

CSE 160 25wi Midterm Exam Cheat Sheet

if/elif/else syntax

if *condition1*:

statements

elif *condition2*:

other statements

else:

more statements

for loop syntax

for *i* **in** *sequence*:

statements

function definition syntax

def *function_name*(*param1*, *param2*, ...):

statements

Function	Description
<code>range([start,] stop [, step])</code>	Returns a sequence of numbers from <i>start</i> (inclusive) to <i>stop</i> (exclusive) incremented by <i>step</i>
<code>len(Lst)</code>	Returns the number of elements in <i>Lst</i>

Lists

Function	Description
<code>lst = []</code>	Creates an empty list
<code>lst[idx]</code>	Returns the element in <i>Lst</i> at index <i>idx</i>
<code>lst[start : end]</code>	Returns a sublist of <i>Lst</i> from index <i>start</i> to index <i>end</i> (exclusive)
<code>lst[start : end : step]</code>	Returns a sublist of <i>Lst</i> from index <i>start</i> (default 0) to index <i>end</i> (exclusive, default <code>len(Lst)</code>), incrementing by <i>step</i>
<code>lst.append(elmt)</code>	Adds the element <i>elmt</i> to the end of <i>Lst</i> . Returns None .
<code>lst.extend(other)</code>	Adds each of the elements in the list <i>other</i> to the end of <i>Lst</i> . Returns None .
<code>lst.index(elmt)</code>	Returns index of the first occurrence of <i>elmt</i> in <i>Lst</i> , error if <i>elmt</i> is not in <i>Lst</i>
<code>lst.count(elmt)</code>	Returns the number of times <i>elmt</i> occurs in <i>Lst</i>
<code>lst.remove(elmt)</code>	Removes first occurrence of <i>elmt</i> from <i>Lst</i> , error if <i>elmt</i> is not in <i>Lst</i> . Returns None .
<code>lst.pop(idx)</code> <code>lst.pop()</code>	Removes and returns the element at index <i>idx</i> in <i>Lst</i> . With no parameter, removes the last element in <i>Lst</i>
<code>lst.insert(idx, elmt)</code>	Inserts an element <i>elmt</i> in <i>Lst</i> at index <i>idx</i> . Returns None .
<code>Lst.sort()</code>	Sorts the given list <i>Lst</i> . Returns None .
<code>Lst.reverse()</code>	Reverses the order of elements in the list <i>Lst</i> . Returns None .

File I/O

Function	Description
<code>my_file = open(<i>filepath</i>)</code>	Opens the file with given <i>filepath</i> for reading, returns a file object
<code>my_file.close()</code>	Closes file <code>my_file</code>
<code>with open(<i>filepath</i>) as <i>f</i>: # read file</code>	Opens the file with given <i>filepath</i> for reading via the file object <i>f</i> in the body of the “with” statement.
<code>str.strip()</code>	Given a string <code>str</code> , remove any trailing or ending whitespace.
<code>str.split([separator])</code>	Given a string <code>str</code> , splits the string on the optional separator (will split on spaces if no separator is given) and returns a list of separated strings.

```
# Process one line at a time:  
for line_of_text in my_file:  
    # process line_of_text
```

```
# Process entire file at once  
all_data_as_a_big_string = my_file.read()
```

Dictionaries

Function	Description
<code>my_dict = {} my_dict = dict()</code>	Creates a new, empty dictionary
<code>my_dict[key]</code>	Returns the value associated with the given <i>key</i> in <i>my_dict</i>
<code>del my_dict[key]</code>	Removes the <i>key</i> (and its associated value) from <i>my_dict</i>
<code>list(my_dict.keys())</code>	Returns a list of keys in <i>my_dict</i>
<code>list(my_dict.values())</code>	Returns a list of values in <i>my_dict</i>
<code>list(my_dict.items())</code>	Returns a list of tuples of the form (<i>key</i> , <i>value</i>)

```
# Process each key-value pair together:  
for key, value in my_dict.items():  
    # process key and value
```

```
# Process one key at a time  
for key in my_dict:  
    # use dictionary's key
```

Common Error Names

IndexError – Index out of range

KeyError – Key not found in dictionary

IndentationError – Invalid indentation

TypeError – Operation applied to invalid combination of types

ValueError – Function gets properly typed argument, but invalid value

SyntaxError – Invalid Python syntax

NameError – Variable name not found

FloatingPointError – Floating point operation fails

RuntimeError – Otherwise Unknown Error

