Confirmation of qualification

In order to start the working tasks, you must demonstrate your level of knowledge.

Show you're ready for the **"**brainstorming**"** and training!

Confirmation of qualification

What is the Python Standard Library?

Which standard library modules do you know?

Confirmation of qualification

Every possibility of the Python language is written in a large set of Python files, the Python Standard Library.

We are already familiar with the library's built-in capabilities and some modules:

Built-in capabilities (executed immediately)

The random module (working with random numbers)

The time module (getting and calculating time)

The turtle module (graphic primitives)

The os module (interaction with PC system)

. . .

Confirmation of qualification

How to create a module?

How to use it in your work?

Confirmation of qualification

Creating modules

To create your own module:

- ❏ Save a file with the code needed for another project.
- ❏ Attach this file as a module to the necessary program.

Database file (module)

```
def get_data():
    Function body
def searching(data):
    Function body
def print_results(res):
    Function body
```

Main file or task tab

```
import database

current = database.get_data()

res = database.searching(current)

database.print_results(res)
```

Confirmation of qualification

Which commands fit the description?

Move the turtle 75 pixels **forward**	?
Rotate the turtle to the right by 114 degrees	?
Rotate the turtle to the left by 30 degrees	?
Make the pen thickness equal to 10 pixels	?
Change the color of the turtle's pen to pink	?

Confirmation of qualification

Which commands fit the description?

Move the turtle 75 pixels **forward**	`forward(75)`
Rotate the turtle to the right by 114 degrees	`right(114)`
Rotate the turtle to the left by 30 degrees	`left(30)`
Make the pen thickness equal to 10 pixels	`pensize(10)`
Change the color of the turtle's pen to pink	`color("pink")`

Confirmation of qualification

Where on the screen does the executor appear?

How do you move the executor to a certain spot on the screen?

Confirmation of qualification

Coordinate plane

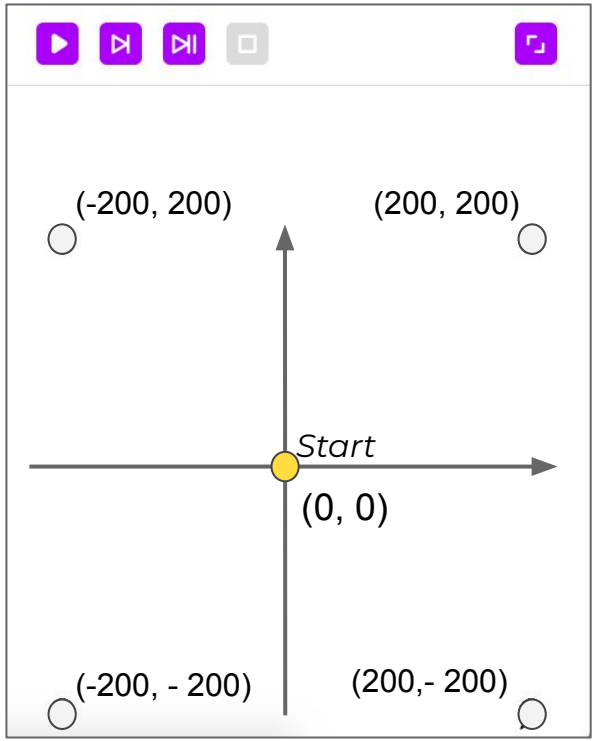
this is the part of the window where the executor is located.

The turtle's position on the plane is determined by two numbers, **coordinates**.

When launching the program, the turtle
appears in the initial position (0, 0).

```
goto(m, n)
```

The command for moving the turtle to a position with indicated coordinates.



Confirmation of qualification

Qualification is confirmed!

Great, you are ready for the “brainstorm” and training!

Confirmation of qualification

“Brainstorm”:

Project workplan

What is a project checklist?

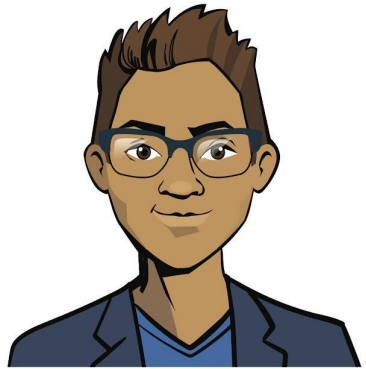
A checklist **is** a list of tasks, necessary for the achievement of a goal.

Example of a checklist:

The aim is to program the rendering of a red circle.

Checklist (task list):

- ❑ Login to “Laboratory”.
- ❑ Create and save a project file.
- ❑ Write a program that draws a red circle.
- ❑ Test the program.



“Brain storm”

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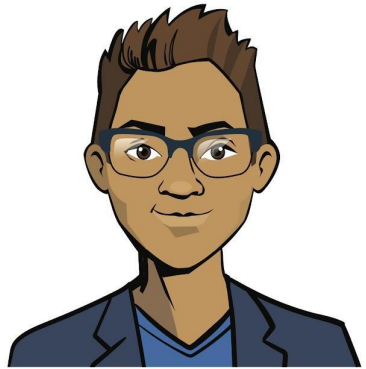
Like a mind map, a checklist can be structured in various ways



“Brain storm”

The “Urban Environment” Project checklist

The aim is to program an image of an urban environment.

Requirements**:**

- presence of a background;
- the use of at least three different objects;
- saving city objects in a separate ‘city’ module.

Checklist**:**

- ❑ ?
- ❑ ?
- ❑ ...

How can we divide the work on the order?

“Brain storm”

The “Urban Environment” Project checklist

The aim is to program an image of an urban environment.

Requirements**:**

- presence of a background;
- the use of at least three different objects;
- saving city objects in a separate ‘city’ module.

Checklist**:**

- ❑ Carefully study the specifications.
- ❑ Build a project mind map.
- ❑ Program an urban environment:
  - ❑ create a module with a background function and object functions;
  - ❑ create the main part of the program with urban environment rendering.
- ❑ Publish the project on “Laboratory”.
- ❑ Present the results to your teammates.
- ❑ Collect your teammates’ feedback.

“Brain storm”

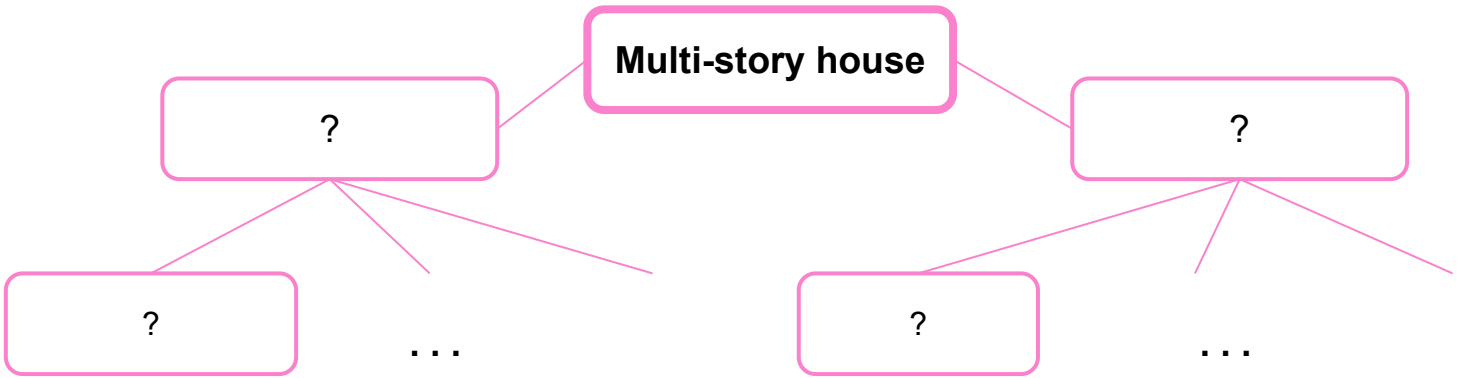
“Urban Environment” project mind map

A mind map is a tool for visualizing an idea, breaking it down into sections, and planning the work.

Example of a mind map:

The aim is to program the rendering of a multi-story house.

Mind map:



“Brain storm”

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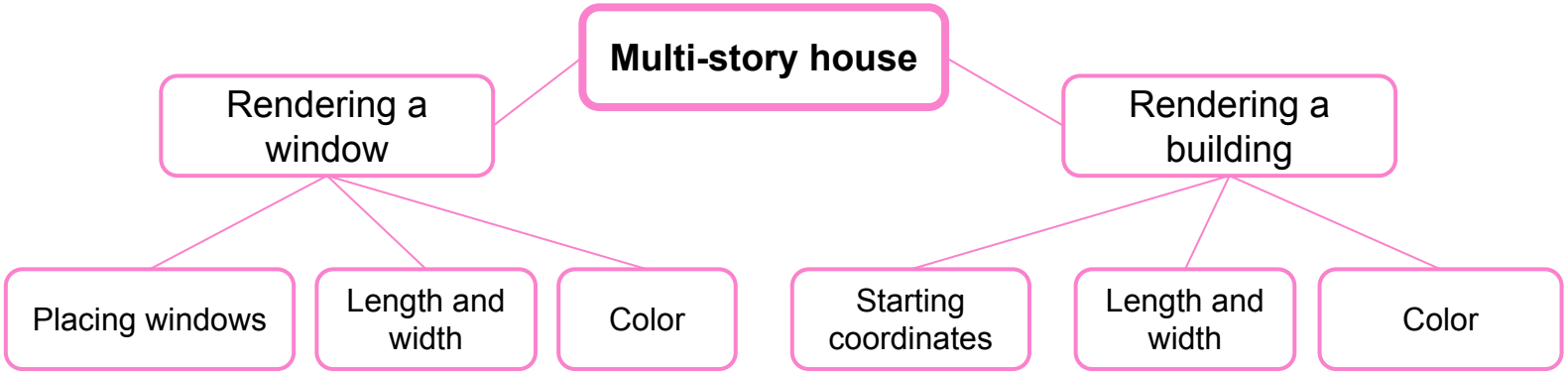

Make whatever <u>you feel</u> comfortable with!

“Brain storm”