Assignment-2

1.

```
def modify_string(word):
    if len(word) < 3:
        return word
    elif word.endswith('ing'):
        return word + 'ly'
    else:
        return word + 'ing'
input_string = input("Enter a string: ")
result = modify_string(input_string)
print("Modified string:", result)
```

2.

```
def find_longest_word(words):
    if not words:
        return None, 0

    longest_word = ''
    length_of_longest = 0

    for word in words:
        if len(word) > length_of_longest:
            longest_word = word
            length_of_longest = len(word)

    return longest_word, length_of_longest
word_list = ["BMW M5 cs", "Mercedes benz G63", "Ford mustang", "toyota supra Mk4",
"Rolls Royce"]
longest, length = find_longest_word(word_list)
print(f"The longest word is '{longest}' with a length of {length} characters.")
```

3.

```
def pack_duplicates(lst):
    packed_list = []
    i = 0
    while i < len(lst):
        current = [lst[i]]
        while i + 1 < len(lst) and lst[i] == lst[i + 1]:
            current.append(lst[i + 1])
            i += 1
        packed_list.append(current)
        i += 1
    return packed_list
```

```
my_list = [1, 1, 2, 2, 3, 4, 4, 5, 5, 5]
result = pack_duplicates(my_list)
print(result)
```

4.

```
def most_frequent_item(lst):
    if not lst:
        return None

    count_dict = {}

    for item in lst:
        if item in count_dict:
            count_dict[item] += 1
        else:
            count_dict[item] = 1

    max_count = max(count_dict.values())

    most_frequent_items = [key for key, value in count_dict.items() if value == max_count]

    return most_frequent_items
my_list = [1, 2, 3, 2, 2, 3, 4, 5, 3, 2, 5]
result = most_frequent_item(my_list)
print(f"The item(s) with the most occurrences: {result}")
```

5.

```
from collections import Counter

def highest_3_values(dictionary):

    sorted_dict = Counter(dictionary)

    highest_values = sorted_dict.most_common(3)
    return highest_values

sample_dict = {'a': 10, 'b': 15, 'c': 8, 'd': 20, 'e': 15, 'f': 25}

result = highest_3_values(sample_dict)
print("The highest 3 key-value pairs are:")
for key, value in result:
    print(f"{key}: {value}")
```

6.

```
data = {'item1': 45.50, 'item2': 35, 'item3': 41.30, 'item4': 55, 'item5': 24}

sorted_items = sorted(data.items(), key=lambda x: x[1], reverse=True)
```

```
print("Top three items:")
for item, price in sorted_items[:3]:
    print(f"{item} {price}")
```