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%%                                                                               %
%% Part II: Planning and control of mobile robots                                %
%% Cognitive long-term planning based on gLC (global Limit-cycle)                %
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%% Last modification 21/03/2022                                                  %
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This set of programs provided in this directory will allow you to address, in a simple way, question VI (b) of the tutorial part II. To program the algorithm that you propose in question VI (a), all you have to do is take inspiration from the provided mini-software, this allows you to give a simple view of the different steps:

- to build the global graph characterizing Long-Term Planning (LTP) with the limit cycles method.
- to obtain the shortest path to reach the desired end position (the target) from the robot's initial position.

The method to be implemented in the following is inspired by [2] (please cite this reference as soon as you use these programs in your research and/or academic works), but while drastically simplifying the used LTP method:

- the environment of navigation is static;
- limit cycles have circular orbits of convergence (circles of influence);
- the reference frame assigned to each obstacle is orthonormal;
- the criteria for characterizing an elementary limit cycle will depend only on: the length of the limit cycle (cf. equation 9 in [2]) and the evolution of the curvature of the limit cycle along its trajectory (cf. equation 10 in [2]);
- etc.

[2], L. Adouane, *Reactive versus cognitive vehicle navigation based on optimal local and global PELC**. Robotics and Autonomous Systems (RAS), DOI 10.1016/j.robot.2016.11.006, volume 88, pp. 51–70, February 2017.