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bathrooms  living area  \\\n",
              "0  6762810145  42491                   5
2.50         3650   \n",
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2.50         2920   \n",
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2.75         2910   \n",
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2.50         3310   \n",
              "4  6762812919  42491                   3
2.00         2710   \n",
              "\n",
              "   lot area  number of floors  waterfront present
number of views  \\\n",
              "0      9050               2.0                   0
4   \n",
              "1      4000               1.5                   0
0   \n",
              "2      9480               1.5                   0
0   \n",
```

```
              "3     42998               2.0                    0
0   \n",
              "4      4500               1.5                    0
0   \n",
              "\n",
              "   condition of the house  ...  Built Year
Renovation Year  Postal Code  \\\n",
              "0                       5  ...        1921
0       122003   \n",
              "1                       5  ...        1909
0       122004   \n",
              "2                       3  ...        1939
0       122004   \n",
              "3                       3  ...        2001
0       122005   \n",
              "4                       4  ...        1929
0       122006   \n",
              "\n",
              "   Lattitude  Longitude  living_area_renov
lot_area_renov  \\\n",
              "0    52.8645   -114.557              2880
5400   \n",
              "1    52.8878   -114.470              2470
4000   \n",
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6600   \n",
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42847   \n",
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4500   \n",
              "\n",
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airport    Price  \n",
              "0                         2
58  2380000  \n",
              "1                         2
51  1400000  \n",
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53  1200000  \n",
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51   805000  \n",
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"      <th>living area</th>\n",
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"      <th>number of views</th>\n",
"      <th>condition of the house</th>\n",
"      <th>...</th>\n",
"      <th>Built Year</th>\n",
"      <th>Renovation Year</th>\n",
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"      <td>5</td>\n",
"      <td>...</td>\n",
"      <td>1921</td>\n",
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```
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"      <td>51</td>\n",
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              "              title=\"Convert this dataframe to an
interactive table.\"\n",
              "              style=\"display:none;\">\n",
              "        \n",
              "  <svg xmlns=\"http://www.w3.org/2000/svg\"
height=\"24px\"viewBox=\"0 0 24 24\"\n",
              "       width=\"24px\">\n",
              "    <path d=\"M0 0h24v24H0V0z\" fill=\"none\"/>\n",
              "    <path d=\"M18.56 5.44l.94 2.06.94-2.06 2.06-
.94-2.06-.94-.94-2.06-.94 2.06-2.06.94zm-11 1L8.5 8.5l.94-2.06
2.06-.94-2.06-.94L8.5 2.5l-.94 2.06-2.06.94zm10 10l.94 2.06.94-
2.06 2.06-.94-.94-.94-2.06-.94 2.06-2.06.94z\"/><path
d=\"M17.41 7.96l-1.37-1.37c-.4-.4-.92-.59-1.43-.59-.52 0-1.04.2-
1.43.59L10.3 9.45l-7.72 7.72c-.78.78-.78 2.05 0 2.83L4
21.41c.39.39.9.59 1.41.59.51 0 1.02-.2 1.41-.59l7.78-7.78 2.81-
2.81c.8-.78.8-2.07 0-2.86zM5.41 20L4 18.59l7.72-7.72 1.47
1.35L5.41 20z\"/>\n",
              "  </svg>\n",
              "      </button>\n",
              "      \n",
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              "      flex-wrap:wrap;\n",
              "      gap: 12px;\n",
              "    }\n",
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              "      cursor: pointer;\n",
              "      display: none;\n",
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              "      height: 32px;\n",
              "      padding: 0 0 0 0;\n",
              "      width: 32px;\n",
              "    }\n",
              "\n",
              "    .colab-df-convert:hover {\n",
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              "      box-shadow: 0px 1px 2px rgba(60, 64, 67,
0.3), 0px 1px 3px 1px rgba(60, 64, 67, 0.15);\n",
              "      fill: #174EA6;\n",
              "    }\n",
              "\n",
              "    [theme=dark] .colab-df-convert {\n",
              "      background-color: #3B4455;\n",
              "      fill: #D2E3FC;\n",
              "    }\n",
```

```
              "\n",
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              "      box-shadow: 0px 1px 3px 1px rgba(0, 0, 0,
0.15);\n",
              "      filter: drop-shadow(0px 1px 2px rgba(0, 0, 0,
0.3));\n",
              "      fill: #FFFFFF;\n",
              "    }\n",
              "  </style>\n",
              "\n",
              "      <script>\n",
              "        const buttonEl =\n",
              "          document.querySelector('#df-c2932ec6-
d2e4-4eb9-94a3-060c7b4840f7 button.colab-df-convert');\n",
              "        buttonEl.style.display =\n",
              "          google.colab.kernel.accessAllowed ?
'block' : 'none';\n",
              "\n",
              "        async function convertToInteractive(key)
{\n",
              "          const element =
document.querySelector('#df-c2932ec6-d2e4-4eb9-94a3-
060c7b4840f7');\n",
              "          const dataTable =\n",
              "            await
google.colab.kernel.invokeFunction('convertToInteractive',\n",
              "
[key], {});\n",
              "          if (!dataTable) return;\n",
              "\n",
              "          const docLinkHtml = 'Like what you see?
Visit the ' +\n",
              "            '<a target=\"_blank\"
href=https://colab.research.google.com/notebooks/data_table.ipynb>
data table notebook</a>'\n",
              "            + ' to learn more about interactive
tables.';\n",
              "          element.innerHTML = '';\n",
              "          dataTable['output_type'] =
'display_data';\n",
              "          await
google.colab.output.renderOutput(dataTable, element);\n",
              "          const docLink =
document.createElement('div');\n",
              "          docLink.innerHTML = docLinkHtml;\n",
              "          element.appendChild(docLink);\n",
              "        }\n",
              "      </script>\n",
              "    </div>\n",
              "  </div>\n",
              "  "
            ]
          },
```

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      "import numpy as np\n",
      "import matplotlib.pyplot as plt\n",
      "import seaborn as sns\n",
      "df=pd.read_csv('home.csv')\n",
      "df.head()"
    ]
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4697-9b51-8d717c8b6fac\" name=\"files[]\" multiple disabled\n",
            "        style=\"border:none\" />\n",
            "     <output id=\"result-07f042ae-83fa-4697-9b51-
8d717c8b6fac\">\n",
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has been executed in the\n",
```

```
              "      current browser session. Please rerun this
cell to enable.\n",
              "      </output>\n",
              "      <script>// Copyright 2017 Google LLC\n",
              "//\n",
              "// Licensed under the Apache License, Version 2.0
(the \"License\");\n",
              "// you may not use this file except in compliance
with the License.\n",
              "// You may obtain a copy of the License at\n",
              "//\n",
              "//      http://www.apache.org/licenses/LICENSE-
2.0\n",
              "//\n",
              "// Unless required by applicable law or agreed to
in writing, software\n",
              "// distributed under the License is distributed on
an \"AS IS\" BASIS,\n",
              "// WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND,
either express or implied.\n",
              "// See the License for the specific language
governing permissions and\n",
              "// limitations under the License.\n",
              "\n",
              "/**\n",
              " * @fileoverview Helpers for google.colab Python
module.\n",
              " */\n",
              "(function(scope) {\n",
              "function span(text, styleAttributes = {}) {\n",
              "  const element =
document.createElement('span');\n",
              "  element.textContent = text;\n",
              "  for (const key of Object.keys(styleAttributes))
{\n",
              "    element.style[key] = styleAttributes[key];\n",
              "  }\n",
              "  return element;\n",
              "}\n",
              "\n",
              "// Max number of bytes which will be uploaded at a
time.\n",
              "const MAX_PAYLOAD_SIZE = 100 * 1024;\n",
              "\n",
              "function _uploadFiles(inputId, outputId) {\n",
              "  const steps = uploadFilesStep(inputId,
outputId);\n",
              "  const outputElement =
document.getElementById(outputId);\n",
              "  // Cache steps on the outputElement to make it
available for the next call\n",
              "  // to uploadFilesContinue from Python.\n",
              "  outputElement.steps = steps;\n",
              "\n",
```

```
              "  return _uploadFilesContinue(outputId);\n",
              "}\n",
              "\n",
              "// This is roughly an async generator (not
supported in the browser yet),\n",
              "// where there are multiple asynchronous steps and
the Python side is going\n",
              "// to poll for completion of each step.\n",
              "// This uses a Promise to block the python side on
completion of each step,\n",
              "// then passes the result of the previous step as
the input to the next step.\n",
              "function _uploadFilesContinue(outputId) {\n",
              "  const outputElement =
document.getElementById(outputId);\n",
              "  const steps = outputElement.steps;\n",
              "\n",
              "  const next =
steps.next(outputElement.lastPromiseValue);\n",
              "  return
Promise.resolve(next.value.promise).then((value) => {\n",
              "    // Cache the last promise value to make it
available to the next\n",
              "    // step of the generator.\n",
              "    outputElement.lastPromiseValue = value;\n",
              "    return next.value.response;\n",
              "  });\n",
              "}\n",
              "\n",
              "/**\n",
              " * Generator function which is called between each
async step of the upload\n",
              " * process.\n",
              " * @param {string} inputId Element ID of the input
file picker element.\n",
              " * @param {string} outputId Element ID of the
output display.\n",
              " * @return {!Iterable<!Object>} Iterable of next
steps.\n",
              " */\n",
              "function* uploadFilesStep(inputId, outputId) {\n",
              "  const inputElement =
document.getElementById(inputId);\n",
              "  inputElement.disabled = false;\n",
              "\n",
              "  const outputElement =
document.getElementById(outputId);\n",
              "  outputElement.innerHTML = '';\n",
              "\n",
              "  const pickedPromise = new Promise((resolve) =>
{\n",
              "    inputElement.addEventListener('change', (e) =>
{\n",
              "      resolve(e.target.files);\n",
```

```
              "    });\n",
              "  });\n",
              "\n",
              "  const cancel =
document.createElement('button');\n",
              "
inputElement.parentElement.appendChild(cancel);\n",
              "  cancel.textContent = 'Cancel upload';\n",
              "  const cancelPromise = new Promise((resolve) =>
{\n",
              "    cancel.onclick = () => {\n",
              "      resolve(null);\n",
              "    };\n",
              "  });\n",
              "\n",
              "  // Wait for the user to pick the files.\n",
              "  const files = yield {\n",
              "    promise: Promise.race([pickedPromise,
cancelPromise]),\n",
              "    response: {\n",
              "      action: 'starting',\n",
              "    }\n",
              "  };\n",
              "\n",
              "  cancel.remove();\n",
              "\n",
              "  // Disable the input element since further picks
are not allowed.\n",
              "  inputElement.disabled = true;\n",
              "\n",
              "  if (!files) {\n",
              "    return {\n",
              "      response: {\n",
              "        action: 'complete',\n",
              "      }\n",
              "    };\n",
              "  }\n",
              "\n",
              "  for (const file of files) {\n",
              "    const li = document.createElement('li');\n",
              "    li.append(span(file.name, {fontWeight:
'bold'}));\n",
              "    li.append(span(\n",
              "        `(${file.type || 'n/a'}) - ${file.size}
bytes, ` +\n",
              "        `last modified: ${\n",
              "            file.lastModifiedDate ?
file.lastModifiedDate.toLocaleDateString() :\n",
              "                                    'n/a'} -
`));\n",
              "    const percent = span('0% done');\n",
              "    li.appendChild(percent);\n",
              "\n",
              "    outputElement.appendChild(li);\n",
```

```
              "\n",
              "    const fileDataPromise = new Promise((resolve)
=> {\n",
              "      const reader = new FileReader();\n",
              "      reader.onload = (e) => {\n",
              "        resolve(e.target.result);\n",
              "      };\n",
              "      reader.readAsArrayBuffer(file);\n",
              "    });\n",
              "    // Wait for the data to be ready.\n",
              "    let fileData = yield {\n",
              "      promise: fileDataPromise,\n",
              "      response: {\n",
              "        action: 'continue',\n",
              "      }\n",
              "    };\n",
              "\n",
              "    // Use a chunked sending to avoid message size
limits. See b/62115660.\n",
              "    let position = 0;\n",
              "    do {\n",
              "      const length = Math.min(fileData.byteLength -
position, MAX_PAYLOAD_SIZE);\n",
              "      const chunk = new Uint8Array(fileData,
position, length);\n",
              "      position += length;\n",
              "\n",
              "      const base64 =
btoa(String.fromCharCode.apply(null, chunk));\n",
              "      yield {\n",
              "        response: {\n",
              "          action: 'append',\n",
              "          file: file.name,\n",
              "          data: base64,\n",
              "        },\n",
              "      };\n",
              "\n",
              "      let percentDone = fileData.byteLength === 0
?\n",
              "          100 :\n",
              "          Math.round((position /
fileData.byteLength) * 100);\n",
              "      percent.textContent = `${percentDone}%
done`;\n",
              "\n",
              "    } while (position < fileData.byteLength);\n",
              "  }\n",
              "\n",
              "  // All done.\n",
              "  yield {\n",
              "    response: {\n",
              "      action: 'complete',\n",
              "    }\n",
              "  };\n",
```

```
              "}\n",
              "\n",
              "scope.google = scope.google || {};\n",
              "scope.google.colab = scope.google.colab || {};\n",
              "scope.google.colab._files = {\n",
              "  _uploadFiles,\n",
              "  _uploadFilesContinue,\n",
              "};\n",
              "})(self);\n",
              "</script> "
            ]
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          "metadata": {}
        },
        {
          "output_type": "stream",
          "name": "stdout",
          "text": [
            "Saving home.csv to home.csv\n"
          ]
        }
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        "plt.hist(df['Date'])"
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google.colab.kernel.invokeFunction('convertToInteractive',\n",
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[key], {});\n",
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Visit the ' +\n",
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data table notebook</a>'\n",
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2.06-.94-2.06-.94L8.5 2.5l-.94 2.06-2.06.94zm10 10l.94 2.06.94-
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Visit the ' +\n",
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href=https://colab.research.google.com/notebooks/data_table.ipynb>
data table notebook</a>'\n",
              "            + ' to learn more about interactive
tables.';\n",
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2.06-.94-2.06-.94L8.5 2.5l-.94 2.06-2.06.94zm10 10l.94 2.06.94-
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              "      height: 32px;\n",
              "      padding: 0 0 0 0;\n",
              "      width: 32px;\n",
              "    }\n",
              "\n",
```

```
              "    .colab-df-convert:hover {\n",
              "      background-color: #E2EBFA;\n",
              "      box-shadow: 0px 1px 2px rgba(60, 64, 67,
0.3), 0px 1px 3px 1px rgba(60, 64, 67, 0.15);\n",
              "      fill: #174EA6;\n",
              "    }\n",
              "\n",
              "    [theme=dark] .colab-df-convert {\n",
              "      background-color: #3B4455;\n",
              "      fill: #D2E3FC;\n",
              "    }\n",
              "\n",
              "    [theme=dark] .colab-df-convert:hover {\n",
              "      background-color: #434B5C;\n",
              "      box-shadow: 0px 1px 3px 1px rgba(0, 0, 0,
0.15);\n",
              "      filter: drop-shadow(0px 1px 2px rgba(0, 0, 0,
0.3));\n",
              "      fill: #FFFFFF;\n",
              "    }\n",
              "  </style>\n",
              "\n",
              "      <script>\n",
              "        const buttonEl =\n",
              "          document.querySelector('#df-b4efcdc8-
5207-4808-a99b-3dcec19524a7 button.colab-df-convert');\n",
              "        buttonEl.style.display =\n",
              "          google.colab.kernel.accessAllowed ?
'block' : 'none';\n",
              "\n",
              "        async function convertToInteractive(key)
{\n",
              "          const element =
document.querySelector('#df-b4efcdc8-5207-4808-a99b-
3dcec19524a7');\n",
              "          const dataTable =\n",
              "            await
google.colab.kernel.invokeFunction('convertToInteractive',\n",
              "
[key], {});\n",
              "          if (!dataTable) return;\n",
              "\n",
              "          const docLinkHtml = 'Like what you see?
Visit the ' +\n",
              "            '<a target=\"_blank\"
href=https://colab.research.google.com/notebooks/data_table.ipynb>
data table notebook</a>'\n",
              "            + ' to learn more about interactive
tables.';\n",
              "          element.innerHTML = '';\n",
              "          dataTable['output_type'] =
'display_data';\n",
              "          await
google.colab.output.renderOutput(dataTable, element);\n",
```

```
                "          const docLink =
document.createElement('div');\n",
                "          docLink.innerHTML = docLinkHtml;\n",
                "          element.appendChild(docLink);\n",
                "        }\n",
                "      </script>\n",
                "    </div>\n",
                "  </div>\n",
                "  "
              ]
            },
            "metadata": {},
            "execution_count": 77
          }
        ]
      }
    ]
}
```