ISTA 350 Stack Worksheet Name:

Implement a class called `Stack` that has six methods. Each `Stack` instance will contain an instance variable called `_items` that you will use to implement the ADT. `_items` will be a Python list. The top of the stack will be `_items[-1]`. Therefore, the next Python data object to be inserted will be placed at the end of the list (appended).

- `__init__` initializes an empty stack.
- `push` places a new item on the top of the stack. It returns nothing.
- `pop` removes and returns the object at the top of the stack. If the stack is empty, it raises an `IndexError`.
- `peek` returns the object at the top of the stack. If the stack is empty, it raises an `IndexError`.
- `is_empty` returns `True` if the stack has no objects in it, `False` otherwise.
- `__len__` returns the number of objects in the stack.

Once you are done with your `Stack` class, write a function called `str_rev` that takes one string argument and returns the reverse of that string. The catch is that you must use a `Stack` instance to reverse the string. Write another function `paren_check` that uses a stack to make sure that the parentheses in a string are properly matched.