## Exercise 1.

Write a program using stdNt that satisfies the following requirements:
For all exercises a student will be chosen by chance to run their program in front of the class.

a.) Write a program that allows any student to reach the goal.

- You need to reach the door of the classroom.
- No whiles and if's
- Between the student and the door there are no objects
- the language consists only of the following instructions
  - take $x$ steps
  - turn *left/right* $\alpha$ degrees
  - sit, stand, smile

b.) Also use the memory model (program counter, variables, etc) shown in the slides. And write a complete run of your program.

c.) Extend your program so that you avoid objects in the room.

## Exercise 2.

In exercise 1 you have written a program that lets **you** find the door. In this exercise you will make that program more generic.

a.) Adjust the program so that any arbitrary student in the current room (including objects) can find the door. In order to achieve this the language from exercise 1 is extended with the following instructions:

- *if's* and *whiles*
- distance to *board/door/window* $\rightarrow$ *returns a* ***number****, which is the distance from the student to the object*
- collisionWithObstacle $\rightarrow$ *returns* ***true*** *if there is an obstacle less than 1 step in front of the student, otherwise returns* ***false***

b.) Discuss the differences between: is it shorter, is it more readable, are the amount of variables the same, etc?

*End of the assignment*