Complex of Technical Schools in Grudziądz

Automation & Robotics LAB

Laboratory manual

Basics of Robotics – Programming on the RobLab &RobTrain Devices.

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Robotics Devices are situated in lab No. 48

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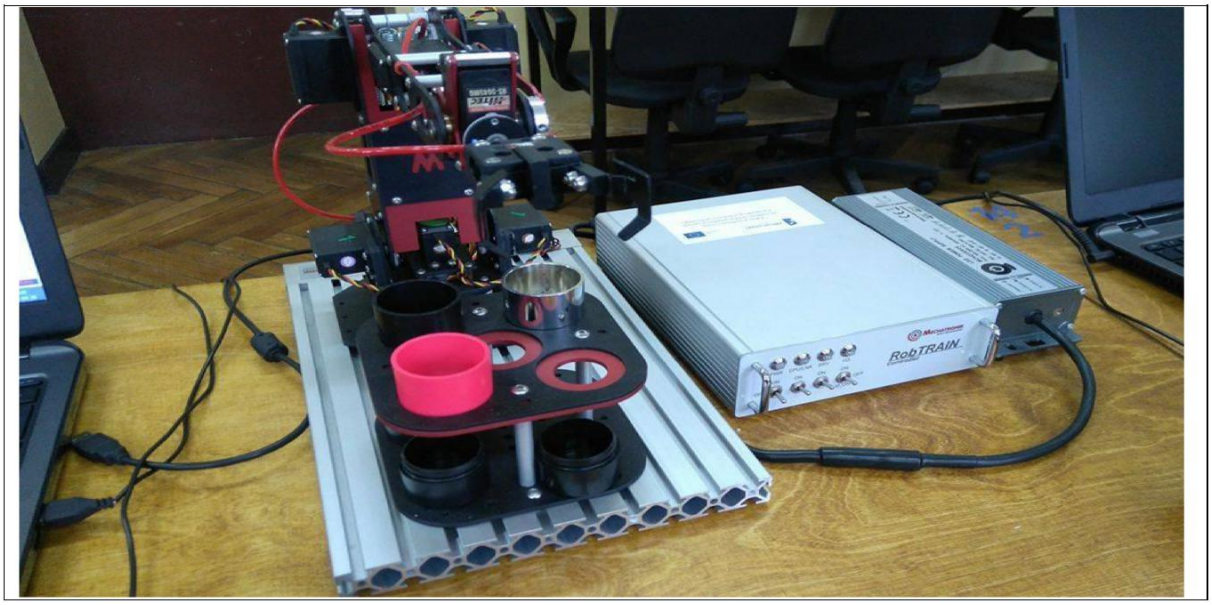
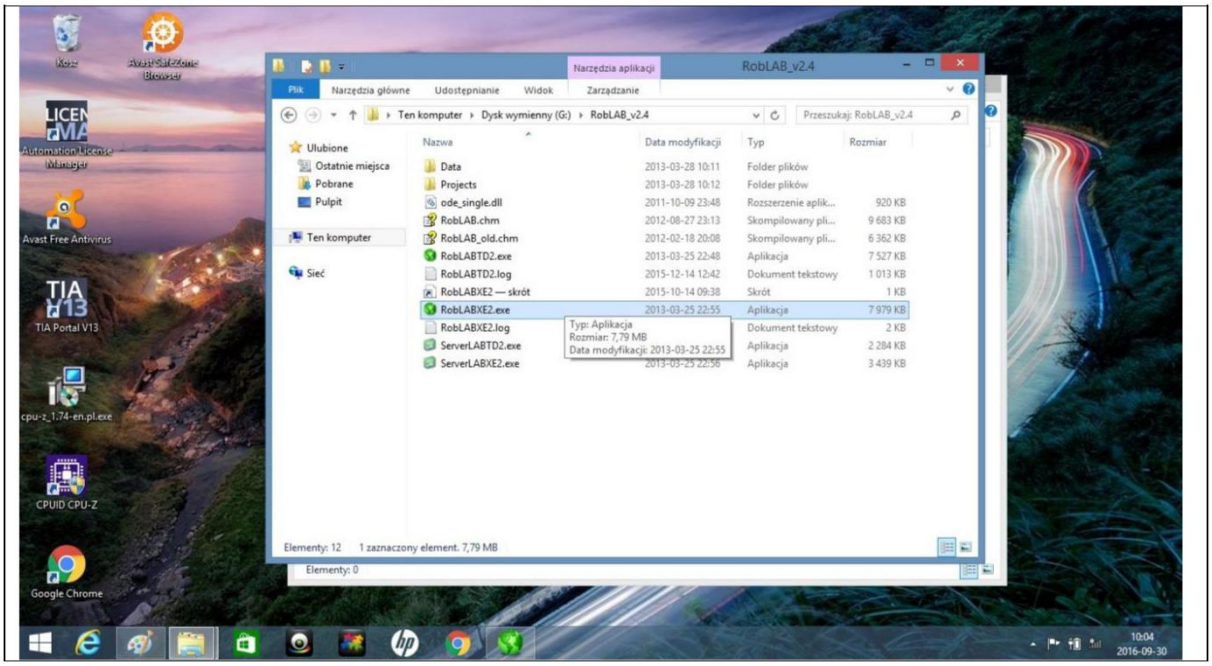
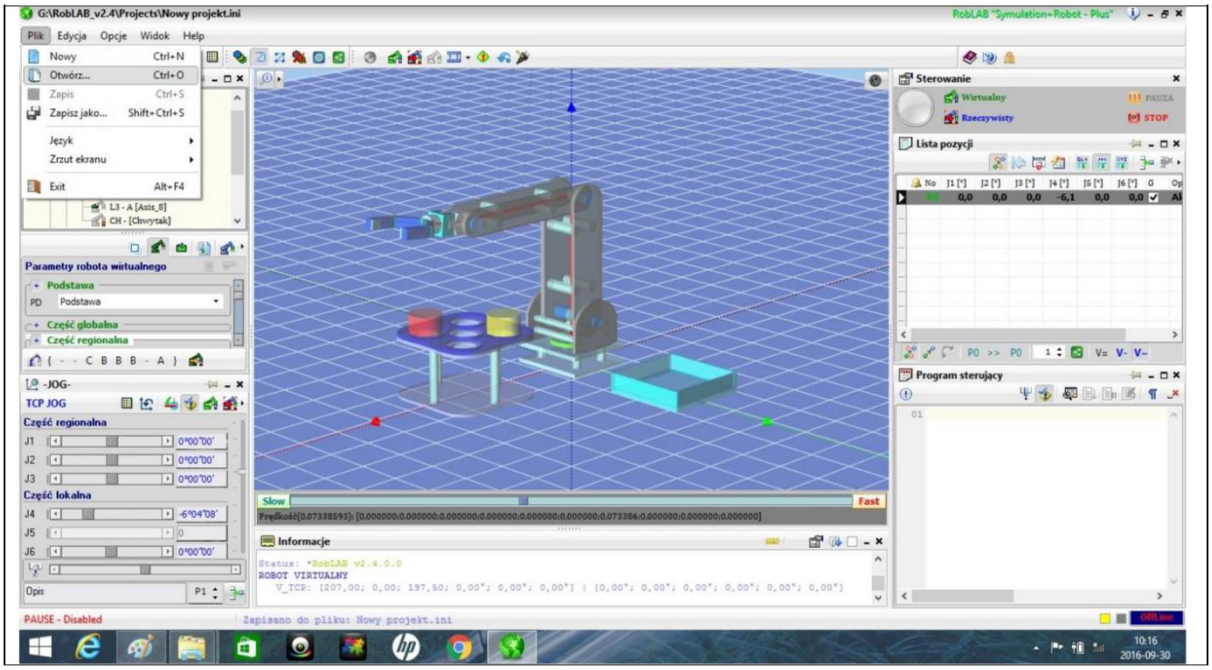


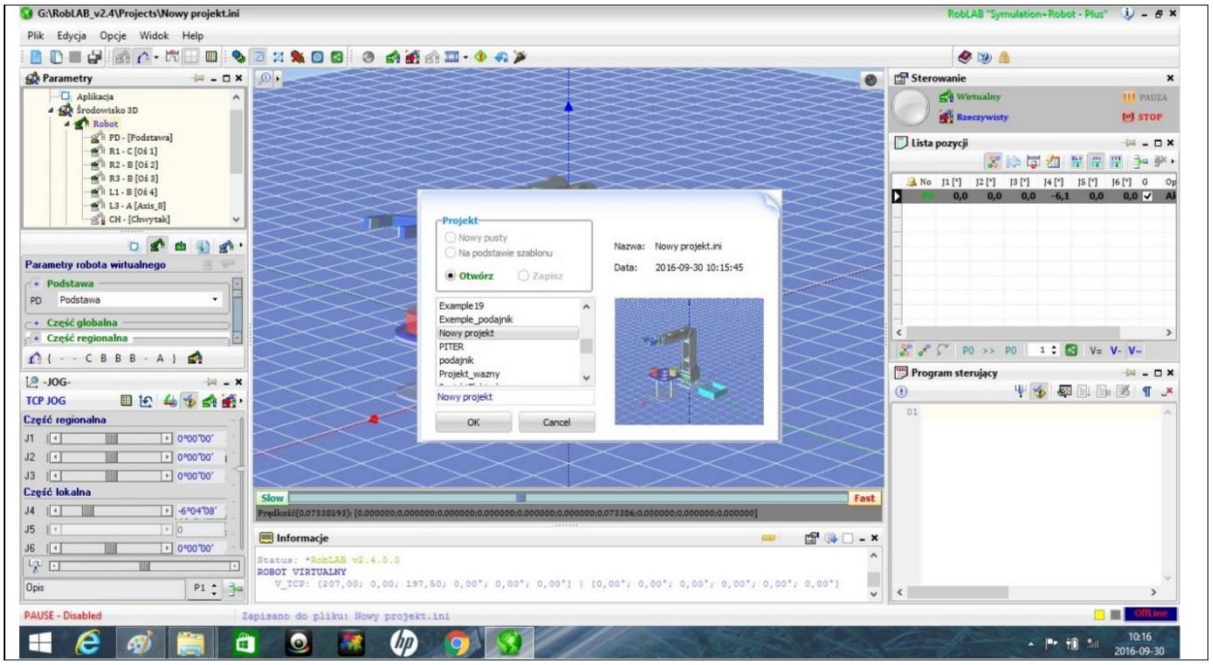
1. *To start the program, choose from the key (read pendriv'a) Program RobLABEXE2.exe*



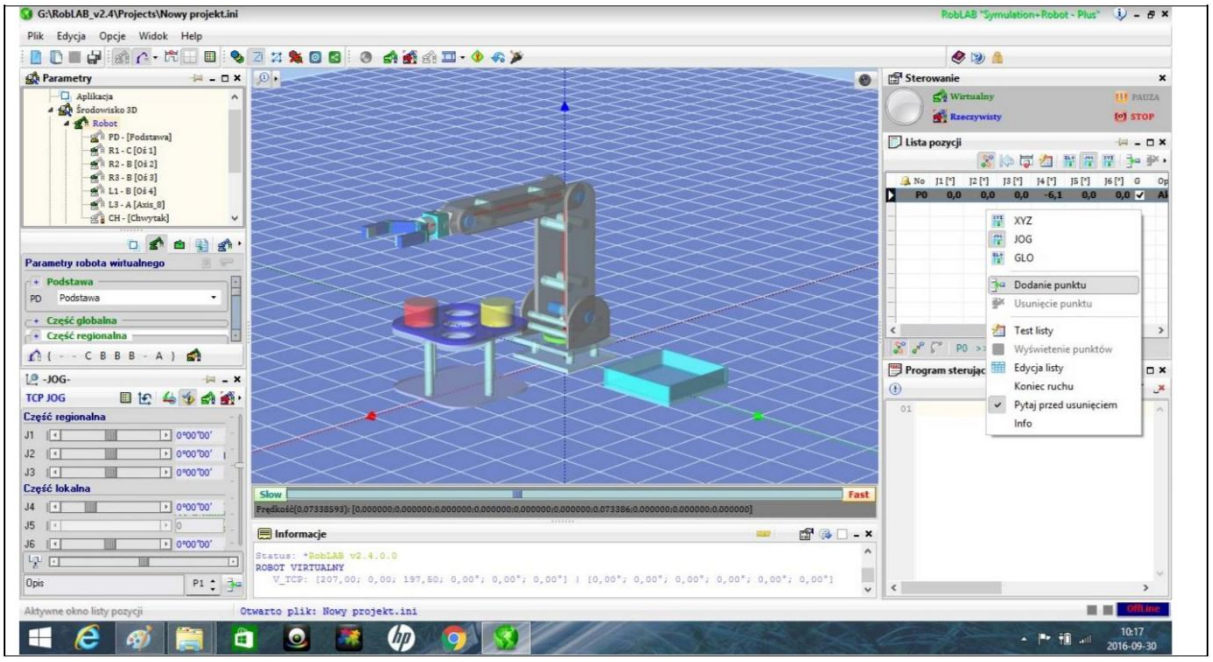
2. *After starting the program, we start writing the program by opening the corresponding empty file selected from the list.*



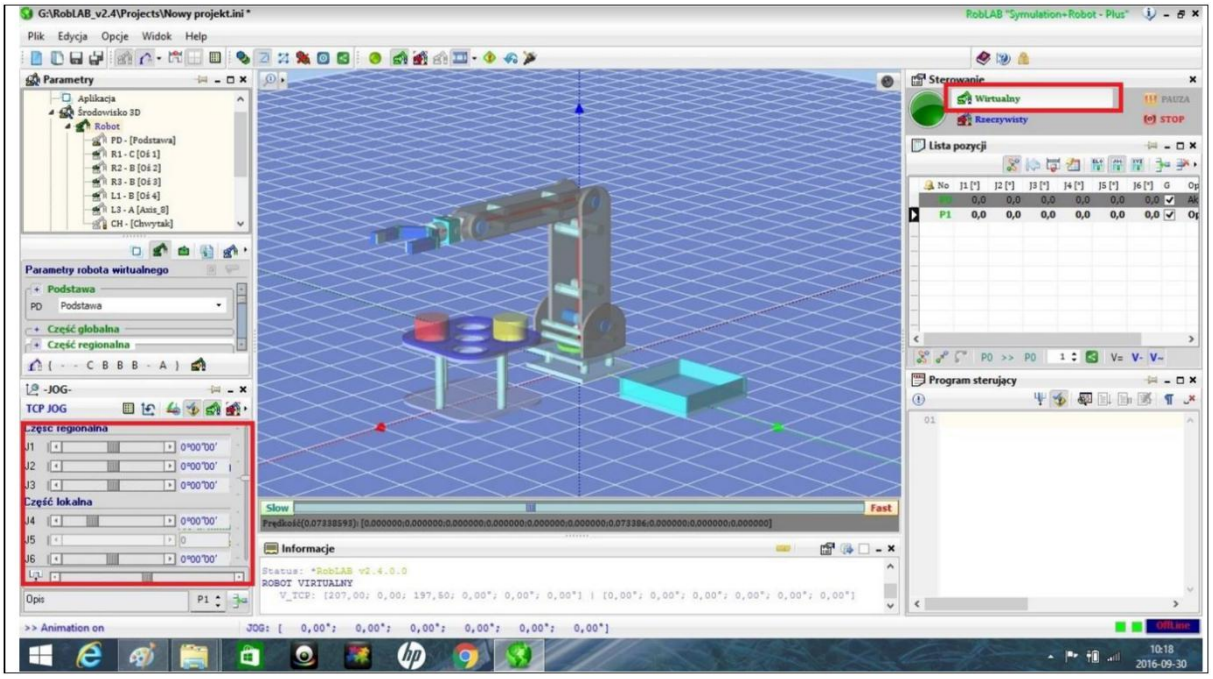
3. *We choose New Project from the list.*



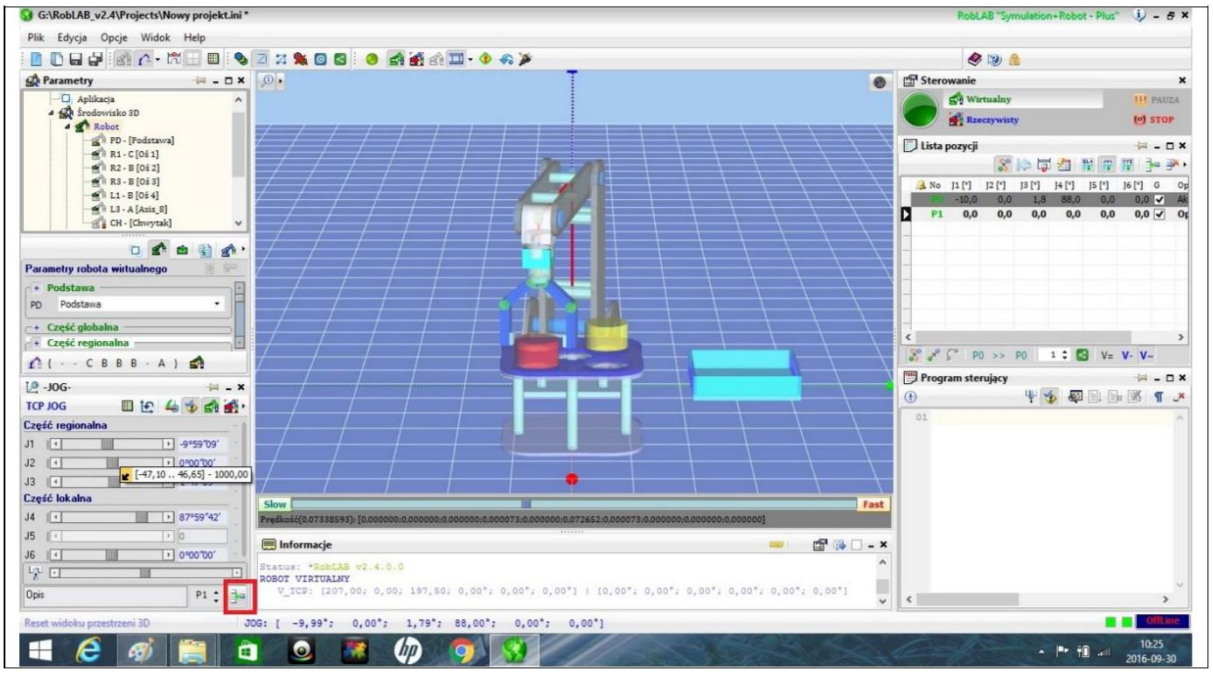
4. *Then, by pressing the right mouse button on the right field, choose add a point.*



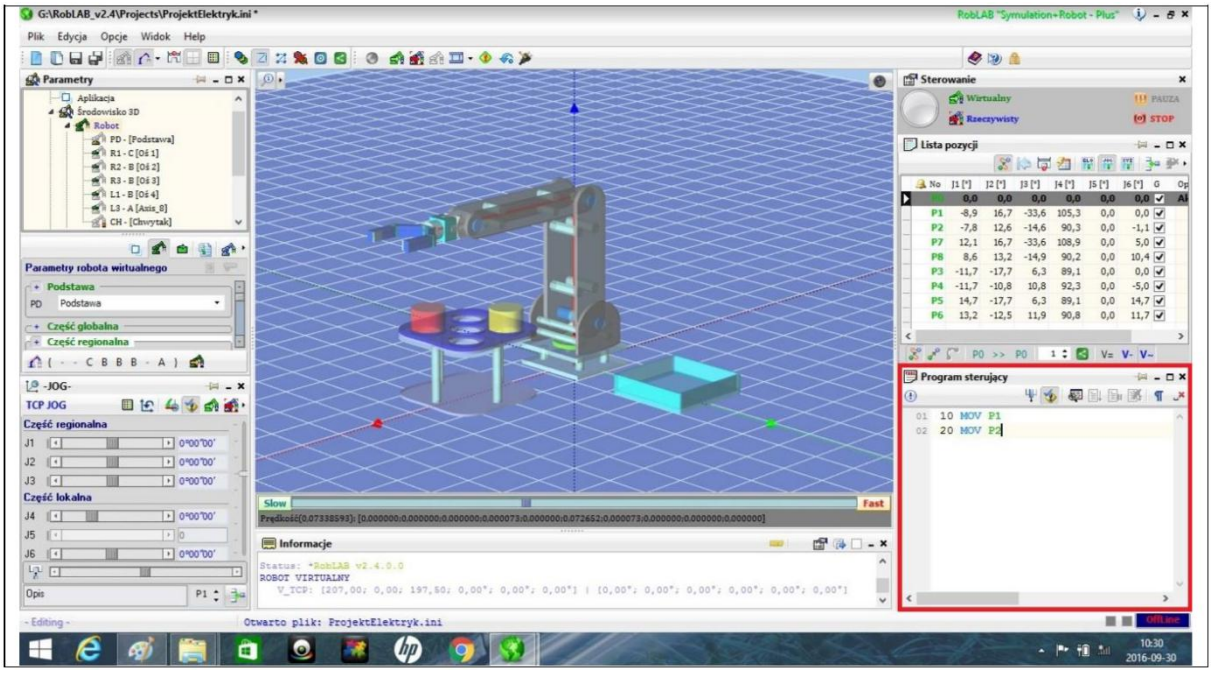
5. *Then in the control window, we connect to the virtual robot and use the sliders to set the position above the selected object.*



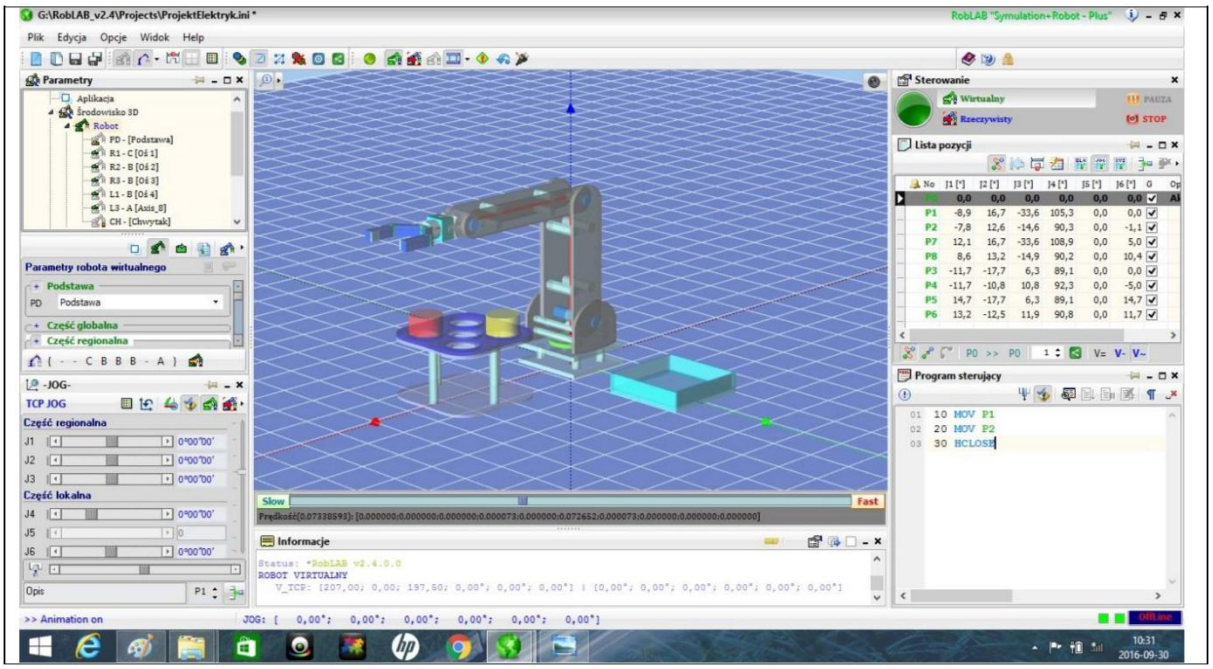
6. *After setting the position, save it by pressing the button under the sliders, respectively describing it (P1, P2, etc.) and so on for each item.*



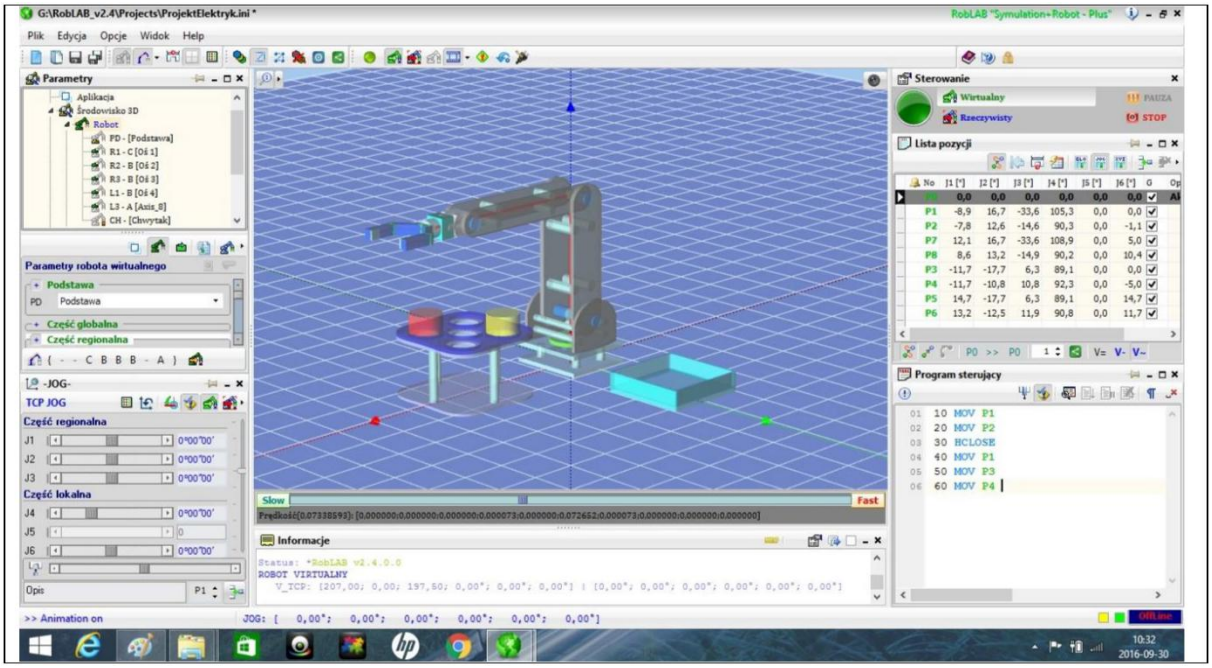
7. ***To write a program, start by entering the numeric program in the field, eg 10, and each subsequent task is named, for example. O 10 higher digit, to move the arm to a point we use the MOV expression and the selected position. The jump in numbering every 10 will allow us to add the next steps of the program at the time of possible modification.***



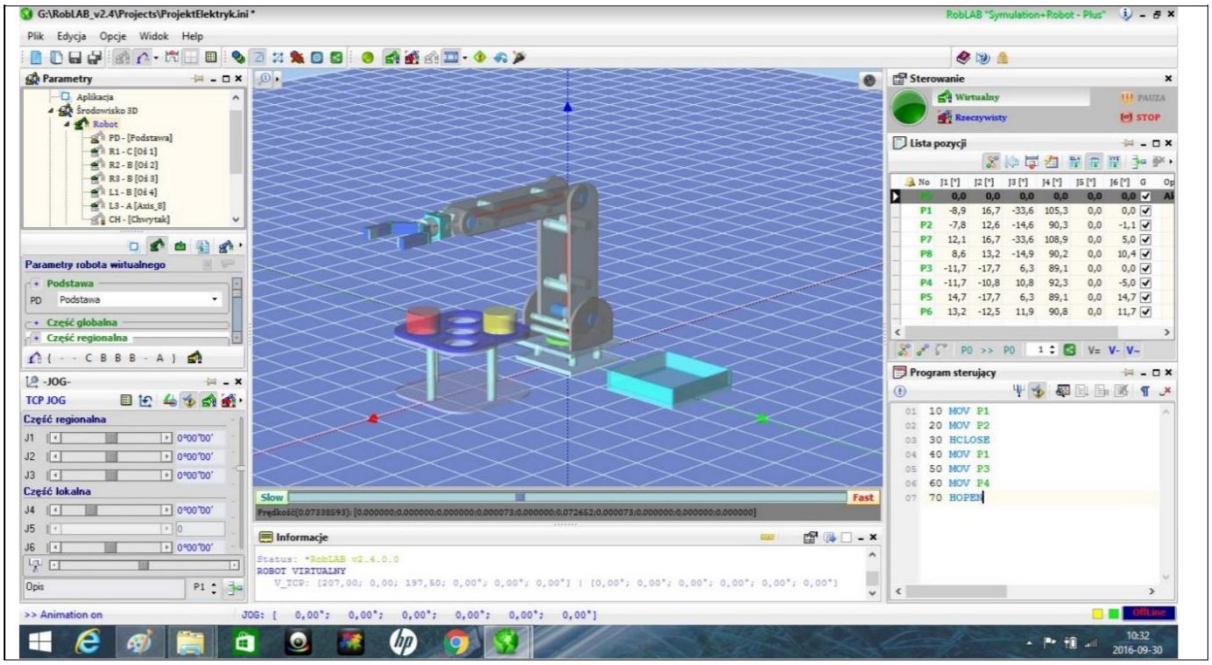
8. ***To close the arm gripper, use the HCLOSE command instead of MOV.***



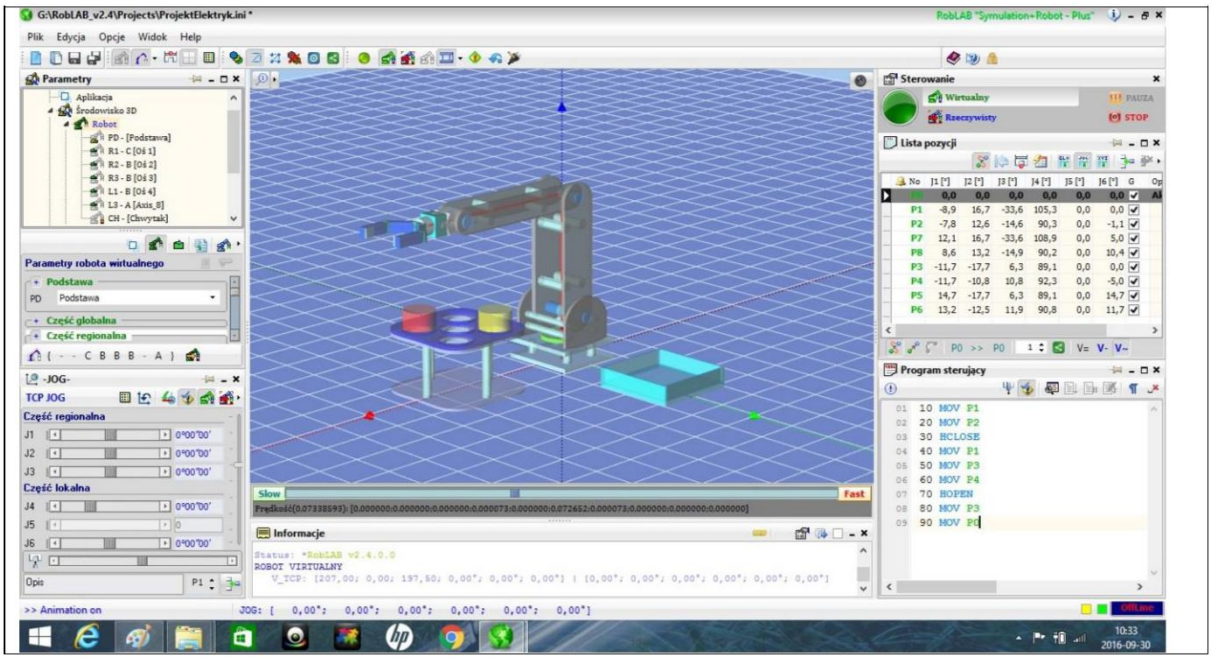
9. ***It is best to fix the position directly above the block in the amount twice the height of the block, so that after catching it the arm lifted it and during the transfer it did not affect another one. In the previous example, it was point P1, and P2 was already in the position to grab the block. If we want to present a block to another place, we raise it to the position above the block and set the next point in which to move the arm.***



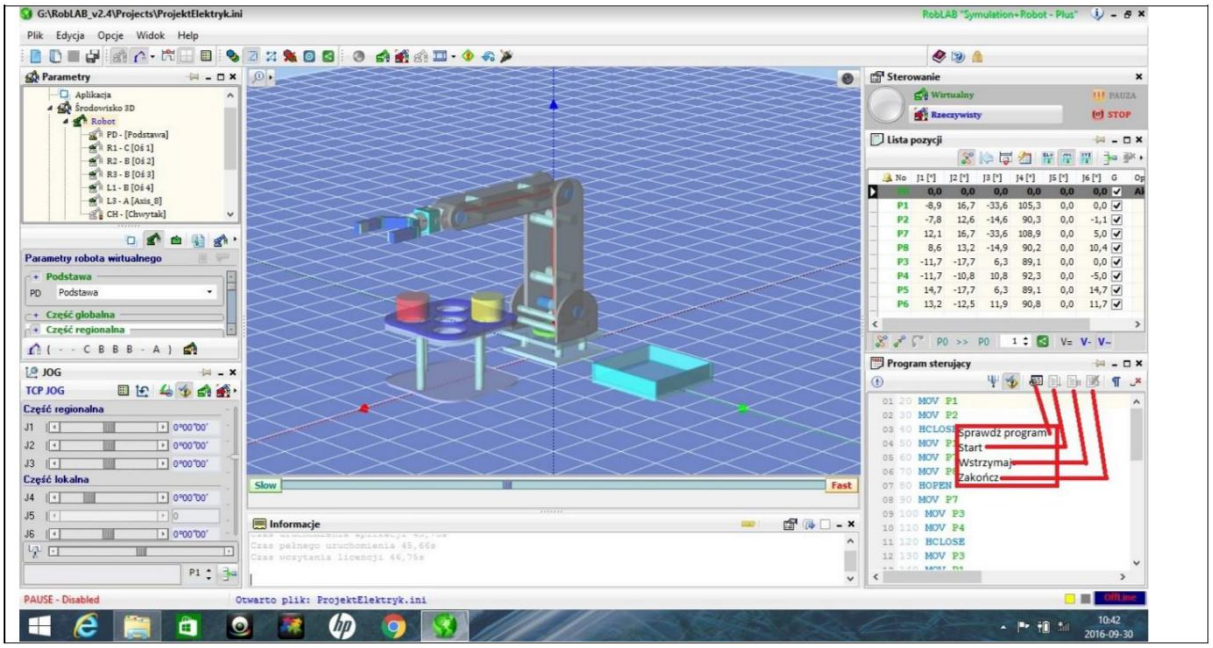
10. ***In order for the arm to release the item, use the HOPEN command.***



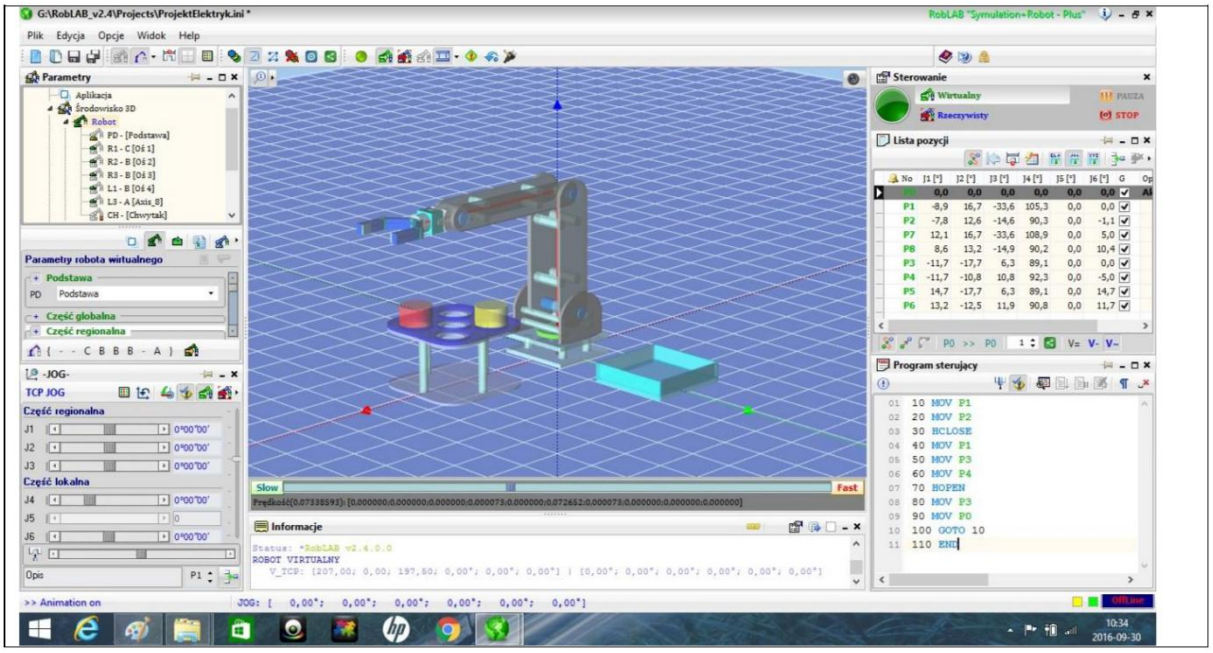
11. ***Then return to the point above the object and then to point P0, the initial position of the arm.***



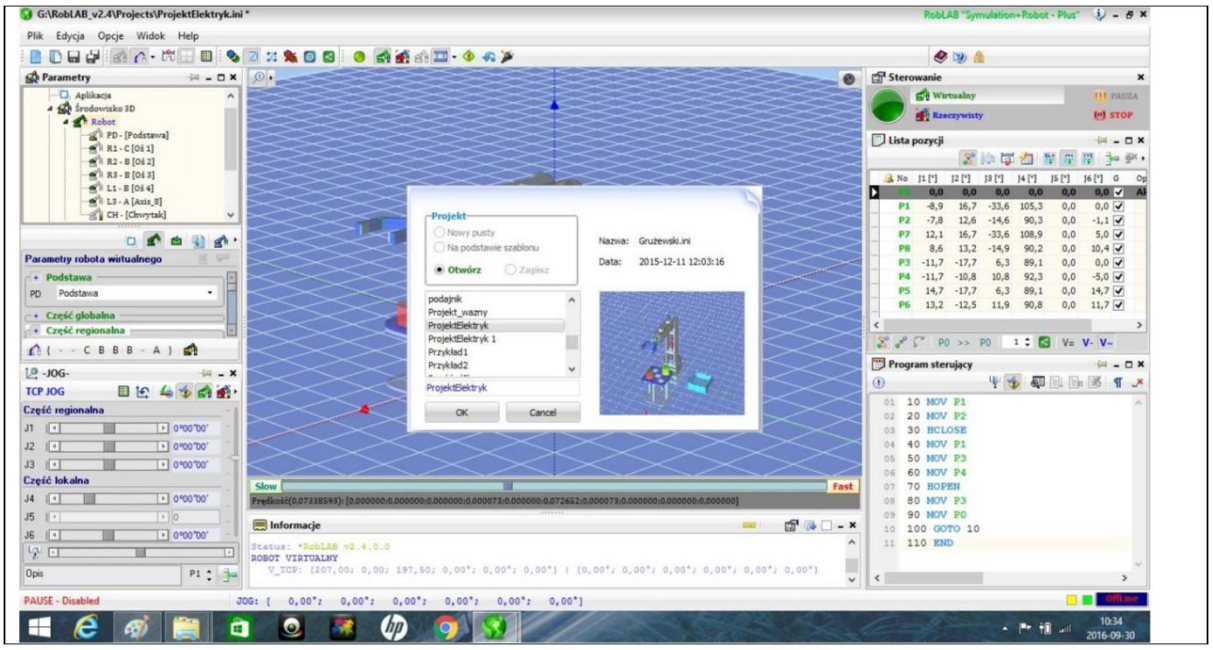
12. ***After completing, please check the correctness of the program, only after that you can start it or pause or stop it completely.***



13. ***For the loop effect, we can add two more formulas that refer the program to the initial task.***



14. ***In the case of a real robot, we do almost the same as with the virtual robot, except that we connect to the real robot instead of the virtual one and set the points by looking at the arm movements in real time. The program is written in the same way as in a virtual robot. For example, a real robot can run the Project Electrician project.***



15. ***To start the robot, firstly turn on the buttons on the power supply so that all the LEDs light up. For proper operation of the real robot, it is also necessary to turn on compressed air (compressor at station 13-1). Compressed air is needed for the pneumatic robot gripper.***