

**Write Python function `nowAtISS()` from template file `nowAtISS.py`.** (You may alter the template if you want to try an approach different from that described in the hints, but if you do so, include appropriate commenting.)

The goal of this function is to extract the current space ships at the International Space Station from Wikipedia. Remember to use a standard style and appropriate documentation (you will need little documentation beyond what is in the template).

Work alone and ask Howard for help as needed.

#### Requirements:

- You must use standard Python3 with the “pandas”, “requests” and “Beautiful Soup” modules (only). The return value must be a pandas DataFrame.
- We assume that the web page [https://en.wikipedia.org/wiki/International\\_Space\\_Station](https://en.wikipedia.org/wiki/International_Space_Station) exists and has the table of interest below the header "Currently docked/berthed". We make no assumption about what is above the header, i.e., material above it (including other tables) may be added or deleted without affecting your results. As a challenge, you may want to try to write the function without reading the hints.
- We assume the table is defined by the usual `<table>` `</table>` tags; that the table rows are defined by the usual `<tr>` `</tr>` tags; that the first row has column header text in `<th>` `</th>` tags, and the remaining rows (the number of rows may vary) have `<td>` `</td>` tags column contents of the body of the table. We also assume that the first column of the header row corresponds to the first three columns of the content rows. To make a simple table where the number of header columns matches the number of content columns, you must change first three columns of the content rows from the format “a”, “b”, “c” to the format “b (c)”.
- Remove all footnotes of the form “[#]” at the end of any cell. (For simplicity, you can assume that there are no footnotes in those first three columns that are collapsed to one column.)
- Raise exceptions with meaningful messages if something unexpected happens.
- The result should look something like this:

	Spacecraft and mission	Location	Arrival (UTC)	Departure (planned)
0	Progress MS-10 (Progress 71 cargo)	Zvezda aft	18 November 2018	March 2019
1	Cygnus NG-10 (Cygnus 10 cargo)	Unity nadir	19 November 2018	February 2019
2	Soyuz MS-11 (Expedition 57/58)	Poisk zenith	3 December 2018	July 2019 TBC

#### Hints:

- Use a browser tool to examine the structure of the web page.
- Note that no selector will be able to find the table directly because there is no unique id for the table or any of its parents.

(detailed hints on the next page)

c) Here is my approach:

- i. Select the one element that is a "div" with class "mw-parser-output".
- ii. Use a "for" loop to examine the children of the element from part *i*. Iterate over the indices rather than the values, because we need to find the index of the "h3" tag that contains a "span" with id "Currently\_docked/berthed". When you find that index, use "break" to exit the loop.
- iii. Use a "for" loop to iterate over the elements from part *i*, starting one after the index found in part *ii*. When you find the first "table" element, save that element to a variable and "break" out of the loop.
- iv. Select the "tr" elements from the table.
- v. Make the header from the stripped text of the "th" elements of the first table row.
- vi. Make the table body from the stripped text of the "td" elements of the remaining table rows. Fix this list of lists up to collapse the first three elements as describe in requirement c). Remove the footnotes.
- vii. Make the DataFrame from the body and header.