

Python Sets and Dictionaries Task

```
class DataAnalyzer:
    def __init__(self):
        self.dataset = set()
        self.data_dict = {}

    def add_to_set(self, item):
        self.dataset.add(item)

    def remove_from_set(self, item):
        if item in self.dataset:
            self.dataset.remove(item)
        else:
            print("Item not found in the set.")

    def get_set(self):
        return self.dataset

    def create_dictionary(self, key, value):
        if key not in self.data_dict:
            self.data_dict[key] = value
        else:
            print("Key already exists in the dictionary.")

    def update_dictionary(self, key, value):
        if key in self.data_dict:
            self.data_dict[key] = value
        else:
            print("Key not found in the dictionary.")

    def get_dictionary(self):
        return self.data_dict

    def search_dictionary(self, key):
        if key in self.data_dict:
            return self.data_dict[key]
        else:
            return None

    def remove_from_dictionary(self, key):
        if key in self.data_dict:
            del self.data_dict[key]
        else:
            print("Key not found in the dictionary.")
```

Example usage:

```
analyzer = DataAnalyzer()
```

Adding items to the set

```
analyzer.add_to_set(10)
analyzer.add_to_set(20)
analyzer.add_to_set(30)
print("Set after adding items:", analyzer.get_set())
```

Set after adding items: {10, 20, 30}

Removing an item from the set

```
analyzer.remove_from_set(20)
print("Set after removing item:", analyzer.get_set())
```

Set after removing item: {10, 30}

```
# Creating dictionary
analyzer.create_dictionary('a', 1)
analyzer.create_dictionary('b', 2)
print("Dictionary:", analyzer.get_dictionary())
```

Dictionary: {'a': 1, 'b': 2}

```
# Updating dictionary
analyzer.update_dictionary('a', 100)
print("Updated Dictionary:", analyzer.get_dictionary())
```

Updated Dictionary: {'a': 100, 'b': 2}

```
# Searching dictionary
print("Value for key 'a':", analyzer.search_dictionary('a'))
```

Value for key 'a': 100

```
# Removing from dictionary
analyzer.remove_from_dictionary('b')
print("Dictionary after removal:", analyzer.get_dictionary())
```

Key not found in the dictionary.
Dictionary after removal: {'a': 100}