Marking-classification of apartments

Hackathon task:

Automatic determination of the number of living rooms and the total area of ​​an apartment based on a floor plan image

Task description:

It is necessary to develop a solution that automatically determines the number of living rooms (hall, living room, bedrooms) and the total area of ​​an apartment based on an uploaded floor plan image. In this case, the kitchen, bathroom, and corridor should not be taken into account when counting rooms. For example, a 2-room apartment is an apartment with a hall, bedroom, kitchen, and bathroom, but the kitchen and bathroom are not included in the number of living rooms.

Requirements:

1. Решение должно принимать на вход изображение планировки в форматах (PNG, JPEG и др.).

2. На выходе должны быть два ключевых параметра:

- Количество **жилых** комнат (зал, гостиная, спальни).

- Общая площадь квартиры (в квадратных метрах), включая все помещения.

3. Алгоритм должен корректно различать жилые и нежилые помещения (коридоры, санузлы, кухни) для правильного расчета количества комнат.

4. Поддержка работы с различными типами планировок (от простых до сложных), без необходимости подробного распознавания границ помещений.

Additional Parameters:

1. The solution must accept a floor plan image in formats (PNG, JPEG, etc.) as input.

2. The output must contain two key parameters:

- Number of living rooms (hall, living room, bedrooms).

- Total area of ​​the apartment (in square meters), including all rooms.

3. The algorithm should correctly distinguish between residential and non-residential premises (corridors, bathrooms, kitchens) to correctly calculate the number of rooms.

4. Support for working with various types of layouts (from simple to complex), without the need for detailed recognition of room boundaries.

Evaluation criteria:

1. Accuracy in determining the number of residential rooms and total area.

2. Image processing speed.

3. Correct determination of residential and non-residential premises.

4. Ease of use and scalability of the solution..

Objective:

To create a tool for automatic marking and classification of apartment layouts, which can be used in construction and digitization of real estate to automate processes and improve data accuracy.

Materials:

One-room apartment:



Two-room apartment: