Program-8

Write a C program to simulate the following file allocation strategies:

(a) Sequential

(b) Indexed

(c) Linked

Code:

```
#include
<stdio.h>
#define
MAX 20
void
sequential(
) {
   int n,
start, len;
   printf("\
nSequentia
l
Allocation\
nFiles? ");
scanf("%d
", &n);
   printf("F
ile\tStart\t
Length\n")
;
   for(int
i=1;i<=n;i
++) {
      printf
("File %d:
Start,
Length? ",
i);
      scanf(
"%d%d",
&start,
&len);
      printf
("%d\t%d\t
```

```
%d\n", i,
start, len);
    }
}

void
indexed()
{
    int n,
idx, b,
block[MA
X];
    printf("\
nIndexed
Allocation\
nFiles? ");
scanf("%d
", &n);
    for(int
i=1;i<=n;i
++) {
        printf
("File %d:
Index
Block,
Block
Count? ",
i);
        scanf(
"%d%d",
&idx, &b);
        printf
("Blocks?
");
        for(in
t
j=0;j<b;j+
+)
scanf("%d
",
&block[j])
;
        printf
("File %d:
Index %d:
", i, idx);
```

```
        for(in
t
j=0;j<b;j+
+)
printf("%d
",
block[j]);
        printf
("\n");
    }
}

void
linked() {
    int n, b,
block[MA
X];
    printf("\
nLinked
Allocation\
nFiles? ");
scanf("%d
", &n);
    for(int
i=1;i<=n;i
++) {
        printf
("File %d:
Block
Count? ",
i);
        scanf(
"%d",
&b);
        printf
("Blocks?
");
        for(in
t
j=0;j<b;j+
+)
scanf("%d
",
&block[j])
;
```

```
        printf
("File %d:
", i);
        for(in
t
j=0;j<b;j+
+)
printf("%d
%s",
block[j],
(j<b-1)?"-
>":"");
        printf
("\n");
    }
}

int main()
{
    int c;
    do {
        printf
("\n1.Sequ
ential
2.Indexed
3.Linked
4.Exit\nCh
oice? ");
        scanf(
"%d", &c);
        if(c==
1)
sequential(
);
        else
if(c==2)
indexed();
        else
if(c==3)
linked();
    }
while(c!=4
);
    return 0;
}
```

Output:

```
1.Sequential 2.Indexed 3.Linked 4.Exit
Choice? 1

Sequential Allocation
Files? 2
File    Start   Length
File 1: Start, Length? 5 3
1       5       3
File 2: Start, Length? 10 4
2       10      4

1.Sequential 2.Indexed 3.Linked 4.Exit
Choice? 2

Indexed Allocation
Files? 2
File 1: Index Block, Block Count? 9 3
Blocks? 12 13 14
File 1: Index 9: 12 13 14
File 2: Index Block, Block Count? 10 2
Blocks? 20 21
File 2: Index 10: 20 21

1.Sequential 2.Indexed 3.Linked 4.Exit
Choice? 3

Linked Allocation
Files? 2
File 1: Block Count? 4
Blocks? 5 8 11 13
File 1: 5->8->11->13
File 2: Block Count? 3
Blocks? 20 22 25
File 2: 20->22->25

1.Sequential 2.Indexed 3.Linked 4.Exit
Choice? 4

Process returned 0 (0x0)   execution time : 222.914 s
Press any key to continue.
```