```
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/disjoint_set/disjoint_set.py
 Passed: 30,  Failed: 0
 Coverage: 100.0%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/disjoint_set/alternate_disjoint_set.py
 Passed: 23,  Failed: 0
 Coverage: 86.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/next_greater_element.py
 Passed: 3,  Failed: 0
 Coverage: 79.6%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/prefix_evaluation.py
 Passed: 12,  Failed: 0
 Coverage: 84.0%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/dijkstras_two_stack_algorithm.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/dijkstras_two_stack_algorithm.py: invalid syntax
(stack.py, line 16)
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_singly_linked_list.py: invalid syntax
(stack_with_singly_linked_list.py, line 11)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/infix_to_prefix_conversion.py
 Passed: 10,  Failed: 0
 Coverage: 88.6%
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_doubly_linked_list.py: invalid syntax
(stack_with_doubly_linked_list.py, line 11)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/balanced_parentheses.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/balanced_parentheses.py: invalid syntax (stack.py, line
16)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stock_span_problem.py
1 1 2 4 5 1  Passed: 6,  Failed: 0
 Coverage: 100.0%
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py: invalid syntax (stack.py, line 16)
```

```
 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/largest_rectangle_histogram.py
 Passed: 4,  Failed: 0
 Coverage: 86.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/infix_to_postfix_conversion.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/infix_to_postfix_conversion.py: invalid syntax (stack.py,
line 16)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/lexicographical_numbers.py
 Passed: 5,  Failed: 0
 Coverage: 80.0%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_using_two_queues.py
 Passed: 11,  Failed: 0
 Coverage: 37.8%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/postfix_evaluation.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/postfix_evaluation.py: unsupported operand type(s) for |:
'type' and 'type'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_tree_mirror.py
 Passed: 4,  Failed: 0
 Coverage: 81.0%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/flatten_binarytree_to_linkedlist.py
 Passed: 24,  Failed: 0
 Coverage: 89.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/wavelet_tree.py
 Passed: 26,  Failed: 0
 Coverage: 95.2%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/merge_two_binary_trees.py
 Passed: 16,  Failed: 0
 Coverage: 57.9%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/avl_tree.py
 Passed: 10,  Failed: 0
 Coverage: 74.0%
```

```
 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/treap.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/treap.py: No module named
'data_structures.binary_tree.trea'
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/non_recursive_segment_tree.py: invalid syntax
(non_recursive_segment_tree.py, line 47)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/mirror_binary_tree.py
 Passed: 15,  Failed: 0
 Coverage: 86.5%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/segment_tree_other.py
 Passed: 32,  Failed: 0
 Coverage: 79.2%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/is_sum_tree.py
 Passed: 21,  Failed: 0
 Coverage: 89.1%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/fenwick_tree.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/fenwick_tree.py: unsupported operand type(s) for |:
'types.GenericAlias' and 'NoneType'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_search_tree.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_search_tree.py: cannot import name 'Self'
from 'typing'
(/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/typing.py)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_tree_traversals.py
 Passed: 12,  Failed: 0
 Coverage: 81.4%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/red_black_tree.py
 Passed: 1,  Failed: 0
 Coverage: 77.1%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/floor_and_ceiling.py
 Passed: 12,  Failed: 0
```

```
 Coverage: 84.8%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_tree_path_sum.py
 Passed: 21,  Failed: 0
 Coverage: 90.3%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/symmetric_tree.py
 Passed: 18,  Failed: 0
 Coverage: 90.0%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/diff_views_of_binary_tree.py
 Passed: 9,  Failed: 0
 Coverage: 97.4%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/inorder_tree_traversal_2022.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/inorder_tree_traversal_2022.py: unsupported operand
type(s) for |: 'type' and 'NoneType'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/distribute_coins.py
 Passed: 6,  Failed: 0
 Coverage: 94.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/basic_binary_tree.py
 Passed: 12,  Failed: 0
 Coverage: 96.4%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/segment_tree.py
 Passed: 12,  Failed: 0
 Coverage: 76.3%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/lowest_common_ancestor.py
 Passed: 33,  Failed: 0
 Coverage: 71.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/diameter_of_binary_tree.py
 Passed: 14,  Failed: 0
 Coverage: 61.5%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/lazy_segment_tree.py
 Passed: 14,  Failed: 0
 Coverage: 43.2%
```

```
 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/serialize_deserialize_binary_tree.py
 Passed: 19,  Failed: 0
 Coverage: 93.0%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/maximum_fenwick_tree.py
 Passed: 21,  Failed: 0
 Coverage: 93.9%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_search_tree_recursive.py
 Passed: 57,  Failed: 0
 Coverage: 34.6%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/maximum_sum_bst.py
 Passed: 19,  Failed: 0
 Coverage: 92.6%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_tree_node_sum.py
 Passed: 11,  Failed: 0
 Coverage: 89.5%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/number_of_possible_binary_trees.py
 Passed: 8,  Failed: 0
 Coverage: 82.6%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/is_sorted.py
 Passed: 13,  Failed: 0
 Coverage: 65.5%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/merge_two_lists.py
 Passed: 12,  Failed: 0
 Coverage: 86.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/is_palindrome.py
 Passed: 16,  Failed: 0
 Coverage: 95.9%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/__init__.py
 Passed: 25,  Failed: 0
 Coverage: 95.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/middle_element_of_linked_list.py
 Passed: 14,  Failed: 0
```

```
 Coverage: 82.8%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/rotate_to_the_right.py
 Passed: 21,  Failed: 0
 Coverage: 76.2%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/from_sequence.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/from_sequence.py: unsupported operand type(s) for |:
'type' and 'type'
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/skip_list.py: invalid syntax (skip_list.py, line 16)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/circular_linked_list.py
 Passed: 1,  Failed: 0
 Coverage: 92.5%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/swap_nodes.py
 Passed: 38,  Failed: 0
 Coverage: 77.3%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/reverse_k_group.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/reverse_k_group.py: No module named
'data_structures.linked_list.reverse_k_grou'
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/doubly_linked_list_two.py: invalid syntax
(doubly_linked_list_two.py, line 19)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/floyds_cycle_detection.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/floyds_cycle_detection.py: cannot import name 'Self'
from 'typing'
(/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/typing.py)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/doubly_linked_list.py
 Passed: 35,  Failed: 0
 Coverage: 84.3%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/print_reverse.py
 Passed: 31,  Failed: 0
 Coverage: 87.2%
```

```
 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/deque_doubly.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/deque_doubly.py: No module named
'data_structures.linked_list.deque_doubl'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/has_loop.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/has_loop.py: No module named
'data_structures.linked_list.has_loo'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/singly_linked_list.py
 Passed: 118,  Failed: 0
 Coverage: 79.3%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/bloom_filter.py
 Passed: 19,  Failed: 0
 Coverage: 100.0%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_table.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_table.py: unsupported operand type(s) for |: 'type'
and 'NoneType'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/double_hash.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/double_hash.py: unsupported operand type(s) for |:
'type' and 'NoneType'
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_map.py: invalid syntax (hash_map.py, line 20)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/quadratic_probing.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/quadratic_probing.py: unsupported operand type(s) for |:
'type' and 'NoneType'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/number_theory/prime_numbers.py
 Passed: 9,  Failed: 0
 Coverage: 38.9%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/trie/radix_tree.py
```

```
 Passed: 9,  Failed: 0
 Coverage: 88.4%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/trie/trie.py
============================================================================= test
session starts
=============================================================================
platform darwin -- Python 3.9.18, pytest-7.1.3, pluggy-1.0.0
rootdir: /Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python, configfile: pyproject.toml
plugins: hypothesis-6.140.2, anyio-4.10.0
collected 251 items / 37 errors

================================================================================
== ERRORS
================================================================================
==
_____________________________________________________________ ERROR collecting
data_structures/arrays/product_sum.py
_____________________________________________________________
../../data_structures/arrays/product_sum.py:23: in <module>
    def product_sum(arr: list[int | list], depth: int) -> int:
E   TypeError: unsupported operand type(s) for |: 'type' and 'type'
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/__pycache__/product_sum.cpython-39.pyc'
        __doc__    = '\nCalculate the Product Sum from a Special Array.
\nreference: https://dev.to/sfrasica/algorithms-product-sum-from-an-..., [z]]],
\nthe product sum is x + 2 * (y + 3z).\n\nExample Input:\n[5, 2, [-7, 1], 3, [6,
[-13, 8], 4]]\nOutput: 12\n\n'
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/product_sum.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x10425e0d0>
        __name__   = 'data_structures.arrays.product_sum'
        __package__ = 'data_structures.arrays'
        __spec__   = ModuleSpec(name='data_structures.arrays.product_sum',
loader=<_frozen_importlib_external.SourceFileLoader object at
0x...in='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/arrays/product_sum.py')
_____________________________________________________________ ERROR collecting
data_structures/binary_tree/binary_search_tree.py
_____________________________________________________________
../../data_structures/binary_tree/binary_search_tree.py:96: in <module>
    from typing import Any, Self
E   ImportError: cannot import name 'Self' from 'typing'
(/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/typing.py)
        Any        = typing.Any
        Iterable   = <class 'collections.abc.Iterable'>
        Iterator   = <class 'collections.abc.Iterator'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/__pycache__/binary_search_tree.cpython-39.pyc'
        __doc__    = '\nA binary search Tree\n\nExample\n              8\n
/ \\\n            3   10\n           / \\    \\\n   ....empty()\nFalse\n>>> not
t\nFalse\n>>> for i in testlist:\n...     t.remove(i)\n>>> t.empty()\nTrue\n>>>
not t\nTrue\n'
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
```

```
data_structures/binary_tree/binary_search_tree.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x1042c5820>
        __name__   = 'data_structures.binary_tree.binary_search_tree'
        __package__ = 'data_structures.binary_tree'
        __spec__   =
ModuleSpec(name='data_structures.binary_tree.binary_search_tree',
loader=<_frozen_importlib_external.SourceFileLoader
...ohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_search_tree.py')
        annotations = _Feature((3, 7, 0, 'beta', 1), (3, 10, 0, 'alpha', 0),
16777216)
        dataclass  = <function dataclass at 0x102db55e0>
_____________________________________________________ ERROR collecting
data_structures/binary_tree/fenwick_tree.py
_____________________________________________________
../../data_structures/binary_tree/fenwick_tree.py:4: in <module>
    class FenwickTree:
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/__pycache__/fenwick_tree.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/fenwick_tree.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x10443f670>
        __name__   = 'data_structures.binary_tree.fenwick_tree'
        __package__ = 'data_structures.binary_tree'
        __spec__   = ModuleSpec(name='data_structures.binary_tree.fenwick_tree',
loader=<_frozen_importlib_external.SourceFileLoader
object...sers/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/binary_tree/fenwick_tree.py')
        deepcopy   = <function deepcopy at 0x102c27280>
../../data_structures/binary_tree/fenwick_tree.py:11: in FenwickTree
    def __init__(self, arr: list[int] | None = None, size: int | None = None) ->
None:
E   TypeError: unsupported operand type(s) for |: 'types.GenericAlias' and
'NoneType'
        __doc__    = '\n    Fenwick Tree\n\n    More info:
https://en.wikipedia.org/wiki/Fenwick_tree\n    '
        __module__ = 'data_structures.binary_tree.fenwick_tree'
        __qualname__ = 'FenwickTree'
_____________________________________________________ ERROR collecting
data_structures/binary_tree/inorder_tree_traversal_2022.py
_____________________________________________________
../../data_structures/binary_tree/inorder_tree_traversal_2022.py:17: in <module>
    def insert(node: BinaryTreeNode | None, new_value: int) -> BinaryTreeNode |
None:
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        BinaryTreeNode = <class
'data_structures.binary_tree.inorder_tree_traversal_2022.BinaryTreeNode'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/__pycache__/
inorder_tree_traversal_2022.cpython-39.pyc'
        __doc__    = '\nIllustrate how to implement inorder traversal in binary
search tree.\nAuthor: Gurneet Singh\nhttps://www.geeksforgeeks.org/tree-
traversals-inorder-preorder-and-postorder/\n'
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/inorder_tree_traversal_2022.py'
```

```
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x104463280>
        __name__   = 'data_structures.binary_tree.inorder_tree_traversal_2022'
        __package__ = 'data_structures.binary_tree'
        __spec__   =
ModuleSpec(name='data_structures.binary_tree.inorder_tree_traversal_2022',
loader=<_frozen_importlib_external.SourceFi...thil/Documents/rit-workspace/
swen-777/TheAlgorithms-Python/data_structures/binary_tree/
inorder_tree_traversal_2022.py')
_____________________________________________________ ERROR collecting
data_structures/binary_tree/non_recursive_segment_tree.py
_____________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.binary_tree.non_recursive_segment_tree'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.binary_tree.non_recursive_segment_tree'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.binary_tree.non_recursive_segment_tree'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.binary_tree.non_recursive_segment_tree'
        parent     = 'data_structures.binary_tree'
        parent_module = <module 'data_structures.binary_tree' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree']
        spec       =
ModuleSpec(name='data_structures.binary_tree.non_recursive_segment_tree',
loader=<_frozen_importlib_external.SourceFil...nthil/Documents/rit-workspace/
swen-777/TheAlgorithms-Python/data_structures/binary_tree/
non_recursive_segment_tree.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module
'data_structures.binary_tree.non_recursive_segment_tree' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/non_recursive_segment_tree.py'>
        spec       =
ModuleSpec(name='data_structures.binary_tree.non_recursive_segment_tree',
loader=<_frozen_importlib_external.SourceFil...nthil/Documents/rit-workspace/
swen-777/TheAlgorithms-Python/data_structures/binary_tree/
non_recursive_segment_tree.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module
'data_structures.binary_tree.non_recursive_segment_tree' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/non_recursive_segment_tree.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1044c6400>
<frozen importlib._bootstrap_external>:983: in get_code
```

```
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/__pycache__/
non_recursive_segment_tree.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.binary_tree.non_recursive_segment_tree'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1044c6400>
        source_bytes = b'"""\nA non-recursive Segment Tree implementation with
range query and single element update,\nworks virtually with a...
max_segment_tree.update(index, value)\n        sum_segment_tree.update(index,
value)\n        test_all_segments()\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/non_recursive_segment_tree.py'
        st         = {'mtime': 1756904091.58345, 'size': 4746}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'"""\nA non-recursive Segment Tree implementation with
range query and single element update,\nworks virtually with a...
max_segment_tree.update(index, value)\n        sum_segment_tree.update(index,
value)\n        test_all_segments()\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/non_recursive_segment_tree.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1044c6400>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/non_recursive_segment_tree.py", line 47
E       class SegmentTree[T]:
E                         ^
E   SyntaxError: invalid syntax
        args       = (b'"""\nA non-recursive Segment Tree implementation with
range query and single element update,\nworks virtually with ...cuments/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/binary_tree/
non_recursive_segment_tree.py', 'exec')
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/hashing/double_hash.py
_____________________________________________________
../../data_structures/hashing/double_hash.py:15: in <module>
    from .hash_table import HashTable
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__pycache__/double_hash.cpython-39.pyc'
        __doc__    = '\nDouble hashing is a collision resolving technique in
Open Addressed Hash tables.\nDouble hashing uses the idea of a... are hash
functions and TABLE_SIZE is size of hash table.\n\nReference:
https://en.wikipedia.org/wiki/Double_hashing\n'
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/double_hash.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x104561340>
```

```
        __name__   = 'data_structures.hashing.double_hash'
        __package__ = 'data_structures.hashing'
        __spec__   = ModuleSpec(name='data_structures.hashing.double_hash',
loader=<_frozen_importlib_external.SourceFileLoader object at
0...n='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/hashing/double_hash.py')
../../data_structures/hashing/hash_table.py:7: in <module>
    class HashTable:
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__pycache__/hash_table.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_table.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x104561730>
        __name__   = 'data_structures.hashing.hash_table'
        __package__ = 'data_structures.hashing'
        __spec__   = ModuleSpec(name='data_structures.hashing.hash_table',
loader=<_frozen_importlib_external.SourceFileLoader object at
0x...in='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/hashing/hash_table.py')
        abstractmethod = <function abstractmethod at 0x1022f8f70>
        next_prime = <function next_prime at 0x10454eaf0>
../../data_structures/hashing/hash_table.py:15: in HashTable
    charge_factor: int | None = None,
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        __doc__    = '\n    Basic Hash Table example with open addressing and
linear probing\n    '
        __module__ = 'data_structures.hashing.hash_table'
        __qualname__ = 'HashTable'
_____________________________________________________________ ERROR collecting
data_structures/hashing/hash_map.py
_____________________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.hashing.hash_map'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.hashing.hash_map'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.hashing.hash_map'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.hashing.hash_map'
        parent     = 'data_structures.hashing'
        parent_module = <module 'data_structures.hashing' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing']
        spec       = ModuleSpec(name='data_structures.hashing.hash_map',
```

```
loader=<_frozen_importlib_external.SourceFileLoader object at
0x10...igin='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/
TheAlgorithms-Python/data_structures/hashing/hash_map.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module 'data_structures.hashing.hash_map' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_map.py'>
        spec       = ModuleSpec(name='data_structures.hashing.hash_map',
loader=<_frozen_importlib_external.SourceFileLoader object at
0x10...igin='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/
TheAlgorithms-Python/data_structures/hashing/hash_map.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module 'data_structures.hashing.hash_map' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_map.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10457f460>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__pycache__/hash_map.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.hashing.hash_map'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10457f460>
        source_bytes = b'"""\nHash map with open
addressing.\n\nhttps://en.wikipedia.org/wiki/Hash_table\n\nAnother hash map
implementation, ...        return f"HashMap({val_string})"\n\n\nif __name__ ==
"__main__":\n    import doctest\n\n    doctest.testmod()\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_map.py'
        st         = {'mtime': 1756904091.5865076, 'size': 8730}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'"""\nHash map with open
addressing.\n\nhttps://en.wikipedia.org/wiki/Hash_table\n\nAnother hash map
implementation, ...        return f"HashMap({val_string})"\n\n\nif __name__ ==
"__main__":\n    import doctest\n\n    doctest.testmod()\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_map.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10457f460>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_map.py", line 20
E       class _Item[KEY, VAL]:
E                   ^
E   SyntaxError: invalid syntax
        args       = (b'"""\nHash map with open
addressing.\n\nhttps://en.wikipedia.org/wiki/Hash_table\n\nAnother hash map
implementation,...sers/rohinivsenthil/Documents/rit-workspace/swen-777/
TheAlgorithms-Python/data_structures/hashing/hash_map.py', 'exec')
        f          = <built-in function compile>
```

```
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/hashing/hash_table.py
_____________________________________________________
../../data_structures/hashing/hash_table.py:7: in <module>
    class HashTable:
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__pycache__/hash_table.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_table.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x10456fc40>
        __name__   = 'data_structures.hashing.hash_table'
        __package__ = 'data_structures.hashing'
        __spec__   = ModuleSpec(name='data_structures.hashing.hash_table',
loader=<_frozen_importlib_external.SourceFileLoader object at
0x...in='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/hashing/hash_table.py')
        abstractmethod = <function abstractmethod at 0x1022f8f70>
        next_prime = <function next_prime at 0x10454eaf0>
../../data_structures/hashing/hash_table.py:15: in HashTable
    charge_factor: int | None = None,
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        __doc__    = '\n    Basic Hash Table example with open addressing and
linear probing\n    '
        __module__ = 'data_structures.hashing.hash_table'
        __qualname__ = 'HashTable'
_____________________________________________________ ERROR collecting
data_structures/hashing/hash_table_with_linked_list.py
_____________________________________________________
../../data_structures/hashing/hash_table_with_linked_list.py:3: in <module>
    from .hash_table import HashTable
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__pycache__/hash_table_with_linked_list.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_table_with_linked_list.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x10457a4c0>
        __name__   = 'data_structures.hashing.hash_table_with_linked_list'
        __package__ = 'data_structures.hashing'
        __spec__   =
ModuleSpec(name='data_structures.hashing.hash_table_with_linked_list',
loader=<_frozen_importlib_external.SourceFileLo...vsenthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/hashing/
hash_table_with_linked_list.py')
        deque      = <class 'collections.deque'>
../../data_structures/hashing/hash_table.py:7: in <module>
    class HashTable:
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__pycache__/hash_table.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_table.py'
```

```
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x10457a850>
        __name__   = 'data_structures.hashing.hash_table'
        __package__ = 'data_structures.hashing'
        __spec__   = ModuleSpec(name='data_structures.hashing.hash_table',
loader=<_frozen_importlib_external.SourceFileLoader object at
0x...in='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/hashing/hash_table.py')
        abstractmethod = <function abstractmethod at 0x1022f8f70>
        next_prime = <function next_prime at 0x10454eaf0>
../../data_structures/hashing/hash_table.py:15: in HashTable
    charge_factor: int | None = None,
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        __doc__    = '\n    Basic Hash Table example with open addressing and
linear probing\n    '
        __module__ = 'data_structures.hashing.hash_table'
        __qualname__ = 'HashTable'
_____________________________________________________ ERROR collecting
data_structures/hashing/quadratic_probing.py
_____________________________________________________
../../data_structures/hashing/quadratic_probing.py:3: in <module>
    from .hash_table import HashTable
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__pycache__/quadratic_probing.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/quadratic_probing.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x104593460>
        __name__   = 'data_structures.hashing.quadratic_probing'
        __package__ = 'data_structures.hashing'
        __spec__   =
ModuleSpec(name='data_structures.hashing.quadratic_probing',
loader=<_frozen_importlib_external.SourceFileLoader
objec...ers/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/hashing/quadratic_probing.py')
../../data_structures/hashing/hash_table.py:7: in <module>
    class HashTable:
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__pycache__/hash_table.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_table.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x104593910>
        __name__   = 'data_structures.hashing.hash_table'
        __package__ = 'data_structures.hashing'
        __spec__   = ModuleSpec(name='data_structures.hashing.hash_table',
loader=<_frozen_importlib_external.SourceFileLoader object at
0x...in='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/hashing/hash_table.py')
        abstractmethod = <function abstractmethod at 0x1022f8f70>
        next_prime = <function next_prime at 0x10454eaf0>
../../data_structures/hashing/hash_table.py:15: in HashTable
    charge_factor: int | None = None,
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        __doc__    = '\n    Basic Hash Table example with open addressing and
linear probing\n    '
```

```
        __module__ = 'data_structures.hashing.hash_table'
        __qualname__ = 'HashTable'
_____________________________________________________ ERROR collecting
data_structures/hashing/tests/test_hash_map.py
_____________________________________________________
../../data_structures/hashing/tests/test_hash_map.py:5: in <module>
    from data_structures.hashing.hash_map import HashMap
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_map.py", line 20
E       class _Item[KEY, VAL]:
E                  ^
E   SyntaxError: invalid syntax
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/tests/__pycache__/test_hash_map.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/tests/test_hash_map.py'
        __loader__ = <_pytest.assertion.rewrite.AssertionRewritingHook object at
0x103c7e0d0>
        __name__   = 'data_structures.hashing.tests.test_hash_map'
        __package__ = 'data_structures.hashing.tests'
        __spec__   =
ModuleSpec(name='data_structures.hashing.tests.test_hash_map',
loader=<_pytest.assertion.rewrite.AssertionRewritingHoo...s/rohinivsenthil/
Documents/rit-workspace/swen-777/TheAlgorithms-Python/data_structures/hashing/
tests/test_hash_map.py')
        delitem    = <built-in function delitem>
        getitem    = <built-in function getitem>
        pytest     = <module 'pytest' from
'/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/site-
packages/pytest/__init__.py'>
        setitem    = <built-in function setitem>
_____________________________________________________ ERROR collecting
data_structures/hashing/tests/test_hash_map.py
_____________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/site-packages/
_pytest/python.py:608: in _importtestmodule
    mod = import_path(self.path, mode=importmode, root=self.config.rootpath)
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/site-packages/
_pytest/pathlib.py:533: in import_path
    importlib.import_module(module_name)
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/site-packages/
_pytest/assertion/rewrite.py:168: in exec_module
    exec(co, module.__dict__)
../../data_structures/hashing/tests/test_hash_map.py:5: in <module>
    from data_structures.hashing.hash_map import HashMap
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_map.py", line 20
```

```
E       class _Item[KEY, VAL]:
E                   ^
E   SyntaxError: invalid syntax
_____________________________________________________________ ERROR collecting
data_structures/heap/heap.py
_____________________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.heap.heap'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.heap.heap'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.heap.heap'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.heap.heap'
        parent     = 'data_structures.heap'
        parent_module = <module 'data_structures.heap' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap']
        spec       = ModuleSpec(name='data_structures.heap.heap',
loader=<_frozen_importlib_external.SourceFileLoader object at 0x10504b520>,
origin='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/heap/heap.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module 'data_structures.heap.heap' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py'>
        spec       = ModuleSpec(name='data_structures.heap.heap',
loader=<_frozen_importlib_external.SourceFileLoader object at 0x10504b520>,
origin='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/heap/heap.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module 'data_structures.heap.heap' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10504b520>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/__pycache__/heap.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.heap.heap'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10504b520>
        source_bytes = b'from __future__ import annotations\n\nfrom abc import
```

```
abstractmethod\nfrom collections.abc import Iterable\nfrom typ...f"after new
value 100 inserted: {heap}")\n\n        heap.heap_sort()\n        print(f"heap-
sorted array: {heap}\\n")\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py'
        st          = {'mtime': 1756904091.5887065, 'size': 7390}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'from __future__ import annotations\n\nfrom abc import
abstractmethod\nfrom collections.abc import Iterable\nfrom typ...f"after new
value 100 inserted: {heap}")\n\n        heap.heap_sort()\n        print(f"heap-
sorted array: {heap}\\n")\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10504b520>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py", line 25
E       class Heap[T: Comparable]:
E                  ^
E   SyntaxError: invalid syntax
        args       = (b'from __future__ import annotations\n\nfrom abc import
abstractmethod\nfrom collections.abc import Iterable\nfrom ty...n',
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py', 'exec')
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________________ ERROR collecting
data_structures/heap/heap_edge_tests.py
_____________________________________________________________
../../data_structures/heap/heap_edge_tests.py:2: in <module>
    from data_structures.heap.heap import Heap
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py", line 25
E       class Heap[T: Comparable]:
E                  ^
E   SyntaxError: invalid syntax
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/__pycache__/heap_edge_tests.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap_edge_tests.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x104606370>
        __name__   = 'data_structures.heap.heap_edge_tests'
        __package__ = 'data_structures.heap'
        __spec__   = ModuleSpec(name='data_structures.heap.heap_edge_tests',
loader=<_frozen_importlib_external.SourceFileLoader object at
...='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/heap/heap_edge_tests.py')
        pytest     = <module 'pytest' from
'/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/site-
```

```
packages/pytest/__init__.py'>
_____ ERROR collecting
data_structures/heap/heap_generic.py
_____
../../data_structures/heap/heap_generic.py:4: in <module>
    class Heap:
        Callable   = <class 'collections.abc.Callable'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/__pycache__/heap_generic.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap_generic.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x104554a30>
        __name__   = 'data_structures.heap.heap_generic'
        __package__ = 'data_structures.heap'
        __spec__   = ModuleSpec(name='data_structures.heap.heap_generic',
loader=<_frozen_importlib_external.SourceFileLoader object at
0x1...gin='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/heap/heap_generic.py')
../../data_structures/heap/heap_generic.py:10: in Heap
    def __init__(self, key: Callable | None = None) -> None:
E   TypeError: unsupported operand type(s) for |: 'ABCMeta' and 'NoneType'
        __doc__    = '\n    A generic Heap class, can be used as min or max by
passing the key function\n    accordingly.\n    '
        __module__ = 'data_structures.heap.heap_generic'
        __qualname__ = 'Heap'
_____ ERROR collecting
data_structures/heap/randomized_heap.py
_____
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.heap.randomized_heap'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.heap.randomized_heap'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.heap.randomized_heap'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.heap.randomized_heap'
        parent     = 'data_structures.heap'
        parent_module = <module 'data_structures.heap' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap']
        spec       = ModuleSpec(name='data_structures.heap.randomized_heap',
loader=<_frozen_importlib_external.SourceFileLoader object at
...='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/heap/randomized_heap.py')
```

```
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module 'data_structures.heap.randomized_heap' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/randomized_heap.py'>
        spec       = ModuleSpec(name='data_structures.heap.randomized_heap',
loader=<_frozen_importlib_external.SourceFileLoader object at
...='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/heap/randomized_heap.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module 'data_structures.heap.randomized_heap' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/randomized_heap.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x104619f70>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/__pycache__/randomized_heap.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.heap.randomized_heap'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x104619f70>
        source_bytes = b'#!/usr/bin/env python3\n\nfrom __future__ import
annotations\n\nimport random\nfrom collections.abc import Iterable\...\n
return self._root is not None\n\n\nif __name__ == "__main__":\n    import
doctest\n\n    doctest.testmod()\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/randomized_heap.py'
        st         = {'mtime': 1756904091.589705, 'size': 5297}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'#!/usr/bin/env python3\n\nfrom __future__ import
annotations\n\nimport random\nfrom collections.abc import Iterable\...\n
return self._root is not None\n\n\nif __name__ == "__main__":\n    import
doctest\n\n    doctest.testmod()\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/randomized_heap.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x104619f70>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/randomized_heap.py", line 12
E       class RandomizedHeapNode[T: bool]:
E                                ^
E   SyntaxError: invalid syntax
        args       = (b'#!/usr/bin/env python3\n\nfrom __future__ import
annotations\n\nimport random\nfrom collections.abc import
Iterable.../rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/heap/randomized_heap.py', 'exec')
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________________ ERROR collecting
data_structures/heap/skew_heap.py
```

```
_____________________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.heap.skew_heap'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.heap.skew_heap'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.heap.skew_heap'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.heap.skew_heap'
        parent     = 'data_structures.heap'
        parent_module = <module 'data_structures.heap' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap']
        spec       = ModuleSpec(name='data_structures.heap.skew_heap',
loader=<_frozen_importlib_external.SourceFileLoader object at
0x1046...origin='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/
TheAlgorithms-Python/data_structures/heap/skew_heap.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module 'data_structures.heap.skew_heap' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/skew_heap.py'>
        spec       = ModuleSpec(name='data_structures.heap.skew_heap',
loader=<_frozen_importlib_external.SourceFileLoader object at
0x1046...origin='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/
TheAlgorithms-Python/data_structures/heap/skew_heap.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module 'data_structures.heap.skew_heap' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/skew_heap.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1046750d0>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/__pycache__/skew_heap.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.heap.skew_heap'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1046750d0>
        source_bytes = b'#!/usr/bin/env python3\n\nfrom __future__ import
annotations\n\nfrom collections.abc import Iterable, Iterator\nfrom...n
"""\n        self._root = None\n\n\nif __name__ == "__main__":\n    import
doctest\n\n    doctest.testmod()\n'
        source_hash = None
        source_mtime = 1756904091
```

```
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/skew_heap.py'
        st          = {'mtime': 1756904091.5901415, 'size': 5632}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'#!/usr/bin/env python3\n\nfrom __future__ import
annotations\n\nfrom collections.abc import Iterable, Iterator\nfrom...n
"""\n        self._root = None\n\n\nif __name__ == "__main__":\n    import
doctest\n\n    doctest.testmod()\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/skew_heap.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1046750d0>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/skew_heap.py", line 11
E       class SkewNode[T: bool]:
E                      ^
E   SyntaxError: invalid syntax
        args       = (b'#!/usr/bin/env python3\n\nfrom __future__ import
annotations\n\nfrom collections.abc import Iterable,
Iterator\nfro.../Users/rohinivsenthil/Documents/rit-workspace/swen-777/
TheAlgorithms-Python/data_structures/heap/skew_heap.py', 'exec')
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/kd_tree/build_kdtree.py
_____________________________________________________
../../data_structures/kd_tree/build_kdtree.py:12: in <module>
    def build_kdtree(points: list[list[float]], depth: int = 0) -> KDNode |
None:
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        KDNode     = <class 'data_structures.kd_tree.kd_node.KDNode'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/__pycache__/build_kdtree.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/build_kdtree.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x104614ac0>
        __name__   = 'data_structures.kd_tree.build_kdtree'
        __package__ = 'data_structures.kd_tree'
        __spec__   = ModuleSpec(name='data_structures.kd_tree.build_kdtree',
loader=<_frozen_importlib_external.SourceFileLoader object at
...='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/kd_tree/build_kdtree.py')
_____________________________________________ ERROR collecting
data_structures/kd_tree/nearest_neighbour_search.py
_____________________________________________
../../data_structures/kd_tree/nearest_neighbour_search.py:13: in <module>
    root: KDNode | None, query_point: list[float]
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        KDNode     = <class 'data_structures.kd_tree.kd_node.KDNode'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
```

```
data_structures/kd_tree/__pycache__/nearest_neighbour_search.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/nearest_neighbour_search.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x105066e50>
        __name__   = 'data_structures.kd_tree.nearest_neighbour_search'
        __package__ = 'data_structures.kd_tree'
        __spec__   =
ModuleSpec(name='data_structures.kd_tree.nearest_neighbour_search',
loader=<_frozen_importlib_external.SourceFileLoade...inivsenthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/kd_tree/
nearest_neighbour_search.py')
_____________________________________________________ ERROR collecting
data_structures/kd_tree/example/example_usage.py
_____________________________________________________
../../data_structures/kd_tree/example/example_usage.py:11: in <module>
    from data_structures.kd_tree.build_kdtree import build_kdtree
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/example/__pycache__/example_usage.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/example/example_usage.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x1046eac10>
        __name__   = 'data_structures.kd_tree.example.example_usage'
        __package__ = 'data_structures.kd_tree.example'
        __spec__   =
ModuleSpec(name='data_structures.kd_tree.example.example_usage',
loader=<_frozen_importlib_external.SourceFileLoader
o...rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/example/example_usage.py')
        np         = <module 'numpy' from
'/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/site-
packages/numpy/__init__.py'>
../../data_structures/kd_tree/build_kdtree.py:12: in <module>
    def build_kdtree(points: list[list[float]], depth: int = 0) -> KDNode |
None:
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        KDNode     = <class 'data_structures.kd_tree.kd_node.KDNode'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/__pycache__/build_kdtree.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/build_kdtree.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x10526e5b0>
        __name__   = 'data_structures.kd_tree.build_kdtree'
        __package__ = 'data_structures.kd_tree'
        __spec__   = ModuleSpec(name='data_structures.kd_tree.build_kdtree',
loader=<_frozen_importlib_external.SourceFileLoader object at
...='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/kd_tree/build_kdtree.py')
_____________________________________________________ ERROR collecting
data_structures/kd_tree/tests/test_kdtree.py
_____________________________________________________
../../data_structures/kd_tree/tests/test_kdtree.py:12: in <module>
```

```
    from data_structures.kd_tree.build_kdtree import build_kdtree
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/tests/__pycache__/test_kdtree.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/tests/test_kdtree.py'
        __loader__ = <_pytest.assertion.rewrite.AssertionRewritingHook object at
0x103c7e0d0>
        __name__   = 'data_structures.kd_tree.tests.test_kdtree'
        __package__ = 'data_structures.kd_tree.tests'
        __spec__   =
ModuleSpec(name='data_structures.kd_tree.tests.test_kdtree',
loader=<_pytest.assertion.rewrite.AssertionRewritingHook
...ers/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/tests/test_kdtree.py')
        np         = <module 'numpy' from
'/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/site-
packages/numpy/__init__.py'>
        pytest     = <module 'pytest' from
'/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/site-
packages/pytest/__init__.py'>
../../data_structures/kd_tree/build_kdtree.py:12: in <module>
    def build_kdtree(points: list[list[float]], depth: int = 0) -> KDNode |
None:
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        KDNode     = <class 'data_structures.kd_tree.kd_node.KDNode'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/__pycache__/build_kdtree.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/build_kdtree.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x105287e20>
        __name__   = 'data_structures.kd_tree.build_kdtree'
        __package__ = 'data_structures.kd_tree'
        __spec__   = ModuleSpec(name='data_structures.kd_tree.build_kdtree',
loader=<_frozen_importlib_external.SourceFileLoader object at
...='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/kd_tree/build_kdtree.py')
_____________________________________________________ ERROR collecting
data_structures/kd_tree/tests/test_kdtree.py
_____________________________________________________
../../data_structures/kd_tree/tests/test_kdtree.py:12: in <module>
    from data_structures.kd_tree.build_kdtree import build_kdtree
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/tests/__pycache__/test_kdtree.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/tests/test_kdtree.py'
        __loader__ = <_pytest.assertion.rewrite.AssertionRewritingHook object at
0x103c7e0d0>
        __name__   = 'data_structures.kd_tree.tests.test_kdtree'
        __package__ = 'data_structures.kd_tree.tests'
        __spec__   =
ModuleSpec(name='data_structures.kd_tree.tests.test_kdtree',
```

```
loader=<_pytest.assertion.rewrite.AssertionRewritingHook
...ers/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/tests/test_kdtree.py')
        np         = <module 'numpy' from
'/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/site-
packages/numpy/__init__.py'>
        pytest     = <module 'pytest' from
'/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/site-
packages/pytest/__init__.py'>
../../data_structures/kd_tree/build_kdtree.py:12: in <module>
    def build_kdtree(points: list[list[float]], depth: int = 0) -> KDNode |
None:
E   TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
        KDNode     = <class 'data_structures.kd_tree.kd_node.KDNode'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/__pycache__/build_kdtree.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/build_kdtree.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x105298b50>
        __name__   = 'data_structures.kd_tree.build_kdtree'
        __package__ = 'data_structures.kd_tree'
        __spec__   = ModuleSpec(name='data_structures.kd_tree.build_kdtree',
loader=<_frozen_importlib_external.SourceFileLoader object at
...='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/kd_tree/build_kdtree.py')
_____ ERROR collecting
data_structures/linked_list/doubly_linked_list_two.py
_____
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.linked_list.doubly_linked_list_two'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.linked_list.doubly_linked_list_two'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.linked_list.doubly_linked_list_two'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.linked_list.doubly_linked_list_two'
        parent     = 'data_structures.linked_list'
        parent_module = <module 'data_structures.linked_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list']
        spec       =
ModuleSpec(name='data_structures.linked_list.doubly_linked_list_two',
loader=<_frozen_importlib_external.SourceFileLoa...ivsenthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/linked_list/
```

```
doubly_linked_list_two.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module
'data_structures.linked_list.doubly_linked_list_two' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/doubly_linked_list_two.py'>
        spec       =
ModuleSpec(name='data_structures.linked_list.doubly_linked_list_two',
loader=<_frozen_importlib_external.SourceFileLoa...ivsenthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/linked_list/
doubly_linked_list_two.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module
'data_structures.linked_list.doubly_linked_list_two' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/doubly_linked_list_two.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1052cc940>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/__pycache__/doubly_linked_list_two.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.linked_list.doubly_linked_list_two'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1052cc940>
        source_bytes = b'"""\n- A linked list is similar to an array, it holds
values. However, links in a linked\n    list do not have index..._list)\n
\'30 10 40 20 50\'\n    """\n\n\nif __name__ == "__main__":\n    import
doctest\n\n    doctest.testmod()\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/doubly_linked_list_two.py'
        st         = {'mtime': 1756904091.5932815, 'size': 6906}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'"""\n- A linked list is similar to an array, it holds
values. However, links in a linked\n    list do not have index..._list)\n
\'30 10 40 20 50\'\n    """\n\n\nif __name__ == "__main__":\n    import
doctest\n\n    doctest.testmod()\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/doubly_linked_list_two.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1052cc940>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/doubly_linked_list_two.py", line 19
E       class Node[DataType]:
E                 ^
E   SyntaxError: invalid syntax
        args       = (b'"""\n- A linked list is similar to an array, it holds
values. However, links in a linked\n    list do not have inde...l/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/linked_list/
doubly_linked_list_two.py', 'exec')
```

```
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/linked_list/floyds_cycle_detection.py
_____________________________________________________
../../data_structures/linked_list/floyds_cycle_detection.py:15: in <module>
    from typing import Any, Self
E   ImportError: cannot import name 'Self' from 'typing'
(/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/typing.py)
        Any        = typing.Any
        Iterator   = <class 'collections.abc.Iterator'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/__pycache__/floyds_cycle_detection.cpython-39.pyc'
        __doc__    = "\nFloyd's cycle detection algorithm is a popular algorithm
used to detect cycles\nin a linked list. It uses two point...thm will terminate.
\n\nFor more information:
https://en.wikipedia.org/wiki/Cycle_detection#Floyd's_tortoise_and_hare\n"
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/floyds_cycle_detection.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x1052d9610>
        __name__   = 'data_structures.linked_list.floyds_cycle_detection'
        __package__ = 'data_structures.linked_list'
        __spec__   =
ModuleSpec(name='data_structures.linked_list.floyds_cycle_detection',
loader=<_frozen_importlib_external.SourceFileLoa...ivsenthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/linked_list/
floyds_cycle_detection.py')
        dataclass  = <function dataclass at 0x102db55e0>
_____________________________________________________ ERROR collecting
data_structures/linked_list/from_sequence.py
_____________________________________________________
../../data_structures/linked_list/from_sequence.py:23: in <module>
    def make_linked_list(elements_list: list | tuple) -> Node:
E   TypeError: unsupported operand type(s) for |: 'type' and 'type'
        Node       = <class 'data_structures.linked_list.from_sequence.Node'>
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/__pycache__/from_sequence.cpython-39.pyc'
        __doc__    = '\nRecursive Program to create a Linked List from a
sequence and\nprint a string representation of it.\n'
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/from_sequence.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x1052cca90>
        __name__   = 'data_structures.linked_list.from_sequence'
        __package__ = 'data_structures.linked_list'
        __spec__   =
ModuleSpec(name='data_structures.linked_list.from_sequence',
loader=<_frozen_importlib_external.SourceFileLoader
objec...ers/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/linked_list/from_sequence.py')
_____________________________________________________ ERROR collecting
data_structures/linked_list/skip_list.py
_____________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
```

```
        name       = 'data_structures.linked_list.skip_list'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.linked_list.skip_list'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.linked_list.skip_list'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.linked_list.skip_list'
        parent     = 'data_structures.linked_list'
        parent_module = <module 'data_structures.linked_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list']
        spec       = ModuleSpec(name='data_structures.linked_list.skip_list',
loader=<_frozen_importlib_external.SourceFileLoader object
at...'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/linked_list/skip_list.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module 'data_structures.linked_list.skip_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/skip_list.py'>
        spec       = ModuleSpec(name='data_structures.linked_list.skip_list',
loader=<_frozen_importlib_external.SourceFileLoader object
at...'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/linked_list/skip_list.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module 'data_structures.linked_list.skip_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/skip_list.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10534d520>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/__pycache__/skip_list.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.linked_list.skip_list'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10534d520>
        source_bytes = b'"""\nBased on "Skip Lists: A Probabilistic Alternative
to Balanced Trees" by William Pugh\nhttps://epaperpress.com/s...(4)\n\n
print(skip_list)\n\n\nif __name__ == "__main__":\n    import doctest\n\n
doctest.testmod()\n    main()\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/skip_list.py'
        st         = {'mtime': 1756904091.5955348, 'size': 12601}
<frozen importlib._bootstrap_external>:913: in source_to_code
```

```
    ???
        _optimize  = -1
        data       = b'"""\nBased on "Skip Lists: A Probabilistic Alternative to
Balanced Trees" by William Pugh\nhttps://epaperpress.com/s...(4)\n\n
print(skip_list)\n\n\nif __name__ == "__main__":\n    import doctest\n\n
doctest.testmod()\n    main()\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/skip_list.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10534d520>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/skip_list.py", line 16
E       class Node[KT, VT]:
E                 ^
E   SyntaxError: invalid syntax
        args       = (b'"""\nBased on "Skip Lists: A Probabilistic Alternative
to Balanced Trees" by William
Pugh\nhttps://epaperpress.com/...rohinivsenthil/Documents/rit-workspace/
swen-777/TheAlgorithms-Python/data_structures/linked_list/skip_list.py', 'exec')
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/queues/queue_by_list.py
_____________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.queues.queue_by_list'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.queues.queue_by_list'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.queues.queue_by_list'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.queues.queue_by_list'
        parent     = 'data_structures.queues'
        parent_module = <module 'data_structures.queues' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues']
        spec       = ModuleSpec(name='data_structures.queues.queue_by_list',
loader=<_frozen_importlib_external.SourceFileLoader object at
...='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/queues/queue_by_list.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module 'data_structures.queues.queue_by_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_list.py'>
```

```
        spec       = ModuleSpec(name='data_structures.queues.queue_by_list',
loader=<_frozen_importlib_external.SourceFileLoader object at
...='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/queues/queue_by_list.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module 'data_structures.queues.queue_by_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_list.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1053afd60>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/__pycache__/queue_by_list.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.queues.queue_by_list'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1053afd60>
        source_bytes = b'"""Queue represented by a Python list"""\n\nfrom
collections.abc import Iterable\n\n\nclass QueueByList[T]:\n    def...\n\n
return self.entries[0]\n\n\nif __name__ == "__main__":\n    from doctest import
testmod\n\n    testmod()\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_list.py'
        st         = {'mtime': 1756904091.59729, 'size': 3037}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'"""Queue represented by a Python list"""\n\nfrom
collections.abc import Iterable\n\n\nclass QueueByList[T]:\n    def...\n\n
return self.entries[0]\n\n\nif __name__ == "__main__":\n    from doctest import
testmod\n\n    testmod()\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_list.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x1053afd60>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_list.py", line 6
E       class QueueByList[T]:
E                         ^
E   SyntaxError: invalid syntax
        args       = (b'"""Queue represented by a Python list"""\n\nfrom
collections.abc import Iterable\n\n\nclass QueueByList[T]:\n
de.../rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_list.py', 'exec')
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/queues/queue_by_two_stacks.py
_____________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
```

```
        name       = 'data_structures.queues.queue_by_two_stacks'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.queues.queue_by_two_stacks'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.queues.queue_by_two_stacks'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.queues.queue_by_two_stacks'
        parent     = 'data_structures.queues'
        parent_module = <module 'data_structures.queues' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues']
        spec       =
ModuleSpec(name='data_structures.queues.queue_by_two_stacks',
loader=<_frozen_importlib_external.SourceFileLoader
obje...rs/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_two_stacks.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module 'data_structures.queues.queue_by_two_stacks' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_two_stacks.py'>
        spec       =
ModuleSpec(name='data_structures.queues.queue_by_two_stacks',
loader=<_frozen_importlib_external.SourceFileLoader
obje...rs/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_two_stacks.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module 'data_structures.queues.queue_by_two_stacks' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_two_stacks.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x105736b20>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/__pycache__/queue_by_two_stacks.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.queues.queue_by_two_stacks'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x105736b20>
        source_bytes = b'"""Queue implementation using two stacks"""\n\nfrom
collections.abc import Iterable\n\n\nclass QueueByTwoStacks[T]:\...n
return self._stack2.pop()\n\n\nif __name__ == "__main__":\n    from doctest
import testmod\n\n    testmod()\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_two_stacks.py'
```

```
        st         = {'mtime': 1756904091.597442, 'size': 2614}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'"""Queue implementation using two stacks"""\n\nfrom
collections.abc import Iterable\n\n\nclass QueueByTwoStacks[T]:\...n
return self._stack2.pop()\n\n\nif __name__ == "__main__":\n    from doctest
import testmod\n\n    testmod()\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_two_stacks.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x105736b20>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_two_stacks.py", line 6
E       class QueueByTwoStacks[T]:
E                              ^
E   SyntaxError: invalid syntax
        args       = (b'"""Queue implementation using two stacks"""\n\nfrom
collections.abc import Iterable\n\n\nclass
QueueByTwoStacks[T]:...ivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/queues/queue_by_two_stacks.py', 'exec')
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/stacks/balanced_parentheses.py
_____________________________________________________
../../data_structures/stacks/balanced_parentheses.py:1: in <module>
    from .stack import Stack
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py", line 16
E       class Stack[T]:
E                   ^
E   SyntaxError: invalid syntax
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/balanced_parentheses.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/balanced_parentheses.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x105738a30>
        __name__   = 'data_structures.stacks.balanced_parentheses'
        __package__ = 'data_structures.stacks'
        __spec__   =
ModuleSpec(name='data_structures.stacks.balanced_parentheses',
loader=<_frozen_importlib_external.SourceFileLoader
obj...s/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/balanced_parentheses.py')
_____________________________________________________ ERROR collecting
data_structures/stacks/dijkstras_two_stack_algorithm.py
_____________________________________________________
../../data_structures/stacks/dijkstras_two_stack_algorithm.py:37: in <module>
    from .stack import Stack
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py", line 16
E       class Stack[T]:
```

```
E                   ^
E   SyntaxError: invalid syntax
        __author__ = 'Alexander Joslin'
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/dijkstras_two_stack_algorithm.cpython-39.pyc'
        __doc__    = '\nAuthor: Alexander Joslin\nGitHub:
github.com/echoaj\n\nExplanation:  https://medium.com/@haleesammar/implemented-
in...t on\n        the operand stack represents the value of the expression.
\n\nNOTE:   It only works with whole numbers.\n'
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/dijkstras_two_stack_algorithm.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x1057431f0>
        __name__   = 'data_structures.stacks.dijkstras_two_stack_algorithm'
        __package__ = 'data_structures.stacks'
        __spec__   =
ModuleSpec(name='data_structures.stacks.dijkstras_two_stack_algorithm',
loader=<_frozen_importlib_external.SourceFileL...senthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/stacks/
dijkstras_two_stack_algorithm.py')
        op         = <module 'operator' from
'/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/operator.py'>
_____________________________________________________ ERROR collecting
data_structures/stacks/infix_to_postfix_conversion.py
_____________________________________________________
../../data_structures/stacks/infix_to_postfix_conversion.py:9: in <module>
    from .balanced_parentheses import balanced_parentheses
        Literal    = typing.Literal
        __annotations__ = {}
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/infix_to_postfix_conversion.cpython-39.pyc'
        __doc__    =
'\nhttps://en.wikipedia.org/wiki/Infix_notation\nhttps://en.wikipedia.org/wiki/
Reverse_Polish_notation\nhttps://en.wikipedia.org/wiki/Shunting-
yard_algorithm\n'
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/infix_to_postfix_conversion.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x10575b8e0>
        __name__   = 'data_structures.stacks.infix_to_postfix_conversion'
        __package__ = 'data_structures.stacks'
        __spec__   =
ModuleSpec(name='data_structures.stacks.infix_to_postfix_conversion',
loader=<_frozen_importlib_external.SourceFileLoa...ivsenthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/stacks/
infix_to_postfix_conversion.py')
../../data_structures/stacks/balanced_parentheses.py:1: in <module>
    from .stack import Stack
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py", line 16
E       class Stack[T]:
E                   ^
E   SyntaxError: invalid syntax
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/balanced_parentheses.cpython-39.pyc'
```

```
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/balanced_parentheses.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x10575b760>
        __name__   = 'data_structures.stacks.balanced_parentheses'
        __package__ = 'data_structures.stacks'
        __spec__   =
ModuleSpec(name='data_structures.stacks.balanced_parentheses',
loader=<_frozen_importlib_external.SourceFileLoader
obj...s/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/balanced_parentheses.py')
_____________________________________________________ ERROR collecting
data_structures/stacks/postfix_evaluation.py
_____________________________________________________
../../data_structures/stacks/postfix_evaluation.py:40: in <module>
    def parse_token(token: str | float) -> float | str:
E   TypeError: unsupported operand type(s) for |: 'type' and 'type'
        OPERATORS  = {'*': <function <lambda> at 0x10575e9d0>, '+': <function
<lambda> at 0x10575eaf0>, '-': <function <lambda> at 0x10575eb80>, '/':
<function <lambda> at 0x10575ea60>, ...}
        UNARY_OP_SYMBOLS = ('-', '+')
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/postfix_evaluation.cpython-39.pyc'
        __doc__    = '\nReverse Polish Nation is also known as Polish postfix
notation or simply postfix\nnotation.\nhttps://en.wikipedia.o...| 5,54\n
| pop(54)      | 5\n         | pop(5)       |\n       + | push(5+54)   | 59\n\n
Result =  59\n'
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/postfix_evaluation.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x10575b7f0>
        __name__   = 'data_structures.stacks.postfix_evaluation'
        __package__ = 'data_structures.stacks'
        __spec__   =
ModuleSpec(name='data_structures.stacks.postfix_evaluation',
loader=<_frozen_importlib_external.SourceFileLoader
objec...ers/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/stacks/postfix_evaluation.py')
_____________________________________________________ ERROR collecting
data_structures/stacks/stack.py
_____________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.stacks.stack'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.stacks.stack'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.stacks.stack'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
```

```
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.stacks.stack'
        parent     = 'data_structures.stacks'
        parent_module = <module 'data_structures.stacks' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks']
        spec       = ModuleSpec(name='data_structures.stacks.stack',
loader=<_frozen_importlib_external.SourceFileLoader object at 0x10575d...,
origin='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/stacks/stack.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module 'data_structures.stacks.stack' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py'>
        spec       = ModuleSpec(name='data_structures.stacks.stack',
loader=<_frozen_importlib_external.SourceFileLoader object at 0x10575d...,
origin='/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-
Python/data_structures/stacks/stack.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module 'data_structures.stacks.stack' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10575d670>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/stack.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.stacks.stack'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10575d670>
        source_bytes = b'from __future__ import annotations\n\nfrom typing
import TypeVar\n\nT = TypeVar("T")\n\n\nclass StackOverflowError(B...ert 55 not
in stack\n\n\nif __name__ == "__main__":\n    test_stack()\n\n    import
doctest\n\n    doctest.testmod()\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py'
        st         = {'mtime': 1756904091.5996814, 'size': 4725}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'from __future__ import annotations\n\nfrom typing import
TypeVar\n\nT = TypeVar("T")\n\n\nclass StackOverflowError(B...ert 55 not in
stack\n\n\nif __name__ == "__main__":\n    test_stack()\n\n    import
doctest\n\n    doctest.testmod()\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x10575d670>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
```

```
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py", line 16
E       class Stack[T]:
E                   ^
E   SyntaxError: invalid syntax
        args       = (b'from __future__ import annotations\n\nfrom typing import
TypeVar\n\nT = TypeVar("T")\n\n\nclass StackOverflowError(...
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py', 'exec')
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/stacks/stack_with_doubly_linked_list.py
_____________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.stacks.stack_with_doubly_linked_list'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.stacks.stack_with_doubly_linked_list'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
        module     = <object object at 0x10225d060>
        name       = 'data_structures.stacks.stack_with_doubly_linked_list'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.stacks.stack_with_doubly_linked_list'
        parent     = 'data_structures.stacks'
        parent_module = <module 'data_structures.stacks' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks']
        spec       =
ModuleSpec(name='data_structures.stacks.stack_with_doubly_linked_list',
loader=<_frozen_importlib_external.SourceFileL...senthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/stacks/
stack_with_doubly_linked_list.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module
'data_structures.stacks.stack_with_doubly_linked_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_doubly_linked_list.py'>
        spec       =
ModuleSpec(name='data_structures.stacks.stack_with_doubly_linked_list',
loader=<_frozen_importlib_external.SourceFileL...senthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/stacks/
stack_with_doubly_linked_list.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module
'data_structures.stacks.stack_with_doubly_linked_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_doubly_linked_list.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
```

```
0x105793e80>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/stack_with_doubly_linked_list.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.stacks.stack_with_doubly_linked_list'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x105793e80>
        source_bytes = b'# A complete working Python program to demonstrate
all\r\n# stack operations using a doubly linked list\r\n\r\nfrom ...ck()\r\n\r\n
# Print True if the stack is empty else False\r\n    print("\\nstack is empty:",
stack.is_empty())\r\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_doubly_linked_list.py'
        st         = {'mtime': 1756904091.5999908, 'size': 3301}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'# A complete working Python program to demonstrate
all\r\n# stack operations using a doubly linked list\r\n\r\nfrom ...ck()\r\n\r\n
# Print True if the stack is empty else False\r\n    print("\\nstack is empty:",
stack.is_empty())\r\n'
        path       =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_doubly_linked_list.py'
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x105793e80>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_doubly_linked_list.py", line 11
E       class Node[T]:
E                  ^
E   SyntaxError: invalid syntax
        args       = (b'# A complete working Python program to demonstrate
all\r\n# stack operations using a doubly linked
list\r\n\r\nfrom...Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_doubly_linked_list.py', 'exec')
        f          = <built-in function compile>
        kwds       = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/stacks/stack_with_singly_linked_list.py
_____________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
        level      = 0
        name       = 'data_structures.stacks.stack_with_singly_linked_list'
        package    = None
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
        level      = 0
        name       = 'data_structures.stacks.stack_with_singly_linked_list'
        package    = None
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
        import_    = <function _gcd_import at 0x102284310>
```

```
        module     = <object object at 0x10225d060>
        name       = 'data_structures.stacks.stack_with_singly_linked_list'
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
        import_    = <function _gcd_import at 0x102284310>
        name       = 'data_structures.stacks.stack_with_singly_linked_list'
        parent     = 'data_structures.stacks'
        parent_module = <module 'data_structures.stacks' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__init__.py'>
        path       =
['/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks']
        spec       =
ModuleSpec(name='data_structures.stacks.stack_with_singly_linked_list',
loader=<_frozen_importlib_external.SourceFileL...senthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/stacks/
stack_with_singly_linked_list.py')
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
        module     = <module
'data_structures.stacks.stack_with_singly_linked_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_singly_linked_list.py'>
        spec       =
ModuleSpec(name='data_structures.stacks.stack_with_singly_linked_list',
loader=<_frozen_importlib_external.SourceFileL...senthil/Documents/rit-
workspace/swen-777/TheAlgorithms-Python/data_structures/stacks/
stack_with_singly_linked_list.py')
<frozen importlib._bootstrap_external>:846: in exec_module
    ???
        module     = <module
'data_structures.stacks.stack_with_singly_linked_list' from
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_singly_linked_list.py'>
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x105788280>
<frozen importlib._bootstrap_external>:983: in get_code
    ???
        bytecode_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/stack_with_singly_linked_list.cpython-39.pyc'
        check_source = True
        fullname   = 'data_structures.stacks.stack_with_singly_linked_list'
        hash_based = False
        self       = <_frozen_importlib_external.SourceFileLoader object at
0x105788280>
        source_bytes = b'"""A Stack using a linked list like
structure"""\r\n\r\nfrom __future__ import annotations\r\n\r\nfrom
collections.a...     self.top = None\r\n\r\n\r\nif __name__ == "__main__":\r\n
from doctest import testmod\r\n\r\n    testmod()\r\n'
        source_hash = None
        source_mtime = 1756904091
        source_path =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_singly_linked_list.py'
        st         = {'mtime': 1756904091.6001422, 'size': 3862}
<frozen importlib._bootstrap_external>:913: in source_to_code
    ???
        _optimize  = -1
        data       = b'"""A Stack using a linked list like
structure"""\r\n\r\nfrom __future__ import annotations\r\n\r\nfrom
collections.a...     self.top = None\r\n\r\n\r\nif __name__ == "__main__":\r\n
from doctest import testmod\r\n\r\n    testmod()\r\n'
```

```
        path      =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_singly_linked_list.py'
        self      = <_frozen_importlib_external.SourceFileLoader object at
0x105788280>
<frozen importlib._bootstrap>:228: in _call_with_frames_removed
    ???
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_singly_linked_list.py", line 11
E       class Node[T]:
E                 ^
E   SyntaxError: invalid syntax
        args      = (b'"""A Stack using a linked list like
structure"""\r\n\r\nfrom __future__ import annotations\r\n\r\nfrom
collections....Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_with_singly_linked_list.py', 'exec')
        f         = <built-in function compile>
        kwds      = {'dont_inherit': True, 'optimize': -1}
_____________________________________________________ ERROR collecting
data_structures/stacks/test_balanced_parentheses_edge.py
_____________________________________________________
../../data_structures/stacks/test_balanced_parentheses_edge.py:2: in <module>
    from data_structures.stacks.balanced_parentheses import balanced_parentheses
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/
test_balanced_parentheses_edge.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/test_balanced_parentheses_edge.py'
        __loader__ = <_pytest.assertion.rewrite.AssertionRewritingHook object at
0x103c7e0d0>
        __name__   = 'data_structures.stacks.test_balanced_parentheses_edge'
        __package__ = 'data_structures.stacks'
        __spec__   =
ModuleSpec(name='data_structures.stacks.test_balanced_parentheses_edge',
loader=<_pytest.assertion.rewrite.AssertionRe...enthil/Documents/rit-workspace/
swen-777/TheAlgorithms-Python/data_structures/stacks/
test_balanced_parentheses_edge.py')
        unittest   = <module 'unittest' from
'/Users/rohinivsenthil/.asdf/installs/python/3.9.18/lib/python3.9/unittest/
__init__.py'>
../../data_structures/stacks/balanced_parentheses.py:1: in <module>
    from .stack import Stack
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py", line 16
E       class Stack[T]:
E                   ^
E   SyntaxError: invalid syntax
        __builtins__ = <builtins>
        __cached__ =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__pycache__/balanced_parentheses.cpython-39.pyc'
        __doc__    = None
        __file__   =
'/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/balanced_parentheses.py'
        __loader__ = <_frozen_importlib_external.SourceFileLoader object at
0x1057848e0>
        __name__   = 'data_structures.stacks.balanced_parentheses'
```

```
        __package__ = 'data_structures.stacks'
        __spec__    =
ModuleSpec(name='data_structures.stacks.balanced_parentheses',
loader=<_frozen_importlib_external.SourceFileLoader
obj...s/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/balanced_parentheses.py')
_____________________________________________________ ERROR collecting
data_structures/stacks/test_balanced_parentheses_edge.py
_____________________________________________________
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/site-packages/
_pytest/python.py:608: in _importtestmodule
    mod = import_path(self.path, mode=importmode, root=self.config.rootpath)
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/site-packages/
_pytest/pathlib.py:533: in import_path
    importlib.import_module(module_name)
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/importlib/
__init__.py:127: in import_module
    return _bootstrap._gcd_import(name[level:], package, level)
<frozen importlib._bootstrap>:1030: in _gcd_import
    ???
<frozen importlib._bootstrap>:1007: in _find_and_load
    ???
<frozen importlib._bootstrap>:986: in _find_and_load_unlocked
    ???
<frozen importlib._bootstrap>:680: in _load_unlocked
    ???
../../../../../../.asdf/installs/python/3.9.18/lib/python3.9/site-packages/
_pytest/assertion/rewrite.py:168: in exec_module
    exec(co, module.__dict__)
../../data_structures/stacks/test_balanced_parentheses_edge.py:2: in <module>
    from data_structures.stacks.balanced_parentheses import balanced_parentheses
../../data_structures/stacks/balanced_parentheses.py:1: in <module>
    from .stack import Stack
E     File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py", line 16
E       class Stack[T]:
E                   ^
E   SyntaxError: invalid syntax
=========================================================================== short
test summary info
============================================================================
ERROR ../../data_structures/arrays/product_sum.py - TypeError: unsupported
operand type(s) for |: 'type' and 'type'
ERROR ../../data_structures/binary_tree/binary_search_tree.py - ImportError:
cannot import name 'Self' from 'typing'
(/Users/rohinivsenthil/.asdf/installs/python/3.9.18/...
ERROR ../../data_structures/binary_tree/fenwick_tree.py - TypeError: unsupported
operand type(s) for |: 'types.GenericAlias' and 'NoneType'
ERROR ../../data_structures/binary_tree/inorder_tree_traversal_2022.py -
TypeError: unsupported operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/binary_tree/non_recursive_segment_tree.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structur...
ERROR ../../data_structures/hashing/double_hash.py - TypeError: unsupported
operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/hashing/hash_map.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_map.py...
ERROR ../../data_structures/hashing/hash_table.py - TypeError: unsupported
operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/hashing/hash_table_with_linked_list.py - TypeError:
unsupported operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/hashing/quadratic_probing.py - TypeError:
```

```
unsupported operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/hashing/tests/test_hash_map.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/...
ERROR ../../data_structures/hashing/tests/test_hash_map.py
ERROR ../../data_structures/heap/heap.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py", line 25
ERROR ../../data_structures/heap/heap_edge_tests.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py", ...
ERROR ../../data_structures/heap/heap_generic.py - TypeError: unsupported
operand type(s) for |: 'ABCMeta' and 'NoneType'
ERROR ../../data_structures/heap/randomized_heap.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/randomized...
ERROR ../../data_structures/heap/skew_heap.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/skew_heap.py", l...
ERROR ../../data_structures/kd_tree/build_kdtree.py - TypeError: unsupported
operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/kd_tree/nearest_neighbour_search.py - TypeError:
unsupported operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/kd_tree/example/example_usage.py - TypeError:
unsupported operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/kd_tree/tests/test_kdtree.py - TypeError:
unsupported operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/kd_tree/tests/test_kdtree.py - TypeError:
unsupported operand type(s) for |: 'type' and 'NoneType'
ERROR ../../data_structures/linked_list/doubly_linked_list_two.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/l...
ERROR ../../data_structures/linked_list/floyds_cycle_detection.py - ImportError:
cannot import name 'Self' from 'typing'
(/Users/rohinivsenthil/.asdf/installs/python/3.9...
ERROR ../../data_structures/linked_list/from_sequence.py - TypeError:
unsupported operand type(s) for |: 'type' and 'type'
ERROR ../../data_structures/linked_list/skip_list.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/sk...
ERROR ../../data_structures/queues/queue_by_list.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by...
ERROR ../../data_structures/queues/queue_by_two_stacks.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/qu...
ERROR ../../data_structures/stacks/balanced_parentheses.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/s...
ERROR ../../data_structures/stacks/dijkstras_two_stack_algorithm.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures...
ERROR ../../data_structures/stacks/infix_to_postfix_conversion.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/s...
ERROR ../../data_structures/stacks/postfix_evaluation.py - TypeError:
unsupported operand type(s) for |: 'type' and 'type'
ERROR ../../data_structures/stacks/stack.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack.py", line 16
ERROR ../../data_structures/stacks/stack_with_doubly_linked_list.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures...
ERROR ../../data_structures/stacks/stack_with_singly_linked_list.py -   File
```

```
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures...
ERROR ../../data_structures/stacks/test_balanced_parentheses_edge.py -   File
"/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structure...
ERROR ../../data_structures/stacks/test_balanced_parentheses_edge.py
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! Interrupted:
37 errors during
collection !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
=============================================================================== 37
errors in 1.04s
===============================================================================
Combined data file .coverage.Rohinis-Air.lan.18291.638500
 Passed: 1,  Failed: 0
 Coverage: 86.6%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/min_heap.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/min_heap.py: No module named 'data_structures.heap.min_hea'
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap.py: invalid syntax (heap.py, line 25)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap_generic.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap_generic.py: unsupported operand type(s) for |:
'ABCMeta' and 'NoneType'
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/skew_heap.py: invalid syntax (skew_heap.py, line 11)
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/randomized_heap.py: invalid syntax (randomized_heap.py,
line 12)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/binomial_heap.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/binomial_heap.py: No module named
'data_structures.heap.binomial_hea'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/max_heap.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/max_heap.py: No module named 'data_structures.heap.max_hea'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/median_two_array.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/median_two_array.py: No module named
'data_structures.arrays.median_two_arra'
```

```
 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/kth_largest_element.py
 Passed: 15,  Failed: 0
 Coverage: 86.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/sparse_table.py
 Passed: 9,  Failed: 0
 Coverage: 88.5%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/find_triplets_with_0_sum.py
 Passed: 8,  Failed: 0
 Coverage: 90.0%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/permutations.py
 Passed: 2,  Failed: 0
 Coverage: 85.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/equilibrium_index_in_array.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/equilibrium_index_in_array.py: No module named
'data_structures.arrays.equilibrium_index_in_arra'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/index_2d_array_in_1d.py
 Passed: 17,  Failed: 0
 Coverage: 89.5%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/product_sum.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/product_sum.py: unsupported operand type(s) for |: 'type'
and 'type'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/monotonic_array.py
Import failed for
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/monotonic_array.py: No module named
'data_structures.arrays.monotonic_arra'

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/pairs_with_given_sum.py
 Passed: 3,  Failed: 0
 Coverage: 71.4%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/prefix_sum.py
 Passed: 13,  Failed: 0
```

```
 Coverage: 92.3%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/linked_queue.py
 Passed: 43,  Failed: 0
 Coverage: 93.3%
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_two_stacks.py: invalid syntax
(queue_by_two_stacks.py, line 6)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/double_ended_queue.py
 Passed: 134,  Failed: 0
 Coverage: 89.7%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/circular_queue_linked_list.py
 Passed: 30,  Failed: 0
 Coverage: 93.2%

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/circular_queue.py
 Passed: 23,  Failed: 0
 Coverage: 96.4%
Error parsing
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_by_list.py: invalid syntax (queue_by_list.py, line
6)

 Running doctests in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/priority_queue_using_list.py
 Passed: 55,  Failed: 0
 Coverage: 45.9%

 Running pytest in:
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/
Name
Stmts   Miss  Cover
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
--
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/__init__.py                                      0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/__init__.py                               0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/equilibrium_index_in_array.py            12     10
17%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/find_triplets_with_0_sum.py              20     16
20%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/index_2d_array_in_1d.py                  19     11
42%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
```

```
data_structures/arrays/kth_largest_element.py                              30     27
10%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/median_two_array.py                                 13     11
15%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/monotonic_array.py                                   8      6
25%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/pairs_with_given_sum.py                              7      3
57%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/permutations.py                                     28     25
11%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/prefix_sum.py                                       26     21
19%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/product_sum.py                                      10      9
10%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/sparse_table.py                                     26     22
15%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/arrays/sudoku_solver.py                                   119     90
24%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/__init__.py                                    0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/avl_tree.py                                   215    176
18%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/basic_binary_tree.py                           56     32
43%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_search_tree.py                         133    129
3%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_search_tree_recursive.py               280    240
14%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_tree_mirror.py                          21     18
14%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_tree_node_sum.py                        19     10
47%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_tree_path_sum.py                        31     22
29%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/binary_tree_traversals.py                     102     81
21%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/diameter_of_binary_tree.py                     26     16
38%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/diff_views_of_binary_tree.py                   78     64
18%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/distribute_coins.py                            38     25
34%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/fenwick_tree.py                                68     65
```

```
4%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/flatten_binarytree_to_linkedlist.py       39     32
18%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/floor_and_ceiling.py                      33     21
36%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/inorder_tree_traversal_2022.py            37     34
8%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/is_sorted.py                              29     17
41%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/is_sum_tree.py                            64     39
39%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/lazy_segment_tree.py                      74     63
15%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/lowest_common_ancestor.py                 53     45
15%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/maximum_fenwick_tree.py                   33     24
27%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/maximum_sum_bst.py                        27     15
44%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/merge_two_binary_trees.py                 38     31
18%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/mirror_binary_tree.py                     52     37
29%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/number_of_possible_binary_trees.py        23     18
22%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/red_black_tree.py                        436    390
11%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/segment_tree.py                           59     47
20%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/segment_tree_other.py                     72     58
19%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/serialize_deserialize_binary_tree.py      43     27
37%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/symmetric_tree.py                         40     28
30%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/treap.py                                  69     55
20%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/wavelet_tree.py                           62     51
18%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/binary_tree/wavelet_tree_edge_tests.py                21     16
24%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/disjoint_set/__init__.py                               0      0
100%
```

```
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/disjoint_set/alternate_disjoint_set.py                30     26
13%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/disjoint_set/disjoint_set.py                          28     22
21%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/__init__.py                                    0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/bloom_filter.py                               32     18
44%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/double_hash.py                                23     21
9%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_table.py                                 60     56
7%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/hash_table_with_linked_list.py                15     13
13%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/number_theory/__init__.py                      0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/number_theory/prime_numbers.py                18     14
22%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/quadratic_probing.py                          16     15
6%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/tests/__init__.py                              0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/hashing/tests/test_hash_map.py                        38     35
8%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/__init__.py                                       0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/binomial_heap.py                                171    157
8%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap_edge_tests.py                               16     14
12%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/heap_generic.py                                  76     73
4%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/max_heap.py                                      51     41
20%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/heap/min_heap.py                                      89     18
80%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/__init__.py                                    0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/build_kdtree.py                               11      9
18%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/example/__init__.py                            0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
```

```
data_structures/kd_tree/example/example_usage.py                        19     17
11%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/example/hypercube_points.py                      5      3
40%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/kd_node.py                                       6      3
50%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/nearest_neighbour_search.py                     26     24
8%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/tests/__init__.py                                0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/kd_tree/tests/test_kdtree.py                            37     34
8%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/__init__.py                                 46     35
24%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/circular_linked_list.py                    120     96
20%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/deque_doubly.py                             56     39
30%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/doubly_linked_list.py                      115     97
16%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/floyds_cycle_detection.py                   51     48
6%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/from_sequence.py                            21     17
19%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/has_loop.py                                 39     29
26%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/is_palindrome.py                            73     63
14%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/merge_two_lists.py                          30     14
53%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/middle_element_of_linked_list.py            29     21
28%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/print_reverse.py                            39     23
41%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/reverse_k_group.py                          58     43
26%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/rotate_to_the_right.py                      63     53
16%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/singly_linked_list.py                      169    140
17%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/linked_list/swap_nodes.py                               44     28
36%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/__init__.py                                       0      0
```

100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/circular_queue.py 28 21
25%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/circular_queue_linked_list.py 59 45
24%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/double_ended_queue.py 107 78
27%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/linked_queue.py 45 29
36%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/priority_queue_using_list.py 85 68
20%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/queues/queue_on_pseudo_stack.py 31 22
29%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/__init__.py 0 0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/balanced_parentheses.py 18 17
6%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/dijkstras_two_stack_algorithm.py 25 22
12%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/infix_to_postfix_conversion.py 48 46
4%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/infix_to_prefix_conversion.py 44 41
7%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/largest_rectangle_histogram.py 15 13
13%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/lexicographical_numbers.py 15 12
20%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/next_greater_element.py 49 42
14%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/postfix_evaluation.py 54 51
6%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/prefix_evaluation.py 25 20
20%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stack_using_two_queues.py 45 34
24%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/stock_span_problem.py 18 0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/test_balanced_parentheses_edge.py 17 15
12%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/test_largest_rectangle_edge.py 38 32
16%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/stacks/test_stock_span_edge.py 43 37
14%

```
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/suffix_tree/__init__.py                                  0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/suffix_tree/example/__init__.py                          0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/suffix_tree/example/example_usage.py                    10      7
30%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/suffix_tree/suffix_tree.py                              28     22
21%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/suffix_tree/suffix_tree_node.py                          8      5
38%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/suffix_tree/test_suffix_tree_edge.py                    40     34
15%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/suffix_tree/tests/__init__.py                            0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/suffix_tree/tests/test_suffix_tree.py                   27     17
37%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/trie/__init__.py                                         0      0
100%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/trie/radix_tree.py                                      95     83
13%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/trie/test_trie_edge.py                                  59     51
14%
/Users/rohinivsenthil/Documents/rit-workspace/swen-777/TheAlgorithms-Python/
data_structures/trie/trie.py                                            67     55
18%
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
--
TOTAL
5552   4455    20%

 Coverage: 20.0%


############## COMBINED SUMMARY REPORT #############

+-----------+---------------------------------------+------------+------------
+--------------+
| Type      | File                                  | Passed     | Failed     |
Coverage     |
+-----------+---------------------------------------+------------+------------
+--------------+
| doctest   | disjoint_set.py                       | 30         | 0          |
100.0%       |
| doctest   | alternate_disjoint_set.py             | 23         | 0          |
86.7%        |
| doctest   | next_greater_element.py               | 3          | 0          |
79.6%        |
| doctest   | prefix_evaluation.py                  | 12         | 0          |
84.0%        |
| doctest   | dijkstras_two_stack_algorithm.py      | 0          | 1          |
0.0%         |
```

doctest	infix_to_prefix_conversion.py	10	0	88.6%
doctest	balanced_parentheses.py	0	1	0.0%
doctest	stock_span_problem.py	6	0	100.0%
doctest	largest_rectangle_histogram.py	4	0	86.7%
doctest	infix_to_postfix_conversion.py	0	1	0.0%
doctest	lexicographical_numbers.py	5	0	80.0%
doctest	stack_using_two_queues.py	11	0	37.8%
doctest	postfix_evaluation.py	0	1	0.0%
doctest	binary_tree_mirror.py	4	0	81.0%
doctest	flatten_binarytree_to_linkedlist.py	24	0	89.7%
doctest	wavelet_tree.py	26	0	95.2%
doctest	merge_two_binary_trees.py	16	0	57.9%
doctest	avl_tree.py	10	0	74.0%
doctest	treap.py	0	1	0.0%
doctest	mirror_binary_tree.py	15	0	86.5%
doctest	segment_tree_other.py	32	0	79.2%
doctest	is_sum_tree.py	21	0	89.1%
doctest	fenwick_tree.py	0	1	0.0%
doctest	binary_search_tree.py	0	1	0.0%
doctest	binary_tree_traversals.py	12	0	81.4%
doctest	red_black_tree.py	1	0	77.1%
doctest	floor_and_ceiling.py	12	0	84.8%
doctest	binary_tree_path_sum.py	21	0	90.3%
doctest	symmetric_tree.py	18	0	90.0%
doctest	diff_views_of_binary_tree.py	9	0	97.4%
doctest	inorder_tree_traversal_2022.py	0	1	0.0%
doctest	distribute_coins.py	6	0	94.7%
doctest	basic_binary_tree.py	12	0	96.4%
doctest	segment_tree.py	12	0	76.3%
doctest	lowest_common_ancestor.py	33	0	71.7%
doctest	diameter_of_binary_tree.py	14	0	61.5%
doctest	lazy_segment_tree.py	14	0	43.2%

doctest	serialize_deserialize_binary_tree.py	19	0	93.0%
doctest	maximum_fenwick_tree.py	21	0	93.9%
doctest	binary_search_tree_recursive.py	57	0	34.6%
doctest	maximum_sum_bst.py	19	0	92.6%
doctest	binary_tree_node_sum.py	11	0	89.5%
doctest	number_of_possible_binary_trees.py	8	0	82.6%
doctest	is_sorted.py	13	0	65.5%
doctest	merge_two_lists.py	12	0	86.7%
doctest	is_palindrome.py	16	0	95.9%
doctest	__init__.py	25	0	95.7%
doctest	middle_element_of_linked_list.py	14	0	82.8%
doctest	rotate_to_the_right.py	21	0	76.2%
doctest	from_sequence.py	0	1	0.0%
doctest	circular_linked_list.py	1	0	92.5%
doctest	swap_nodes.py	38	0	77.3%
doctest	reverse_k_group.py	0	1	0.0%
doctest	floyds_cycle_detection.py	0	1	0.0%
doctest	doubly_linked_list.py	35	0	84.3%
doctest	print_reverse.py	31	0	87.2%
doctest	deque_doubly.py	0	1	0.0%
doctest	has_loop.py	0	1	0.0%
doctest	singly_linked_list.py	118	0	79.3%
doctest	bloom_filter.py	19	0	100.0%
doctest	hash_table.py	0	1	0.0%
doctest	double_hash.py	0	1	0.0%
doctest	quadratic_probing.py	0	1	0.0%
doctest	prime_numbers.py	9	0	38.9%
doctest	radix_tree.py	9	0	88.4%
doctest	trie.py	1	0	86.6%
doctest	min_heap.py	0	1	0.0%
doctest	heap_generic.py	0	1	0.0%
doctest	binomial_heap.py	0	1	0.0%

doctest	max_heap.py	0	1	0.0%
doctest	median_two_array.py	0	1	0.0%
doctest	kth_largest_element.py	15	0	86.7%
doctest	sparse_table.py	9	0	88.5%
doctest	find_triplets_with_0_sum.py	8	0	90.0%
doctest	permutations.py	2	0	85.7%
doctest	equilibrium_index_in_array.py	0	1	0.0%
doctest	index_2d_array_in_1d.py	17	0	89.5%
doctest	product_sum.py	0	1	0.0%
doctest	monotonic_array.py	0	1	0.0%
doctest	pairs_with_given_sum.py	3	0	71.4%
doctest	prefix_sum.py	13	0	92.3%
doctest	linked_queue.py	43	0	93.3%
doctest	double_ended_queue.py	134	0	89.7%
doctest	circular_queue_linked_list.py	30	0	93.2%
doctest	circular_queue.py	23	0	96.4%
doctest	priority_queue_using_list.py	55	0	45.9%
pytest	suffix_tree.cpython-39.pyc	-	-	20.0%
TOTAL		1265	24	58.9%