```
In [9]: pip install ipympl
```

```
Collecting ipympl
  Downloading ipympl-0.9.3-py2.py3-none-any.whl (511 kB)
     ---------------------------------------- 0.0/511.6 kB ? eta -:--:--
     --------------------------------------- 41.0/511.6 kB 653.6 kB/s eta 0:00:01
     ----- ---------------------------------- 81.9/511.6 kB 919.0 kB/s eta 0:00:01
     ------------ --------------------------- 174.1/511.6 kB 1.3 MB/s eta 0:00:01
     ------------ --------------------------- 174.1/511.6 kB 1.3 MB/s eta 0:00:01
     ------------ --------------------------- 256.0/511.6 kB 1.1 MB/s eta 0:00:01
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     --------------------------------------- 501.8/511.6 kB 1.3 MB/s eta 0:00:01
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     ---------------------------------------- 511.6/511.6 kB 1.1 MB/s eta 0:00:00
Requirement already satisfied: ipython<9 in c:\users\ali\anaconda3\lib\site-packages (from ipympl) (8.12.0)
Requirement already satisfied: numpy in c:\users\ali\anaconda3\lib\site-packages (from ipympl) (1.24.3)
Requirement already satisfied: ipython-genutils in c:\users\ali\anaconda3\lib\site-packages (from ipympl) (0.2.0)
Requirement already satisfied: pillow in c:\users\ali\anaconda3\lib\site-packages (from ipympl) (9.4.0)
Requirement already satisfied: traitlets<6 in c:\users\ali\anaconda3\lib\site-packages (from ipympl) (5.7.1)
Requirement already satisfied: ipywidgets<9,>=7.6.0 in c:\users\ali\anaconda3\lib\site-packages (from ipympl) (8.0.4)
Requirement already satisfied: matplotlib<4,>=3.4.0 in c:\users\ali\anaconda3\lib\site-packages (from ipympl) (3.7.1)
Requirement already satisfied: backcall in c:\users\ali\anaconda3\lib\site-packages (from ipython<9->ipympl) (0.2.0)
Requirement already satisfied: decorator in c:\users\ali\anaconda3\lib\site-packages (from ipython<9->ipympl) (5.1.1)
Requirement already satisfied: jedi>=0.16 in c:\users\ali\anaconda3\lib\site-packages (from ipython<9->ipympl) (0.18.1)
Requirement already satisfied: matplotlib-inline in c:\users\ali\anaconda3\lib\site-packages (from ipython<9->ipympl) (0.1.6)
Requirement already satisfied: pickleshare in c:\users\ali\anaconda3\lib\site-packages (from ipython<9->ipympl) (0.7.5)
Requirement already satisfied: prompt-toolkit!=3.0.37,<3.1.0,>=3.0.30 in c:\users\ali\anaconda3\lib\site-packages (from ipython<9->ipympl) (3.0.36)
Requirement already satisfied: pygments>=2.4.0 in c:\users\ali\anaconda3\lib\site-packages (from ipython<9->ipympl) (2.15.1)
Requirement already satisfied: colorama in c:\users\ali\anaconda3\lib\site-packages (from ipython<9->ipympl) (0.4.6)
Requirement already satisfied: stack-data in c:\users\ali\anaconda3\lib\site-packages (from ipython<9->ipympl) (0.2.0)
Requirement already satisfied: ipykernel>=4.5.1 in c:\users\ali\anaconda3\lib\site-packages (from ipywidgets<9,>=7.6.0->ipympl) (6.19.2)
Requirement already satisfied: widgetsnbextension~=4.0 in c:\users\ali\anaconda3\lib\site-packages (from ipywidgets<9,>=7.6.0->ipympl) (4.0.5)
Requirement already satisfied: jupyterlab-widgets~=3.0 in c:\users\ali\anaconda3\lib\site-packages (from ipywidgets<9,>=7.6.0->ipympl) (3.0.5)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\ali\anaconda3\lib\site-packages (from matplotlib<4,>=3.4.0->ipympl) (1.0.5)
Requirement already satisfied: cycler>=0.10 in c:\users\ali\anaconda3\lib\site-packages (from matplotlib<4,>=3.4.0->ipympl) (0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\ali\anaconda3\lib\site-packages (from matplotlib<4,>=3.4.0->ipympl) (4.25.0)
Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\ali\anaconda3\lib\site-packages (from matplotlib<4,>=3.4.0->ipympl) (1.4.4)
Requirement already satisfied: packaging>=20.0 in c:\users\ali\anaconda3\lib\site-packages (from matplotlib<4,>=3.4.0->ipympl) (23.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\ali\anaconda3\lib\site-packages (from matplotlib<4,>=3.4.0->ipympl) (3.0.9)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\ali\anaconda3\lib\site-packages (from matplotlib<4,>=3.4.0->ipympl) (2.8.2)
Requirement already satisfied: comm>=0.1.1 in c:\users\ali\anaconda3\lib\site-packages (from ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (0.1.2)
Requirement already satisfied: debugpy>=1.0 in c:\users\ali\anaconda3\lib\site-packages (from ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (1.6.7)
Requirement already satisfied: jupyter-client>=6.1.12 in c:\users\ali\anaconda3\lib\site-packages (from ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (7.4.9)
Requirement already satisfied: nest-asyncio in c:\users\ali\anaconda3\lib\site-packages (from ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (1.5.6)
Requirement already satisfied: psutil in c:\users\ali\anaconda3\lib\site-packages (from ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (5.9.0)
Requirement already satisfied: pyzmq>=17 in c:\users\ali\anaconda3\lib\site-packages (from ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (23.2.0)
Requirement already satisfied: tornado>=6.1 in c:\users\ali\anaconda3\lib\site-packages (from ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (6.3.2)
Requirement already satisfied: parso<0.9.0,>=0.8.0 in c:\users\ali\anaconda3\lib\site-packages (from jedi>=0.16->ipython<9->ipympl) (0.8.3)
Requirement already satisfied: wcwidth in c:\users\ali\anaconda3\lib\site-packages (from prompt-toolkit!=3.0.37,<3.1.0,>=3.0.30->ipython<9->ipympl) (0.2.5)
Requirement already satisfied: six>=1.5 in c:\users\ali\anaconda3\lib\site-packages (from python-dateutil>=2.7->matplotlib<4,>=3.4.0->ipympl) (1.16.0)
Requirement already satisfied: executing in c:\users\ali\anaconda3\lib\site-packages (from stack-data->ipython<9->ipympl) (0.8.3)
Requirement already satisfied: asttokens in c:\users\ali\anaconda3\lib\site-packages (from stack-data->ipython<9->ipympl) (2.0.5)
Requirement already satisfied: pure-eval in c:\users\ali\anaconda3\lib\site-packages (from stack-data->ipython<9->ipympl) (0.2.2)
Requirement already satisfied: entrypoints in c:\users\ali\anaconda3\lib\site-packages (from jupyter-client>=6.1.12->ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (0.4)
Requirement already satisfied: jupyter-core>=4.9.2 in c:\users\ali\anaconda3\lib\site-packages (from jupyter-client>=6.1.12->ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (5.3.0)
Requirement already satisfied: platformdirs>=2.5 in c:\users\ali\anaconda3\lib\site-packages (from jupyter-core>=4.9.2->jupyter-client>=6.1.12->ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (2.5.2)
Requirement already satisfied: pywin32>=300 in c:\users\ali\anaconda3\lib\site-packages (from jupyter-core>=4.9.2->jupyter-client>=6.1.12->ipykernel>=4.5.1->ipywidgets<9,>=7.6.0->ipympl) (305.1)
Installing collected packages: ipympl
Successfully installed ipympl-0.9.3
Note: you may need to restart the kernel to use updated packages.
```

```python
In [1]: import numpy as np
        %matplotlib widget
        import matplotlib.pyplot as plt
        from lab_utils_uni import plt_intuition, plt_stationary, plt_update_onclick, soup_bowl
        plt.style.use('./deeplearning.mplstyle')
```

```python
In [2]: x_train = np.array([1.0, 2.0])            #(size in 1000 square feet)
        y_train = np.array([300.0, 500.0])        #(price in 1000s of dollars)
```

```python
In [3]: def compute_cost(x, y, w, b):
            """
            Computes the cost function for linear regression.

            Args:
              x (ndarray (m,)): Data, m examples
              y (ndarray (m,)): target values
              w,b (scalar)     : model parameters

            Returns
                total_cost (float): The cost of using w,b as the parameters for linear regression
                       to fit the data points in x and y
            """
            # number of training examples
            m = x.shape[0]

            cost_sum = 0
            for i in range(m):
                f_wb = w * x[i] + b
                cost = (f_wb - y[i]) ** 2
                cost_sum = cost_sum + cost
            total_cost = (1 / (2 * m)) * cost_sum

            return total_cost
```
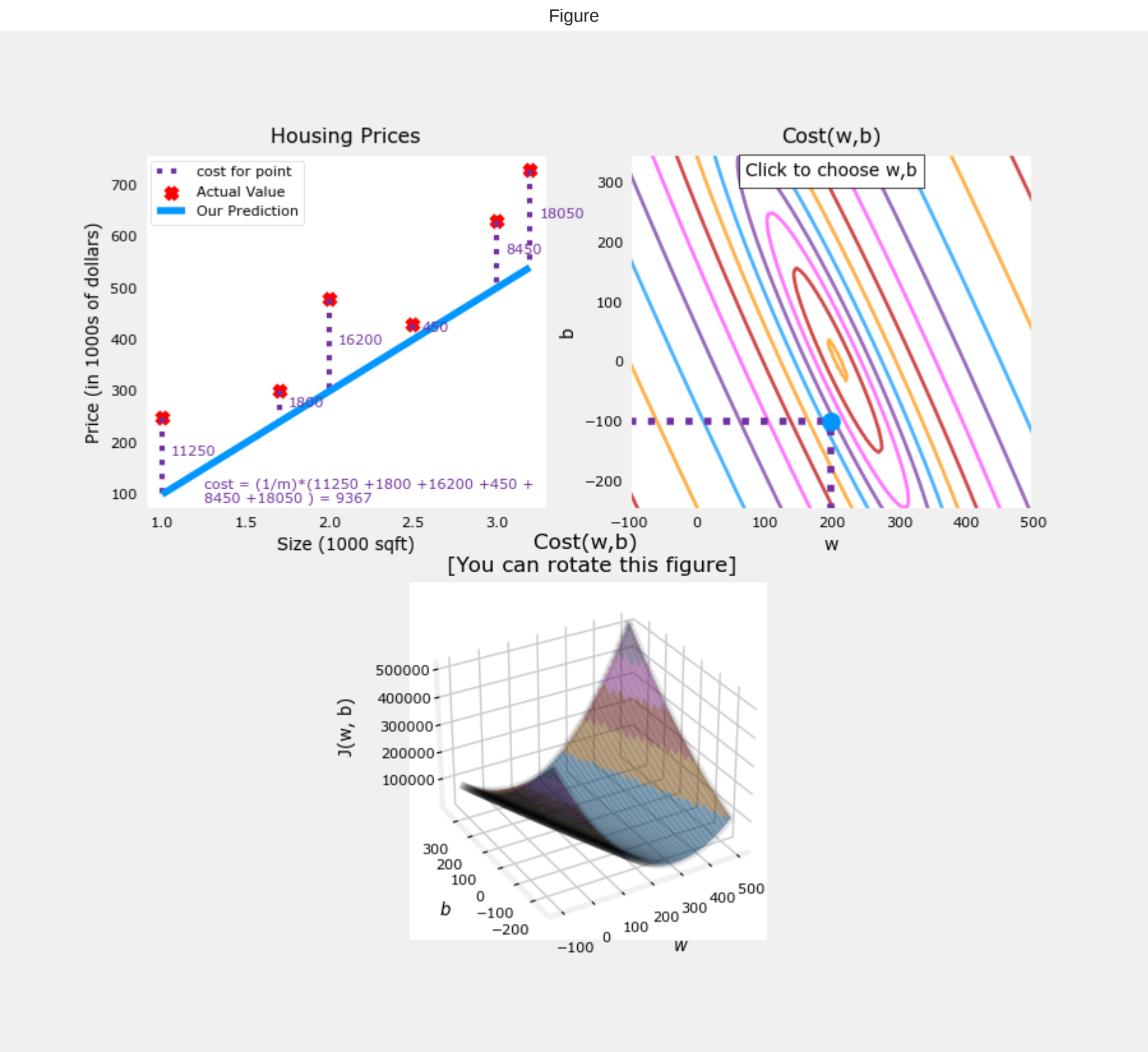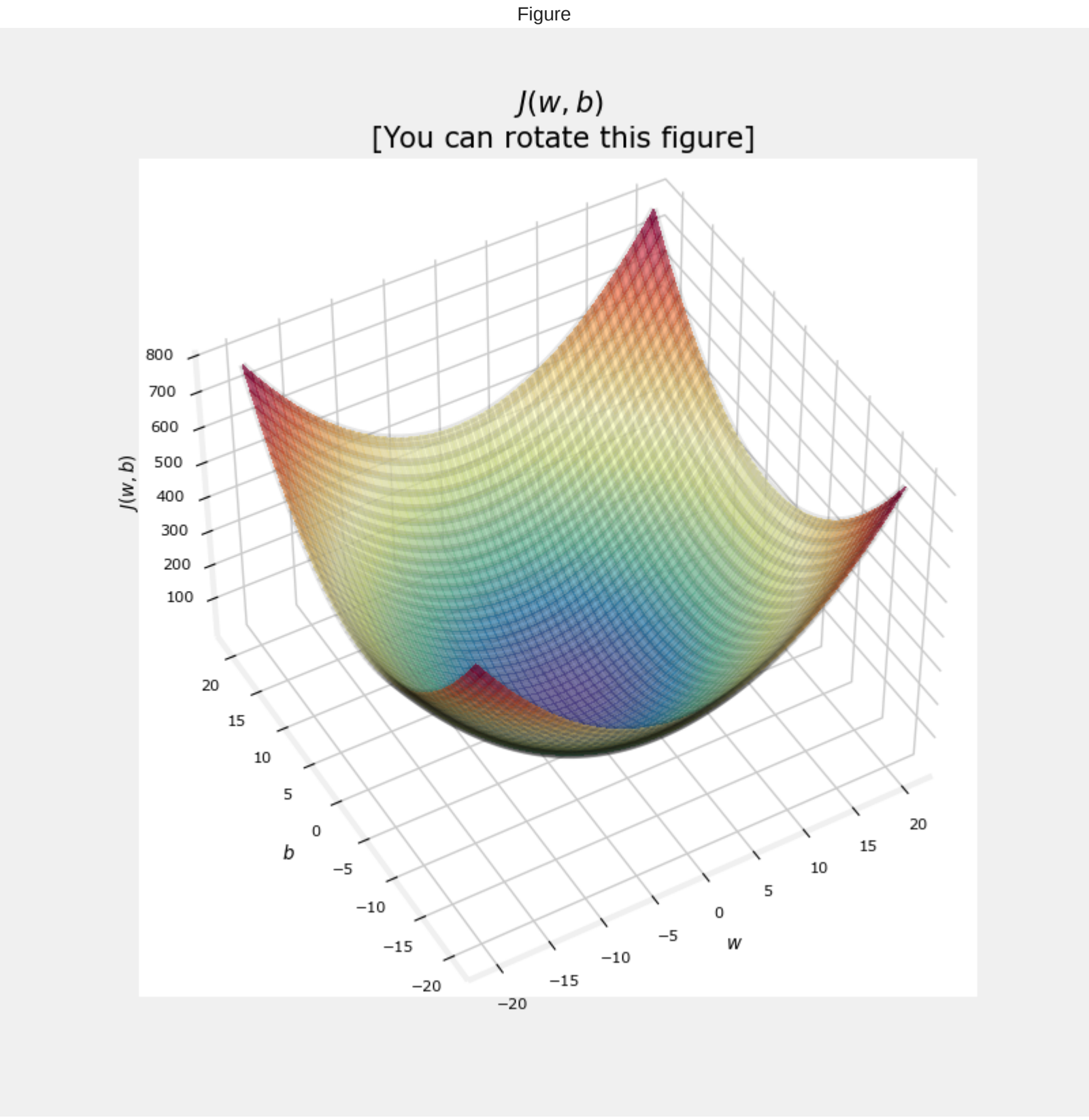
```python
In [4]: plt_intuition(x_train,y_train)
```

```
interactive(children=(IntSlider(value=150, description='w', max=400, step=10), Output()), _dom_classes=('widge…
```

```python
In [5]: x_train = np.array([1.0, 1.7, 2.0, 2.5, 3.0, 3.2])
        y_train = np.array([250, 300, 480,  430,  630, 730,])
```

```python
In [6]: plt.close('all')
        fig, ax, dyn_items = plt_stationary(x_train, y_train)
        updater = plt_update_onclick(fig, ax, x_train, y_train, dyn_items)
```

Figure


```python
In [7]: soup_bowl()
```

Figure


```
In [ ]:
```