

Parametric Design Journal: Port Saplaya Mediterranean Houses



For this assignment, I aimed to create a parametric sketch that generates random houses with the architectural style found in Port Saplaya, Valencia, Spain everytime the spacebar is pressed. Unlike previous tasks where I altered only window dimensions, this project involved changing the entire house's dimensions, colors, and facade design.



Port Saplaya

Port Saplaya is a beachfront mixed-use development constructed in the early 1970s. It is often referred to as the "Little Venice" of Valencia due to its intricate network of canals and waterways that wind through the complex. The architecture can be defined as a Mediterranean style, characterized by its stucco exteriors, terracotta roofs, and arched windows. A defining feature of the development is the pastel colors of the houses, which reflect the vibrant nature of this community.



Design Process

Visual Research

My approach began with visual research to study the architectural and decorative styles. I collected images of Port Saplaya and sketched the facades to identify key design elements. These findings led to the formulation of design rules that would guide the parametric sketch.

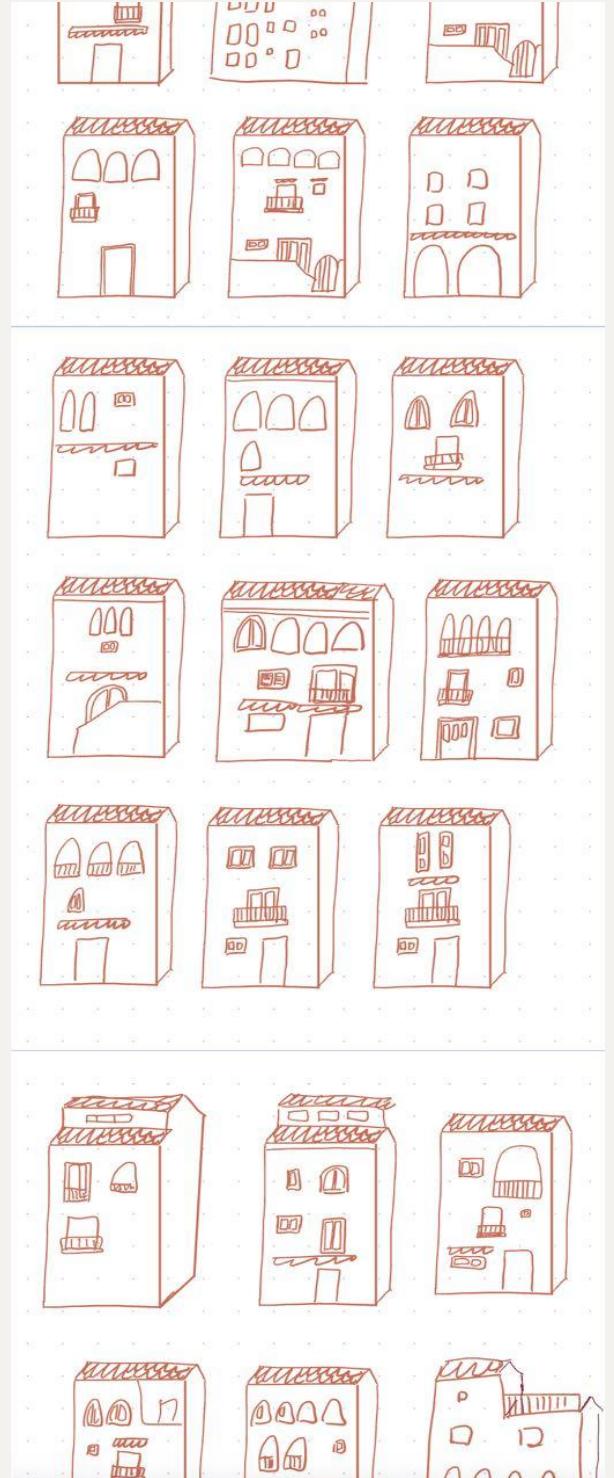
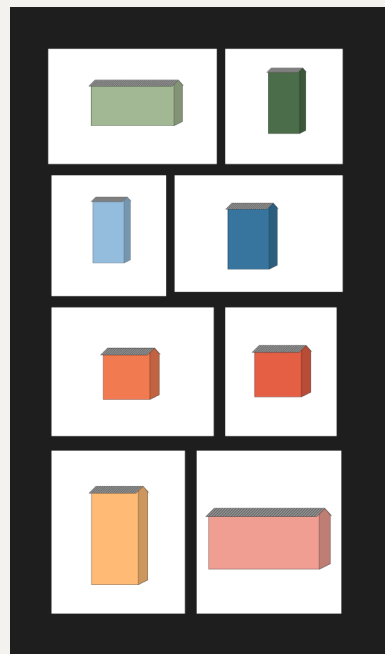
Design Rules:

From the images I created design rules that governed house dimensions, color palettes, and facade details. Algorithms determined the size and placement of arched windows and decorative elements.

- Height: between 2-4 stories
- Roof: tiled, clay
- Windows: mix of arch and square
- Color: vibrant-pastel colors

Iterations

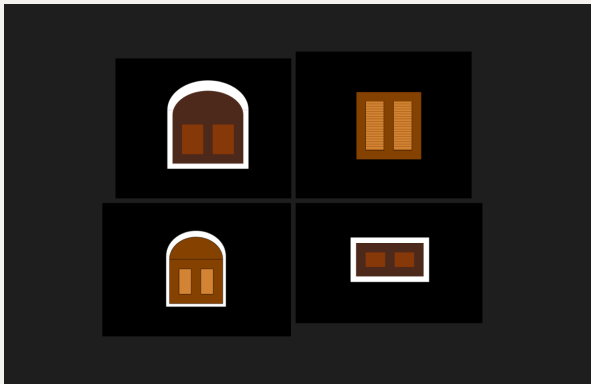
First I created the code to make the random shape of the house and random color, based on a color scheme I created from the visual research.



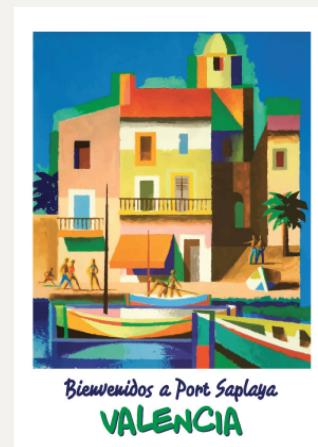
Then I wrote the code to make a random window design in the observed architectural style.

Random window parameters:

- Window dimensions (width & height)
- Whether window is arched
- Whether there is white border
- Whether there are smaller window openings inside large window
- Whether there are windowsill lines on window



I originally had created a few brown-neutral toned color schemes to mimic the window colors in the visual research Port Saplaya images. The idea was that each newly generated house would randomly choose one of the three neutral color schemes and apply it to all the windows generated on the facade. However, I was inspired by one of the images collected during the visual research (shown on the right), and opted to have the windows also follow the vibrant-pastel color scheme of the house walls for a more cohesive, artistic, and playful visual.



Final Product:

Below are screenshots of my final product. Every time the spacebar is pressed, a new house is generated.

