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OS LAB-11

Question 1:

Contiguous Allocation

Code:

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

void recurse(int files[]){
int flag = 0, startBlock,fileid, len, j, k, ch;
printf("Enter the file id:");
scanf("%d",&fileid);
printf("Enter the starting block and the length of the files: ");
scanf("%d%d", &startBlock, &len);

for (j=startBlock; j<(startBlock+len); j++){
if (files[j] == 0)
flag++;
}
if(len == flag){

for (int k=startBlock; k<(startBlock+len); k++){

if (files[k] == 0){
files[k] = fileid;
printf("%d\t%d\n", k, files[k]);
}
}

if (k != (startBlock+len-1))
printf("The file is allocated to the disk\n");

}
else
printf("The file is not allocated to the disk\n");
printf("Do you want to enter more files?\n");
printf("Press 1 for YES, 0 for NO: ");
scanf("%d", &ch);
if (ch == 1)
recurse(files);
else
exit(0);
return;
}

```

```
40
41 int main(){
42 int files[50];
43
44 for(int i=0;i<50;i++)
45 files[i]=0;
46 printf("Files Allocated are :\n");
47 recurse(files);
48 return 0;
49 }
50
```

Output:

```
alaric@alaric-virtual-machine:~/Desktop$ ./a.out
Files Allocated are :
Enter the file id:8
Enter the starting block and the length of the files: 2 4
2       8
3       8
4       8
5       8
The file is allocated to the disk
Do you want to enter more files?
Press 1 for YES, 0 for NO: 0
```

Question 2:

Linked Allocation

Code:

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

void main()
{
int f[50], p,i, st, len, j, c, k, a;

for(i=0;i<50;i++)
f[i]=0;
printf("Enter how many blocks already allocated: ");
scanf("%d",&p);
printf("Enter blocks already allocated: ");

for(i=0;i<p;i++)
{
scanf("%d",&a);
f[a]=1;
}
x: printf("Enter index starting block and length: ");
scanf("%d%d", &st,&len);
k=len;
if(f[st]==0)
{
for(j=st;j<(st+k);j++)
{
if(f[j]==0)
{
f[j]=1;
printf("%d-------->%d\n",j,f[j]);
}
else
{

printf("%d Block is already allocated \n",j);
k++;
}
}
}
else
printf("%d starting block is already allocated \n",st);
printf("Do you want to enter more file(Yes - 1/No - 0)");

scanf("%d", &c);
if(c==1)
goto x;
else
exit(0);
}

```

Output:

```
alaric@alaric-virtual-machine:~/Desktop$ ./a.out
Enter how many blocks already allocated: 2
Enter blocks already allocated: 3 5
Enter index starting block and length: 1 5
1-------->1
2-------->1
3 Block is already allocated
4-------->1
5 Block is already allocated
6-------->1
7-------->1
Do you want to enter more file(Yes - 1/No - 0)0
```

Question 3:

Indexed Allocation

Code:

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

void main()
{
int f[50], index[50],i, n, st, len, j, c, k, ind,count=0;

for(i=0;i<50;i++)
f[i]=0;
x:printf("Enter the index block: ");
scanf("%d",&ind);
if(f[ind]!=1)
{
printf("Enter no of blocks needed and no of files for the index %d on the disk : \n", ind);
scanf("%d",&n);
}
else
{
printf("%d index is already allocated \n",ind);
goto x;
}
y: count=0;

for(i=0;i<n;i++)
{
scanf("%d", &index[i]);
if(f[index[i]]==0)
count++;
}
if(count==n)
{

for(j=0;j<n;j++)
f[index[j]]=1;

printf("Allocated\n");
printf("File Indexed\n");

```

```
39 for(k=0;k<n;k++)
40 printf("%d--->%d : %d\n",ind,index[k],f[index[k]]);
41 }
42 else
43 {
44 printf("File in the index is already allocated \n");
45 printf("Enter another file indexed");
46 goto y;
47 }
48 printf("Do you want to enter more file(Yes - 1/No - 0)");
49 scanf("%d", &c);
50 if(c==1)
51 goto x;
52 else
53 exit(0);
54 }
55
```

Output:

```
alaric@alaric-virtual-machine:~/Desktop$ ./a.out
Enter the index block: 3
Enter no of blocks needed and no of files for the index 3 on the disk :
6
5 6 7 8 9 1
Allocated
File Indexed
3--->5 : 1
3--->6 : 1
3--->7 : 1
3--->8 : 1
3--->9 : 1
3--->1 : 1
Do you want to enter more file(Yes - 1/No - 0)0
```