next;

}

while(p != NULL);

}

}

\*/

int **main**()

{

list\_init \*head;

head = creat();

print(head);

return 0;

}

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共享内存

#include <stdlib.h>

#include <stdio.h>

#include <string.h>

#include <errno.h>

#include <unistd.h>

#include <sys/stat.h>

#include <sys/types.h>

#include <sys/ipc.h>

#include <sys/shm.h>

#define PERM 0666|IPC\_CREAT //066 可读写，如果没有create

int **main**(int argc, char \*\*argv)

{

int shmid;

char \*f\_add,\*p\_add;

if(argc != 2)

{

printf("plase input add :%s\n",argv[0]);

exit(1);

}

if((shmid = shmget(IPC\_PRIVATE,1024,PERM))== -1) // IPC\_PRIVATE 无名管道亲缘

{

printf("creat error \n");

return -1;

}

printf("shmid = %d \n",shmid);

if(fork())

{

f\_add = shmat(shmid, 0,0);

printf("f\_add= %p \n",f\_add);

memset(f\_add,0,sizeof(f\_add));

memcpy(f\_add,argv[1],1024);

exit(0);

}

else

{

sleep(0);

p\_add =shmat(shmid,0,0);

printf("add = %p \n",p\_add);

}

char cmd[80]={0};

sprintf(cmd,"ipcs | grep %d",shmid);

printf("cmd = %s \n",cmd);

system(cmd);

shmdt(shmid);

shmctl(shmid, IPC\_RMID,0); //删除id

}

注意事项：

| //删除之前要脱离映射unmap

| shmdt(p);

| //删除共享共享内存--不一定立即删除--要看是否还有其他进程链接到该进程

| shmctl(shm\_id,IPC\_RMID,NULL);

int shmdt(const void \*shmaddr);

注意：将共享内存段与当前进程脱离不等于删除共享内存段

**./a.out 结果**

shmid = 14286892

f\_add= 0x7f61bc46a000

add = 0x7f61bc46a000

cmd = ipcs | grep 14286892

0x00000000 14286892 yq 666 1024 1

**callback**

#include <stdio.h>

int **add\_ret**() ;

int **multiply**();

int **add**(int a , int b , int (\*add\_value)()) //

{

return (\*add\_value)(a,b);

}

int **multiplk\_p**(int c,int d,int (\*multip\_date)())

{

return (\*multip\_date)(c,d);

}

int **main**(void)

{

int sum = add(3,4,add\_ret);

int multip = multiplk\_p(6,5,multiply);

printf("sum:%d\n",sum);

printf("mutil:%d\n",multip);

return 0 ;

}

int **add\_ret**(int a , int b)

{

return a+b ;

}

int **multiply** (int c, int d)

{

printf("c = %d ,d =%d \n ",c,d);

return c - d;

}