

Task 2

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Exercise 1:

```
1 void main() {  
2     List numbers = [5, 10, 15, 20, 25];  
3     numbers.add(30);  
4     numbers.removeAt(0);  
5     print("after modifaction: $numbers");  
6  
7     List greaterThan15 = numbers.where((number) => number > 15).toList();  
8     print("greater than 15: $greaterThan15");  
9  
10    numbers = numbers.map((number) => number * 2).toList();  
11    print("multiplying all numbers by 2: $numbers");  
12 }
```

Exercise 2:

```
1 Set set1 = {1, 2, 3, 4, 5};  
2 Set set2 = {3, 4, 5, 6, 7};  
3  
4 Set union = set1.union(set2);  
5 print("Union: $union");  
6  
7 Set intersection = set1.intersection(set2);  
8 print("Intersection: $intersection");  
9  
10 Set difference = set1.difference(set2);  
11 print("Difference: $difference");
```

Exercise 3:

```
//3
Map products = {
    "Laptop": 1500, |
    "Phone": 800,
    "Tablet": 400};

products["Smartwatch"] = 200;
products["Phone"] = 850;
products.remove("Tablet");

print("Updated products: $products");

products.forEach((product, price) {
    if (price > 500) {
        print(product);
    }
});
```

Exercise 4:

```
//4
String? name;
name ??= "Guest";
print("Name: $name");
```

Exercise 5:

```
//5
List numbers1 = [1, null, 2, null, 3];
print("list: $numbers1");
numbers1.removeWhere((element) => element == null);
print("Updated list: $numbers1");
```

Exercise 6:

```
//6

int? value;
value ??= 100;
print("Value: $value");
```

Exercise 7:

```
//7
int x = -5;

if (x > 0) {
    print("$x is positive.");
} else if (x < 0) {
    print("$x is negative.");
} else {
    print("$x is zero.");
}
```

Exercise 8:

```
//8
String role = "editor";

switch (role) {
    case "admin":
        print("Admin Access");
        break;
    case "editor":
        print("Editor Access");
        break;
    case "viewer":
        print("Viewer Access");
        break;
    default:
        print("No Access");
}
```

Exercise 9:

```
//9
List numbers3 = [1, 2, 3, 4, 5];

for (int number in numbers3) {
    print("Square of $number: ${number * number}");
}
```

Exercise 10:

```
//10
int i = 10;

while (i >= 1) {
    print(i);
    i--;
}
```

Exercise 11:

```
//11
int j = 1;

do {
    print(j);
    j++;
} while (j <= 5);
```

Output:

```
Q1
after modification: [10, 15, 20, 25, 30]
greater than 15: [20, 25, 30]
multiplying all numbers by 2: [20, 30, 40, 50, 60]
Q2
Union: {1, 2, 3, 4, 5, 6, 7}
Intersection: {3, 4, 5}
Difference: {1, 2}
Q3
products: {Laptop: 1500, Phone: 800, Tablet: 400}
Updated products: {Laptop: 1500, Phone: 850, Smartwatch: 200}
Laptop
Phone
Q4
Name: Guest
Q5
list: [1, null, 2, null, 3]
Updated list: [1, 2, 3]
Q6
Value: 100
Q7
-5 is negative.
Q8
Editor Access
Q9
Square of 1: 1
Square of 2: 4
Square of 3: 9
Square of 4: 16
Square of 5: 25
```

```
Q10
10
9
8
7
6
5
4
3
2
1
Q11
1
2
3
4
5
```