

COEN 11 - Practice VII

Solutions on Wednesday

1. What does function a print?

```
void
a ()
{
    char  string[] = "abc";
    char  *p = string;

    b (&p);
    printf ("%s\n", p);
    return;
}
```

```
void
b (char **p)
{
    char *q;

    q = *p;

    *q = 'd';
    *(q + 1) = 'e';
    q[2] = 'f';
    return;
}
```

2. Write a program to split an NxN matrix into 4 threads, so that each initializes its portion with i+j in each slot. Note that i and j relates to the whole matrix. Each thread should receive a strip. Assume N is a multiple of 4.
3. Write a program in which n threads alternate printing their id, in a synchronized way, so that thread 0 executes before thread 1, which executes before thread 2, which executes before thread 3, ..., which executes before thread n, which executes before thread 0.
4. Write a thread, which controls access to a resource, which can be shared by up to n requesters at a time.
5. Write a task distributor thread, which reads numbers from the keyboard and, for each number, it creates a thread to execute some job specified by the number, which is passed into the thread as an argument. There can only be n threads executing at a time, so your main thread needs to respect that limit, and can only create a new thread if the number of threads executing is below the threshold.