Sem04_1.c

```c
// 1 - ээс 100 хүртэлх анхны тоонуудыг 100 ширхэг thread ашиглан дэлгэцэнд хэвлэ.
#include <windows.h>
#include <stdio.h>
DWORD WINAPI PrintPrimeNumbers(LPVOID Param)
{
    DWORD Upper = *(DWORD*)Param;
    for(DWORD i = 1; i <= Upper; i++)
    {
        DWORD div = 0;
        if(i == 1) continue;
        else if(i == 2) printf("%d ", i);
        else
        {
            for(DWORD j = 2; j <= i/2; j++)
            {
                if(i%j == 0)
                {
                    div++;
                }
            }

            if(div == 0)
            {
                printf("%d ", i);
            }
        }
    }
```

Sem04_1.c

```
28      return 0;
29  }
30
31  int main()
32  {
33      DWORD ThreadId;
34      HANDLE ThreadHandle;
35      int Param;
36      Param = 100;
37
38      ThreadHandle = CreateThread(
39          NULL,
40          0,
41          PrintPrimeNumbers,
42          &Param,
43          0,
44          &ThreadId);
45
46      WaitForSingleObject(ThreadHandle, INFINITE);
47
48      CloseHandle(ThreadHandle);
49  }
50
```

```
C:\Users\Bagaa\OneDrive\Documents\2021-2022-autumn-semister\TOS\Sem04\Sem04_1.exe
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97
Process returned 0 (0x0)   execution time : 0.235 s
Press any key to continue.
```

Sem04_2.c

```c
// 2 матрицийн үржвэр матрицийг бодох. Интэхлээ шинэ матрицийн элементийн
//тоо болгоноор thread үүсгэж бодно.
#include <windows.h>
#include <stdio.h>

DWORD Sum = 0;
DWORD first[10][10], second[10][10], multiply[10][10];

DWORD WINAPI MultiElements(LPVOID Param)
{
    Sum = 0;
    DWORD row = *(DWORD*)(Param);
    DWORD i = *(DWORD*)(Param + 4);
    DWORD j = *(DWORD*)(Param + 8);
    for (DWORD k = 0; k < row; k++){
        Sum += first[i][k]*second[k][j];
    }
    return 0;
}
int main()
{
    int row1, col1, row2, col2, i, j, k, sum = 0;
    printf("Enter number of rows and columns of first matrix /row col/: \n");
```

Sem04_2.c

```
24      scanf("%d%d", &row1, &col1);
25      printf("Enter elements of first matrix: \n");
26      for (i = 0; i < row1; i++)
27          for (j = 0; j < col1; j++)
28              scanf("%d", &first[i][j]);
29      printf("Enter number of rows and columns of second matrix /row col/: \n");
30      scanf("%d%d", &row2, &col2);
31      while (col1 != row2)
32      {
33          printf("The multiplication is not possible.\n");
34          printf("Enter number of rows of second matrix again: \n");
35          scanf("%d", &row2);
36      }
37      printf("Enter elements of second matrix: \n");
38      for (i = 0; i < row2; i++)
39          for (j = 0; j < col2; j++)
40              scanf("%d", &second[i][j]);
41      for (i = 0; i < row1; i++) {
42          for (j = 0; j < col2; j++) {
43              DWORD ThreadId;
44              HANDLE ThreadHandle;
45              int Param[3] = {row2, i , j};
```

Sem04_2.c

```
46              ThreadHandle = CreateThread(
47                  NULL,
48                  0,
49                  MultiElements,
50                  &Param,
51                  0,
52                  &ThreadId);
53
54              WaitForSingleObject(ThreadHandle, INFINITE);
55              multiply[i][j] = Sum;
56              CloseHandle(ThreadHandle);
57          }
58      }
59      printf("Product of the matrices:\n");
60      for (i = 0; i < row1; i++) {
61          for (j = 0; j < col2; j++)
62              printf("%d ", multiply[i][j]);
63          printf("\n");
64      }
65  }
66
```

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```
Enter number of rows and columns of first matrix /row col/:
2 3
Enter elements of first matrix:
1 2 3
4 5 6
Enter number of rows and columns of second matrix /row col/:
3 1
Enter elements of second matrix:
6
7
8
Product of the matrices:
44
107

Process returned 0 (0x0)   execution time : 35.629 s
Press any key to continue.
```