

TOD 112 – Spring 2010 – Assignment 3

Purpose:

Graphics and timers.

Part 1:

- 1) Start Microsoft Visual Studio.
- 2) Make a new SDK project and study the code from appendix (cut/paste) or use your own solution from exercise 2.

Part 2:

Study WM_TIMER and general about timers in the help system. Use timers to simulate the traffic lights so that the traffic lights change automatically. Select your own interval.

Part 3:

You shall now introduce cars. Cars shall arrive from west by pressing left mouse button down and cars from north by pressing the right button. Cars may be drawn as a cross. Advanced users may use bitmaps for drawing the cars (read about LoadBitmap!),

In both cases the cars must follow the traffic rules, that is stop on red light at the crossing, and drive when the light is green. Use a timer for updating the position of the cars.

Part 4:

Now change the program so cars from west arrive with a probability p_v per second, and cars from north arrive with probability p_n . p_v and p_n should be set in a dialog.

You now have a traffic simulator and can study how queues build up in the traffic crossing.

Part 5 : WM_KEYDOWN

Read about WM_KEYDOWN. Make the program so that you change the intensities p_n and p_v with $\pm 10\%$ by pressing the following keys

- left/right arrow (west= p_v)
- up/down (north = p_n)

You can now change p_v and p_n by pressing these keys described above.