2. Write a C program to illustrate the FIFO method of page replacement and determine the number of page faults for the following test case:

No of page frames: 3; Page reference sequence: 4, 1, 2, 4, 3, 2, 1 and 5.

**INPUT**

```
include <stdio.h>

int main()

{

   int incomingStream[] = {4, 1, 2, 4, 3,2,1,5};

   int pageFaults = 0;

   int frames = 3;

   int m, n, s, pages;

   pages = sizeof(incomingStream)/sizeof(incomingStream[0]);

   printf("Incoming \t Frame 1 \t Frame 2 \t Frame 3");

   int temp[frames];

   for(m = 0; m < frames; m++)

   {
```

```
    temp[m] = -1;

}

for(m = 0; m < pages; m++)

{

    s = 0;

    for(n = 0; n < frames; n++)

    {

        if(incomingStream[m] == temp[n])

        {

            s++;

            pageFaults--;

        }

    }

    pageFaults++;
```

```
if((pageFaults <= frames) && (s == 0))

{

   temp[m] = incomingStream[m];

}

else if(s == 0)

{

   temp[(pageFaults - 1) % frames] = incomingStream[m];

}




printf("\n");

printf("%d\t\t\t",incomingStream[m]);

for(n = 0; n < frames; n++)

{

   if(temp[n] != -1)
```

```
            printf(" %d\t\t\t", temp[n]);

        else

            printf(" - \t\t\t");

    }

  }

  printf("\nTotal Page Faults:\t%d\n", pageFaults);

  return 0;

}
```

```
Output

/tmp/dv6TyWMGms.o
Incoming     Frame 1     Frame 2     Frame 3
4            4           -           -
1            4           1           -
2            4           1           2
4            4           1           2
3            3           1           2
2            3           1           2
1            3           1           2
5            3           5           2
Total Page Faults:  5
```