LAB 5: Mobile robot

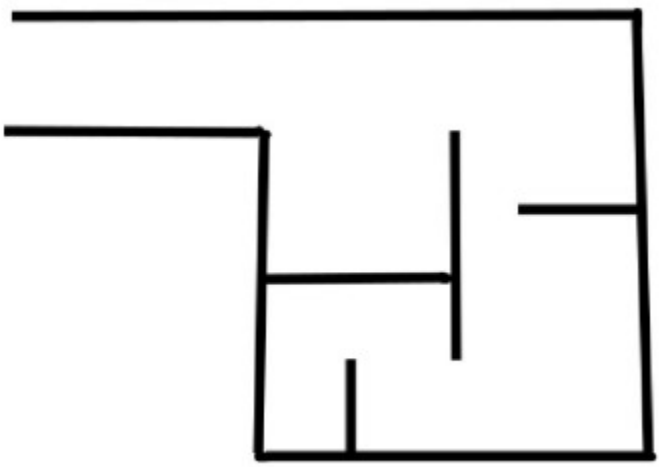
Preparation:
Plan the trajectory of a mobile robot based on a *numerical navigation function*.

Exercise:
Create a Python function for a mobile robot that plans a path based on numerical navigation functions.

This function has the following **inputs**:
• a map in the form of an image in standard format (.png), where the white pixels represent free space, and black pixels represent obstacles
• initial and final position of the robot on the map (point with two coordinates)
• map resolution (size of one pixel on the image in meters)
• radius of the robot in meters

The **outputs** of the function is:
• path in the form of a numpy vector of dimensions *nx2*, where *n* is the number of points of the path.

The task is to create a map and implement functions for numerical navigation and path finding. The function template is in LV5.py.
An example of the map is given in the picture below.



Report:
The report should contain:

A modified Python script surname_5.py that performs the tasks assigned in the Exercise (LV5 - Mobile Robot) and a written report with a description of the exercise and 3-4 images obtained during work on the exercise (image of the created map, image of the map obtained with the numerical navigation function and image of the map with the planned route drawn).

Zip the files and upload them by **May 30, 2023**.