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REG NO: *19BCE7079*

COURSE : *Operating System*

DATE : *13-11-2021*

CODE:

FIL21.C

```
#include<stdio.h>
int main()
{
    int no_of_frames, no_of_pages, frames[10], pages[30], temp[10],
flag1, flag2, flag3, i, j, k, pos, max, faults = 0;
    printf("Enter number of frames: ");
    scanf("%d", &no_of_frames);

    printf("Enter number of pages: ");
    scanf("%d", &no_of_pages);

    printf("Enter page reference string: ");

    for(i = 0; i < no_of_pages; ++i){
        scanf("%d", &pages[i]);
    }

    for(i = 0; i < no_of_frames; ++i){
        frames[i] = -1;
    }

    for(i = 0; i < no_of_pages; ++i){
        flag1 = flag2 = 0;

        for(j = 0; j < no_of_frames; ++j){
            if(frames[j] == pages[i]){
                    flag1 = flag2 = 1;
                    break;
                }
        }

        if(flag1 == 0){
            for(j = 0; j < no_of_frames; ++j){
                if(frames[j] == -1){
                    faults++;
```

```
                    frames[j] = pages[i];
                    flag2 = 1;
                    break;
                }
            }
        }

        if(flag2 == 0){
         flag3 =0;

            for(j = 0; j < no_of_frames; ++j){
             temp[j] = -1;

             for(k = i + 1; k < no_of_pages; ++k){
             if(frames[j] == pages[k]){
             temp[j] = k;
             break;
             }
             }
            }

            for(j = 0; j < no_of_frames; ++j){
             if(temp[j] == -1){
             pos = j;
             flag3 = 1;
             break;
             }
            }

            if(flag3 ==0){
             max = temp[0];
             pos = 0;

             for(j = 1; j < no_of_frames; ++j){
             if(temp[j] > max){
             max = temp[j];
             pos = j;
             }
             }
            }
frames[pos] = pages[i];
faults++;
        }

        printf("\n");

        for(j = 0; j < no_of_frames; ++j){
            printf("%d\t", frames[j]);
        }
    }

    printf("\n\nTotal Page Faults = %d", faults);

    return 0;
}
```

FIL20.C

```
#include<stdio.h>
int main()
{
int i,j,n,a[50],frame[10],no,k,avail,count=0;
            printf("\n ENTER THE NUMBER OF PAGES:\n");
scanf("%d",&n);
            printf("\n ENTER THE PAGE NUMBER :\n");
            for(i=1;i<=n;i++)
            scanf("%d",&a[i]);
            printf("\n ENTER THE NUMBER OF FRAMES :");
            scanf("%d",&no);
for(i=0;i<no;i++)
            frame[i]= -1;
                        j=0;
                        printf("\tref string\t page frames\n");
for(i=1;i<=n;i++)
                        {
                                    printf("%d\t\t",a[i]);
                                    avail=0;
                                    for(k=0;k<no;k++)
if(frame[k]==a[i])
                                                avail=1;
                                    if (avail==0)
                                    {
                                                frame[j]=a[i];
                                                j=(j+1)%no;
                                                count++;
                                                for(k=0;k<no;k++)

printf("%d\t",frame[k]);
}
                                    printf("\n");
}
                        printf("Page Fault Is %d",count);
                        return 0;
}
```

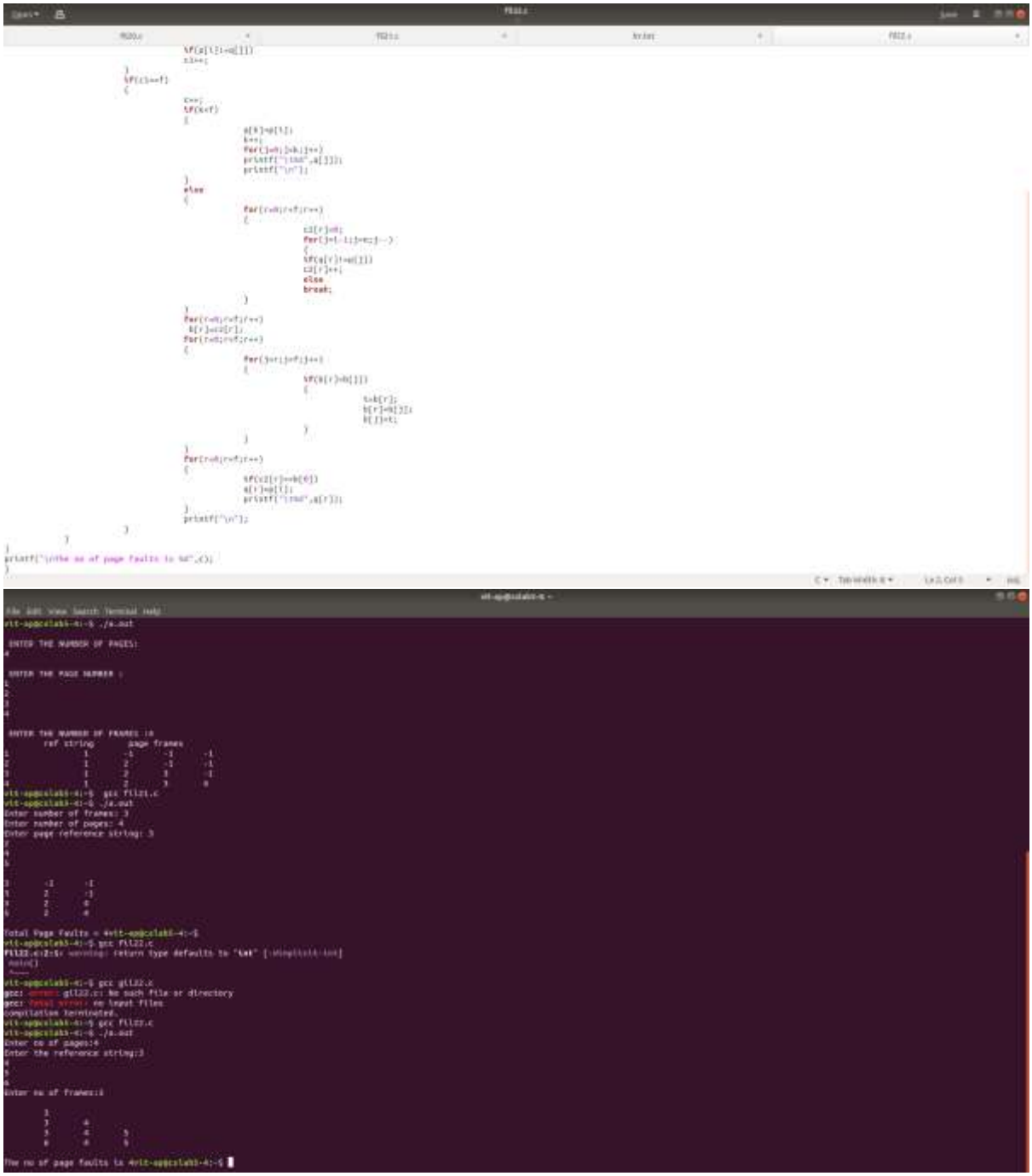
FILL22.C

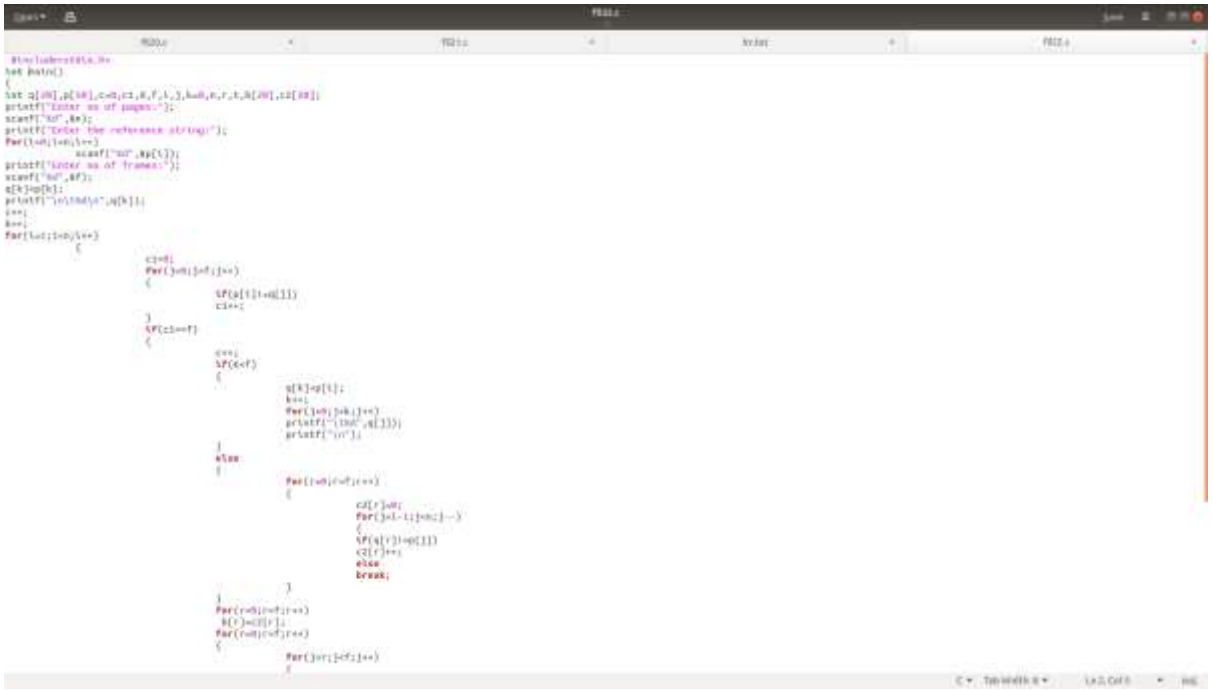
```
#include<stdio.h>
int main()
{
int q[20],p[50],c=0,c1,d,f,i,j,k=0,n,r,t,b[20],c2[20];
printf("Enter no of pages:");
scanf("%d",&n);
printf("Enter the reference string:");
for(i=0;i<n;i++)
            scanf("%d",&p[i]);
printf("Enter no of frames:");
```

```
scanf("%d",&f);
q[k]=p[k];
printf("\n\t%d\n",q[k]);
c++;
k++;
for(i=1;i<n;i++)
            {
                        c1=0;
                        for(j=0;j<f;j++)
                        {
                                    if(p[i]!=q[j])
                                    c1++;
                        }
                        if(c1==f)
                        {
                                    c++;
                                    if(k<f)
                                    {
                                                q[k]=p[i];
                                                k++;
                                                for(j=0;j<k;j++)
                                                printf("\t%d",q[j]);
                                                printf("\n");
                                    }
                                    else
                                    {
                                                for(r=0;r<f;r++)
                                                {
                                                            c2[r]=0;
                                                            for(j=i-
1;j<n;j--)
                                                            {

if(q[r]!=p[j])
                                                            c2[r]++;
                                                            else
                                                            break;
                                                }
                                    }
                                    for(r=0;r<f;r++)
                                     b[r]=c2[r];
                                    for(r=0;r<f;r++)
                                    {
                                                for(j=r;j<f;j++)
                                                {

if(b[r]<b[j])
                                                            {

t=b[r];

b[r]=b[j];

b[j]=t;
                                                            }
                                                }
```

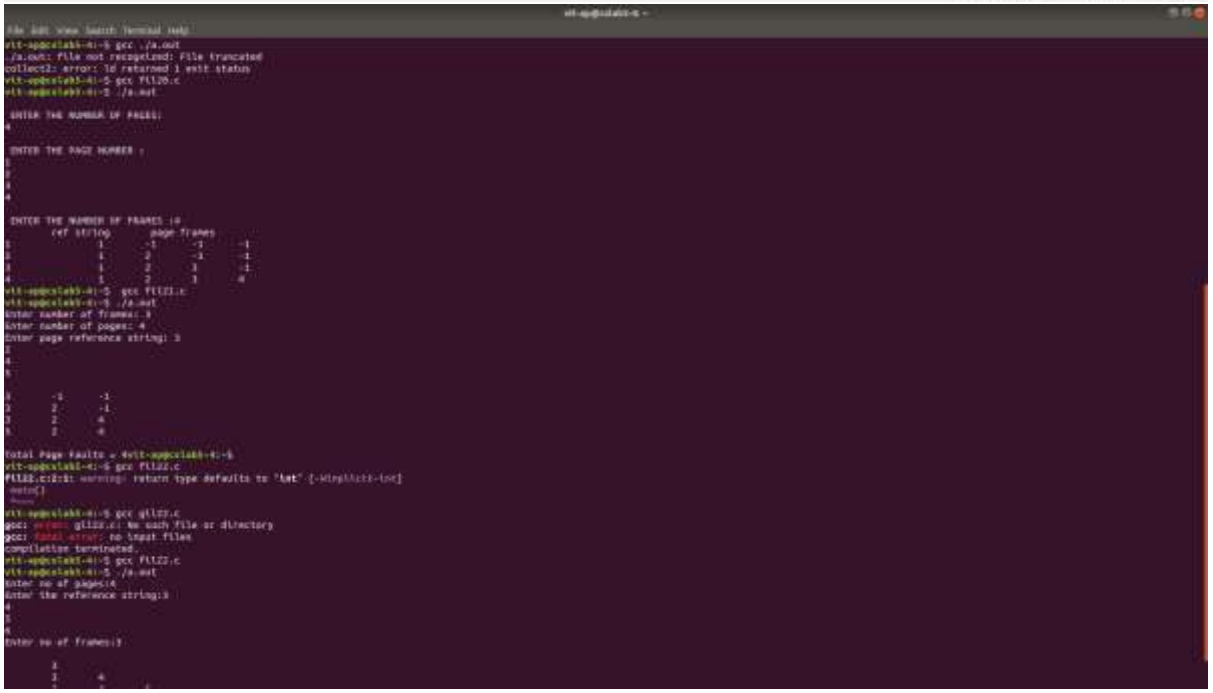
```
                                        }
                                        for(r=0;r<f;r++)
                                        {
                                                    if(c2[r]==b[0])
                                                    q[r]=p[i];
                                                    printf("\t%d",q[r]);
                                        }
                                        printf("\n");
                              }
                    }
}
printf("\nThe no of page faults is %d",c);
}
```

SCREENSHOTS:





```
#include<stdio.h>
int main()
{
int q[20],p[50],c=0,c1,d,f,i,j,k=0,n,r,t,b[20],c2[20];
printf("Enter no of pages:");
scanf("%d",&n);
printf("Enter the reference string:");
for(i=0;i<n;i++)
        scanf("%d",&p[i]);
printf("Enter no of frames:");
scanf("%d",&f);
q[k]=p[k];
printf("\n\t%d\n",q[k]);
c++;
k++;
for(i=1;i<n;i++)
        {
                c1=0;
                for(j=0;j<f;j++)
                {
                        if(p[i]!=q[j])
                        c1++;
                }
                if(c1==f)
                {
                        c++;
                        if(k<f)
                        {
                                q[k]=p[i];
                                k++;
                                for(j=0;j<k;j++)
                                printf("\t%d",q[j]);
                                printf("\n");
                        }
                        else
                        {
                                for(r=0;r<f;r++)
                                {
                                        c2[r]=0;
                                        for(j=i-1;j<n;j--)
                                        {
                                        if(q[r]!=p[j])
                                        c2[r]++;
                                        else
                                        break;
                                        }
                                }
                                for(r=0;r<f;r++)
                                 b[r]=c2[r];
                                for(r=0;r<f;r++)
                                {
                                        for(j=r;j<f;j++)
                                        {
```

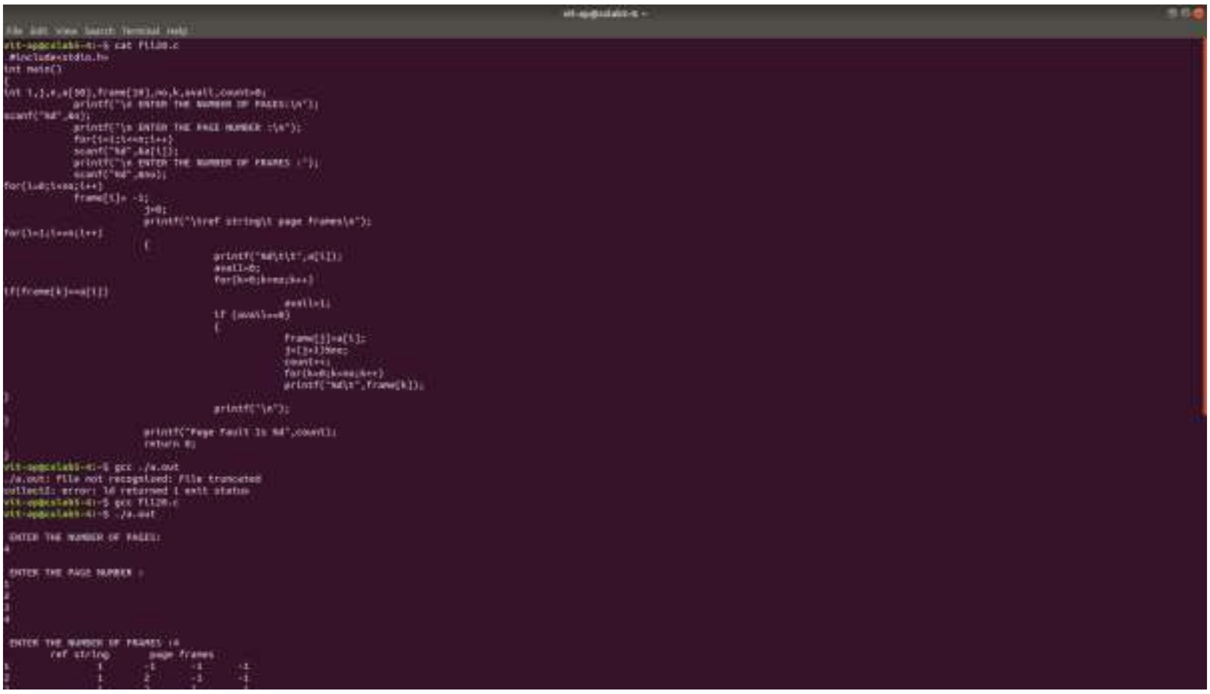


```
vtt-ag@cslab5-4: ~
File  Edit  View  Search  Terminal  Help
vtt-ag@cslab5-4:~$ gcc ./a.out
./a.out: file not recognized: File truncated
collect2: error: ld returned 1 exit status
vtt-ag@cslab5-4:~$ gcc FIL20.c
vtt-ag@cslab5-4:~$ ./a.out

 ENTER THE NUMBER OF PAGES:
4

 ENTER THE PAGE NUMBER :
1
2
3
4

 ENTER THE NUMBER OF FRAMES :3
        ref string      page frames
1               1       -1      -1      -1
2               1       2       -1      -1
3               1       2       3       -1
4               1       2       3       4
vtt-ag@cslab5-4:~$  gcc FIL21.c
vtt-ag@cslab5-4:~$ ./a.out
Enter number of frames: 3
Enter number of pages: 4
Enter page reference string: 1
2
3
4

1       -1      -1
2       2       -1
3       2       4
4       2       4

Total Page Faults = 4vtt-ag@cslab5-4:~$
vtt-ag@cslab5-4:~$ gcc FIL22.c
FIL22.c:2:1: warning: return type defaults to 'int' [-Wimplicit-int]
 main()
 ^~~~
vtt-ag@cslab5-4:~$ gcc gil22.c
gcc: error: gil22.c: No such file or directory
gcc: fatal error: no input files
compilation terminated.
vtt-ag@cslab5-4:~$ gcc FIL22.c
vtt-ag@cslab5-4:~$ ./a.out
Enter no of pages:4
Enter the reference string:1
2
3
4
Enter no of frames:3

        1
        2       4
        3       -1      -1
```

```c
#include<stdio.h>
int main()
{
    int no_of_frames, no_of_pages, frames[10], pages[30], temp[10], flag1, flag2, flag3, i, j, k, pos, max, faults = 0;
    printf("Enter number of frames: ");
    scanf("%d", &no_of_frames);

    printf("Enter number of pages: ");
    scanf("%d", &no_of_pages);

    printf("Enter page reference string: ");

    for(i = 0; i < no_of_pages; ++i){
        scanf("%d", &pages[i]);
    }

    for(i = 0; i < no_of_frames; ++i){
        frames[i] = -1;
    }

    for(i = 0; i < no_of_pages; ++i){
        flag1 = flag2 = 0;

        for(j = 0; j < no_of_frames; ++j){
            if(frames[j] == pages[i]){
                    flag1 = flag2 = 1;
                    break;
                }
        }

        if(flag1 == 0){
            for(j = 0; j < no_of_frames; ++j){
                if(frames[j] == -1){
                    faults++;
                    frames[j] = pages[i];
                    flag2 = 1;
                    break;
                }
            }
        }

        if(flag2 == 0){
         flag3 =0;

            for(j = 0; j < no_of_frames; ++j){
             temp[j] = -1;

             for(k = i + 1; k < no_of_pages; ++k){
             if(frames[j] == pages[k]){
             temp[j] = k;
             break;
             }
             }
            }
```

```c
                    break;
                }
            }
        }

        if(flag2 == 0){
         flag3 =0;

            for(j = 0; j < no_of_frames; ++j){
             temp[j] = -1;

             for(k = i + 1; k < no_of_pages; ++k){
             if(frames[j] == pages[k]){
             temp[j] = k;
             break;
             }
             }
            }

            for(j = 0; j < no_of_frames; ++j){
             if(temp[j] == -1){
             pos = j;
             flag3 = 1;
             break;
             }
            }

            if(flag3 ==0){
             max = temp[0];
             pos = 0;

             for(j = 1; j < no_of_frames; ++j){
             if(temp[j] > max){
             max = temp[j];
             pos = j;
             }
             }
            }
frames[pos] = pages[i];
faults++;
        }

        printf("\n");

        for(j = 0; j < no_of_frames; ++j){
            printf("%d\t", frames[j]);
        }
    }

    printf("\n\nTotal Page Faults = %d", faults);

    return 0;
}
```

```
#include<stdio.h>
int main()
{
int q[20],p[50],c=0,c1,d,f,i,j,ku=0,n,r,t,b[20],c2[20];
printf("Enter no of pages:");
scanf("%d",&n);
printf("Enter the reference string:");
for(i=0;i<n;i++)
        scanf("%d",&p[i]);
printf("Enter no of frames:");
scanf("%d",&f);
q[k]=p[k];
printf("\n\t%d\n",q[k]);
c++;
k++;
for(i=1;i<n;i++)
        {
                c1=0;
                for(j=0;j<f;j++)
                {
                        if(p[i]!=q[j])
                        c1++;
                }
                if(c1==f)
                {
                        c++;
                        if(k<f)
                        {
                                q[k]=p[i];
                                k++;
                                for(j=0;j<k;j++)
                                printf("\t%d",q[j]);
                                printf("\n");
                        }
                        else
                        {
                                for(r=0;r<f;r++)
                                {
                                        c2[r]=0;
                                        for(j=i-1;j<n;j--)
                                        {
                                        if(q[r]!=p[j])
                                        c2[r]++;
                                        else
                                        break;
                                        }
                                }
                                for(r=0;r<f;r++)
                                 b[r]=c2[r];
                                for(r=0;r<f;r++)
                                {
                                        for(j=r;j<f;j++)
                                        {
                                                if(b[r]<b[j])
                                                {
                                                        t=b[r];
                                                        b[r]=b[j];
                                                        b[j]=t;
                                                }
                                        }
                                }
                                for(r=0;r<f;r++)
                                {
                                        if(c2[r]==b[0])
                                        q[r]=p[i];
                                        printf("\t%d",q[r]);
                                }
                                printf("\n");
                        }
                }
        }
printf("\n\tNo of page faults is %d",c);
}
```



```
vit-ap@cslab5-4:~$ cat fifo.c
#include<stdio.h>
int main()
{
int i,j,n,a[50],frame[10],no,k,avail,count=0;
            printf("\n ENTER THE NUMBER OF PAGES:\n");
scanf("%d",&n);
            printf("\n ENTER THE PAGE NUMBER :\n");
            for(i=1;i<=n;i++)
            scanf("%d",&a[i]);
            printf("\n ENTER THE NUMBER OF FRAMES :");
            scanf("%d",&no);
for(i=0;i<no;i++)
            frame[i]= -1;
                        j=0;
                        printf("\tref string\t page frames\n");
for(i=1;i<=n;i++)
                        {
                                    printf("%d\t\t",a[i]);
                                    avail=0;
                                    for(k=0;k<no;k++)
if(frame[k]==a[i])
                                                avail=1;
                                    if (avail==0)
                                    {
                                                frame[j]=a[i];
                                                j=(j+1)%no;
                                                count++;
                                                for(k=0;k<no;k++)
                                                printf("%d\t",frame[k]);
}
                                    printf("\n");
}
                        printf("Page Fault Is %d",count);
                        return 0;
}
vit-ap@cslab5-4:~$ gcc ./a.out
./a.out: file not recognized: File truncated
collect2: error: ld returned 1 exit status
vit-ap@cslab5-4:~$ gcc fifo.c
vit-ap@cslab5-4:~$ ./a.out

 ENTER THE NUMBER OF PAGES:
4

 ENTER THE PAGE NUMBER :
1
2
3
4

 ENTER THE NUMBER OF FRAMES :4
        ref string       page frames
1               1       -1      -1      -1
2               1       2       -1      -1
```