

**Display text**

```
st.text('Fixed width text')
st.markdown('`_Markdown_`') # see #
st.caption('Balloons. Hundreds of them...')

st.latex(r''' \frac{(\|p\| + 1) \otimes 1}{1} ''')
st.write(['st', 'etc', '3']) # see *
st.title('My title')
st.header('My header')
st.subheader('My sub')
st.code('for i in range(8): foo()')

# * optional kwarg unsafe_allow_html = True
```

**Add widgets to sidebar**

```
# Just add it after st.sidebar:
>>> a = st.sidebar.radio('Choose:',
```

**Magic commands**

```
_This_ is some __Markdown__
a=3
'dataframe:', data
```

**Command line**

```
$ streamlit --help
$ streamlit run your_script.py
$ streamlit hello
$ streamlit config show
$ streamlit cache clear
$ streamlit docs
$ streamlit --version
```

**Pre-release features**

```
pip uninstall streamlit
pip install streamlit-nightly --upgrade
```

Learn more about [experimental features](#)

**st.cheat\_sheet v1.25.0 | August 2023**

Daniel Lewis | August 2023

**Display text**

```
st.button('Hit me')
st.data_editor('Edit data', data)
st.checkbox('Check me out')
st.radio('Pick one!', ['nose','ear'])
st.selectbox('Select!', [1,2,3])
st.multiselect('Multiselect!', [1,2,3])
st.slider('Slide me', min_value=0, max_value=10)
st.select_slider('Slide to select', options=[1,'2'])
st.text_input('Enter some text')
st.number_input('Enter a number')
st.text_area('Area for textual entry')
st.date_input('Date input')
st.time_input('Time entry')
st.file_uploader('File uploader')
st.download_button('Download the file!', data)
st.camera_input('—三三,茄子!')
st.color_picker('Pick a color')
```

**Display data**

```
st.dataframe(my_dataframe)
st.table(data.iloc[0:10])
st.json(['foo','bar','fu','ba'])
st.metric(label="Temp", value="273 K", delta="1.2 K")
```

**Display media**

```
st.image('./header.png')
st.audio(data)
st.video(data)
```

**Columns**

```
col1, col2 = st.columns(2)
col1.write('Column 1')
col2.write('Column 2')

# Three columns with different widths
col1, col2, col3 = st.columns([3,1,1])
# col1 is wider

# Using 'with' notation:
with col1:
    st.write('This is column 1')
```

**Tabs**

```
# Insert containers separated into tabs:
tab1, tab2 = st.tabs("Tab 1", "Tab2")
tab1.write("this is tab 1")
tab2.write("this is tab 2")

# You can also use "with" notation:
with tab1:
    st.radio('Select one!', [1, 2])
```

**Control flow**

```
# Stop execution immediately:
st.stop()
# Rerun script immediately:
st.experimental_rerun()

# Group multiple widgets:
with st.form(key='my_form'):
    username = st.text_input('Username')
    password = st.text_input('Password')
    st.form_submit_button('Login')
```

**Personalize apps for users**

```
# Show different content based on the user's email address.
if st.user.email == 'jane@email.com':
    display_jane_content()
elif st.user.email == 'adam@foocorp.io':
    display_adam_content()
else:
    st.write("Please contact us to get access!")
```

**Display interactive widgets**

```
# Use widgets' returned values in variables
for i in range(int(st.number_input('Num'))):
    foo()
if st.sidebar.selectbox('I:', ['f1']) == 'f1': b()
my_slider_val = st.slider('Quinn Mallory', 1, 88)
st.write(my_slider_val)

# Disable widgets to remove interactivity:
st.slider('Pick a number', 0, 100, disabled=True)
```

**Build chat-based apps**

```
# Insert a chat message container.
with st.chat_message("user"):
    st.write("Hello 👋")
    st.line_chart(np.random.randn(30, 3))

# Display a chat input widget.
st.chat_input("Say something")
```

Learn how to [build chat-based apps](#)

**Mutate data**

```
# Add rows to a dataframe after
# showing it.
element = st.dataframe(df1)
element.add_rows(df2)

# Add rows to a chart after
# showing it.
element = st.line_chart(df1)
element.add_rows(df2)
```

**Display code**

```
st.echo()
with st.echo():
    st.write("Code will be executed and printed")
```

**Placeholders, help, and options**

```
# Replace any single element.
element = st.empty()
element.line_chart(...)
element.text_input(...) # Replaces previous.

# Insert out of order.
elements = st.container()
elements.line_chart(...)
st.write("Hello")
elements.text_input(...) # Appears above "Hello".

st.help(pandas.DataFrame)
st.get_option(key)
st.set_option(key, value)
st.set_page_config(layout="wide")
st.experimental_show(objects)
st.experimental_get_query_params()
st.experimental_set_query_params(*params)
```

**Connect to data sources**

```
st.experimental_connection('pets_db', type='sql')
conn = st.experimental_connection('sql')
conn = st.experimental_connection('snowpark')

class MyConnection(ExperimentalBaseConnection[myconn.MyConnection]):
    def _connect(self, **kwargs) -> MyConnection:
        return myconn.connect(*self._secrets, **kwargs)
    def query(self, query):
        return self._instance.query(query)
```

**Optimize performance**

Cache data objects

```
# E.g. Dataframe computation, storing downloaded data, etc.
@st.cache_data
def foo(bar):
    # Do something expensive and return data
    return data
# Executes foo
d1 = foo(ref1)
# Does not execute foo
# Returns cached item by value, d1 == d2
d2 = foo(ref1)
# Different org, so function foo executes
d3 = foo(ref2)
# Clear all cached entries for this function
foo.clear()
# Clear values from *all* in-memory or on-disk cached functions
st.cache_data.clear()
```

Cache global resources

```
# E.g. TensorFlow session, database connection, etc.
@st.cache_resource
def foo(bar):
    # Create and return a non-data object
    return session
# Executes foo
s1 = foo(ref1)
# Does not execute foo
# Returns cached item by reference, s1 == s2
s2 = foo(ref1)
# Different org, so function foo executes
s3 = foo(ref2)
# Clear all cached entries for this function
foo.clear()
# Clear all global resources from cache
st.cache_resource.clear()
```

Deprecated caching

```
@st.cache
def foo(bar):
    # Do something expensive in here...
    return data
# Executes foo
d1 = foo(ref1)
# Does not execute foo
# Returns cached item by reference, d1 == d2
d2 = foo(ref1)
# Different org, so function foo executes
d3 = foo(ref2)
```

**Display progress and status**

```
# Show a spinner during a process
with st.spinner(text='In progress'):
    time.sleep(3)
    st.success('Done')

# Show and update progress bar
bar = st.progress(50)
time.sleep(3)
bar.progress(100)

st.balloons()
st.snow()
st.toast('Mr Stay-Puft')
st.error('Error message')
st.warning('Warning message')
st.info('Info message')
st.success('Success message')
st.exception(e)
```