

OPERATING SYSTEMS

LAB TASK – 11

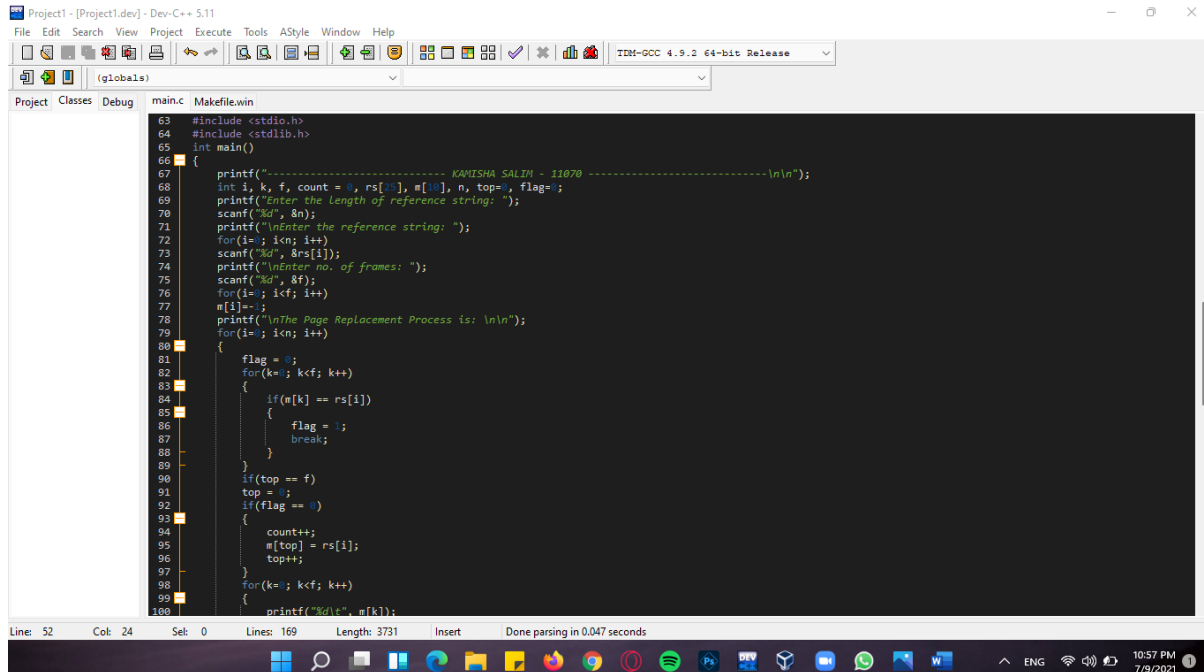
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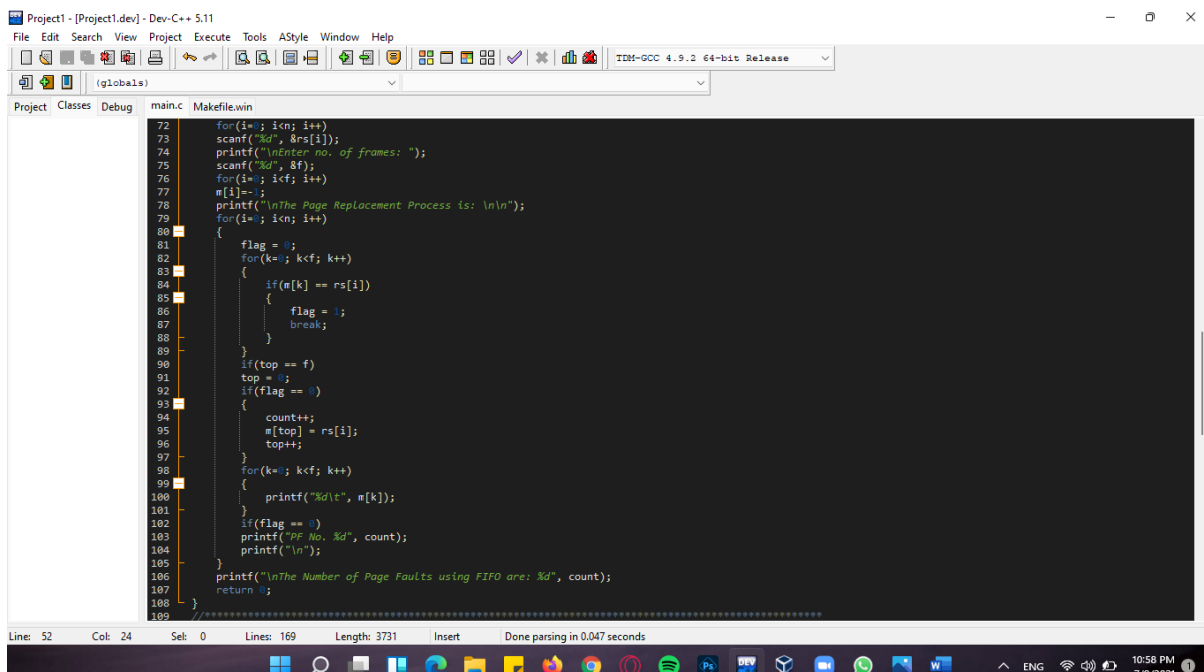
QUESTION – 1

CODE:

USING FIRST IN FIRST OUT (FIFO)



```
63 #include <stdio.h>
64 #include <stdlib.h>
65 int main()
66 {
67     printf("----- KAMISHA SALIM - 11070 ----- \n\n");
68     int i, k, f, count = 0, rs[10], m[10], n, top=0, flag=0;
69     printf("Enter the length of reference string: ");
70     scanf("%d", &n);
71     printf("\nEnter the reference string: ");
72     for(i=0; i<n; i++)
73     {
74         scanf("%d", &rs[i]);
75     }
76     printf("\nEnter no. of frames: ");
77     scanf("%d", &f);
78     for(i=0; i<f; i++)
79     {
80         m[i]=-1;
81     }
82     printf("\nThe Page Replacement Process is: \n\n");
83     for(i=0; i<n; i++)
84     {
85         flag = 0;
86         for(k=0; k<f; k++)
87         {
88             if(m[k] == rs[i])
89             {
90                 flag = 1;
91                 break;
92             }
93         }
94         if(flag == 0)
95         {
96             count++;
97             m[top] = rs[i];
98             top++;
99         }
100     }
101     printf("\n\n");
102     for(k=0; k<f; k++)
103     {
104         printf("%d\t", m[k]);
105     }
106     printf("\n\n");
107 }
```



```
72     for(i=0; i<n; i++)
73     {
74         scanf("%d", &rs[i]);
75     }
76     printf("\nEnter no. of frames: ");
77     scanf("%d", &f);
78     for(i=0; i<f; i++)
79     {
80         m[i]=-1;
81     }
82     printf("\nThe Page Replacement Process is: \n\n");
83     for(i=0; i<n; i++)
84     {
85         flag = 0;
86         for(k=0; k<f; k++)
87         {
88             if(m[k] == rs[i])
89             {
90                 flag = 1;
91                 break;
92             }
93         }
94         if(flag == 0)
95         {
96             count++;
97             m[top] = rs[i];
98             top++;
99         }
100     }
101     printf("\n\n");
102     for(k=0; k<f; k++)
103     {
104         printf("%d\t", m[k]);
105     }
106     printf("\n\n");
107     if(flag == 0)
108     {
109         printf("PF No. %d", count);
110     }
111     printf("\n\n");
112     printf("\nThe Number of Page Faults using FIFO are: %d", count);
113     return 0;
114 }
```

OUTPUT:

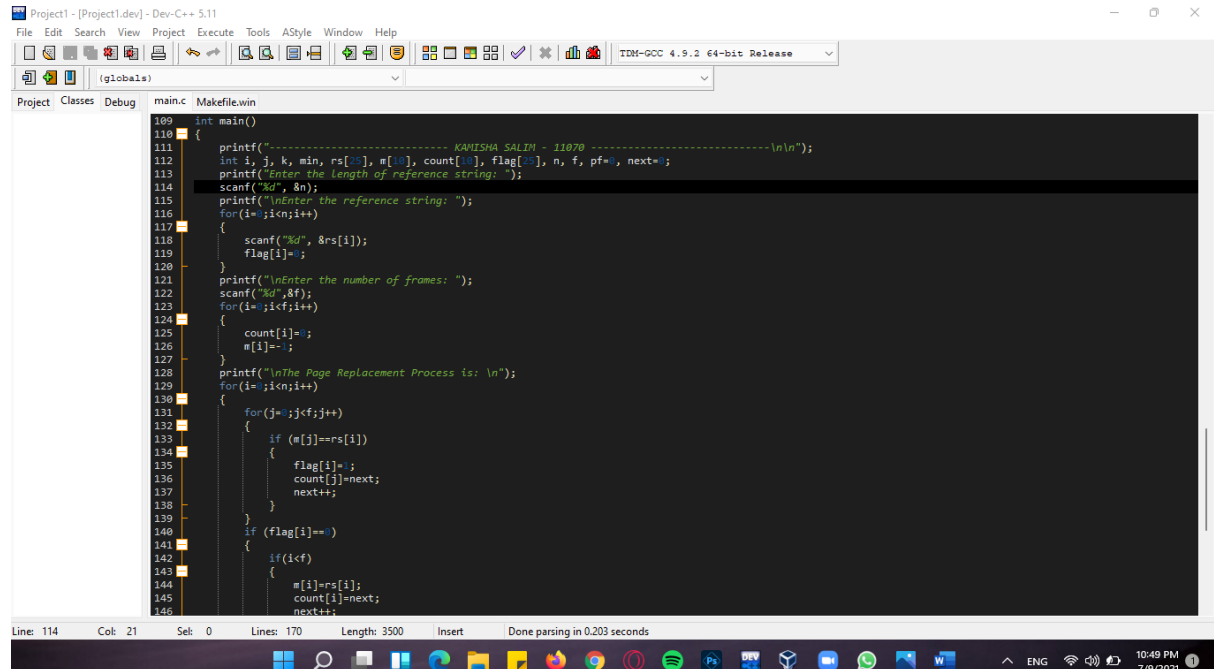
```
C:\Users\com\Documents\Project1.exe
----- KAMISHA SALIM - 11070 -----
Enter the length of reference string: 20
Enter the reference string: 30 2 4 15 22 18 4 6 6 4 6 2 15 2 99 48 17 83 15 16
Enter no. of frames: 3
The Page Replacement Process is:
30    -1    -1    PF No. 1
30    2     -1    PF No. 2
30    2     4     PF No. 3
15    2     4     PF No. 4
15    22    4     PF No. 5
15    22    18    PF No. 6
4     22    18    PF No. 7
4     6     18    PF No. 8
4     6     18
4     6     18
4     6     18
4     6     2     PF No. 9
15    6     2     PF No. 10
15    6     2
15    99    2     PF No. 11
15    99    48    PF No. 12
17    99    48    PF No. 13
17    83    48    PF No. 14
17    83    15    PF No. 15
16    83    15    PF No. 16

The Number of Page Faults using FIFO are: 16
-----
Process exited after 28.17 seconds with return value 0
Press any key to continue . . .
```

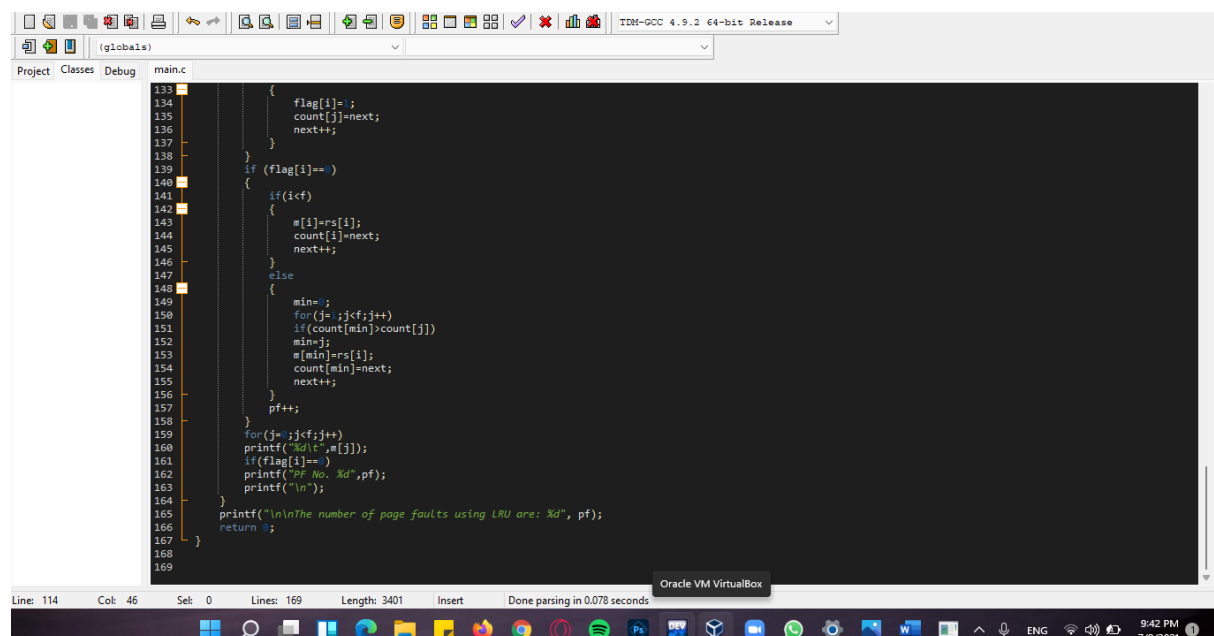
QUESTION – 2

CODE:

USING LEAST RECENTLY USED (LRU)



```
110 int main()
111 {
112     printf("----- KANISHA SALTIN - 11070 ----- \n\n");
113     int i, j, k, min, rs[25], m[10], count[10], flag[25], n, f, pf=0, next=0;
114     printf("Enter the length of reference string: ");
115     scanf("%d", &n);
116     printf("\nEnter the reference string: ");
117     for(i=0; i<n; i++)
118     {
119         scanf("%d", &rs[i]);
120         flag[i]=0;
121     }
122     printf("\nEnter the number of frames: ");
123     scanf("%d", &f);
124     for(i=0; i<f; i++)
125     {
126         count[i]=0;
127         m[i]=-1;
128     }
129     printf("\nThe Page Replacement Process is: \n");
130     for(i=0; i<n; i++)
131     {
132         for(j=0; j<f; j++)
133         {
134             if (m[j]==rs[i])
135             {
136                 flag[i]=0;
137                 count[j]=next;
138                 next++;
139             }
140             if (flag[i]==1)
141             {
142                 if(i<f)
143                 {
144                     m[i]=rs[i];
145                     count[i]=next;
146                     next++;
147                 }
148             }
149         }
150     }
151 }
```



```
152         min=0;
153         for(j=0; j<f; j++)
154         {
155             if(count[min]>count[j])
156             {
157                 min=j;
158             }
159             m[min]=rs[i];
160             count[min]=next;
161             next++;
162         }
163         pf++;
164     }
165     for(j=0; j<f; j++)
166     {
167         printf("%d\t", m[j]);
168         if(flag[j]==1)
169         {
170             printf("PF No. %d", pf);
171             printf("\n");
172         }
173     }
174     printf("\n\nThe number of page faults using LRU are: %d", pf);
175     return 0;
176 }
```

OUTPUT:

```
C:\Users\ucm\Documents\Project1.exe
----- KAMISHA SALIM - 11070 -----
Enter the length of reference string: 20
Enter the reference string: 2 1 6 3 6 4 90 5 13 22 58 7 2 1 3 4 4 7 19 2
Enter the number of frames: 3

The Page Replacement Process is:
2      -1      -1      PF No. 1
2      1      -1      PF No. 2
2      1      6      PF No. 3
3      1      6      PF No. 4
3      1      6
3      4      6      PF No. 5
90     4      6      PF No. 6
90     4      5      PF No. 7
90     13     5      PF No. 8
22     13     5      PF No. 9
22     13     58     PF No. 10
22     7      58     PF No. 11
2      7      58     PF No. 12
2      7      1      PF No. 13
2      3      1      PF No. 14
4      3      1      PF No. 15
4      3      1
4      3      7      PF No. 16
4      19     7      PF No. 17
2      19     7      PF No. 18

The number of Page Faults using LRU are: 18
Process exited after 38.93 seconds with return value 0
Press any key to continue . . .
```