

CS3C

1. Write a Python program to create an array of 3 integers and display the array items. Access individual elements through indexes.

```
1  """
2
3  Welcome to GDB Online.
4  GDB online is an online compiler and debugger tool for C, C++, Python, Java, PHP, Ruby, Perl,
5  C#, OCaml, VB, Swift, Pascal, Fortran, Haskell, Objective-C, Assembly, HTML, CSS, JS, SQLite, Prolog.
6  Code, Compile, Run and Debug online from anywhere in world.
7
8  """
9  #1). Python program to create an array of 3 integers and display the array items.
10 a = [1,3,5]
11 print(a[0])
12 print(a[1])
13 print(a[2])
14 print("")
15
```

```
1
3
5
```

2. Write a Python program to append a new item to the end of the array.

```
16 #2). Python program to append a new item to the end of the array.
17 import array
18 original_array = array.array('i', [1, 3, 5, 7, 9])
19 print("Original array:", original_array)
20
21 original_array.append(11)
22
23 print("New array:", original_array)
24 print("")
25
```

```
Original array: array('i', [1, 3, 5, 7, 9])
New array: array('i', [1, 3, 5, 7, 9, 11])
```

3. Write a Python program to reverse the order of the items in the array.

```
35 #4.) Python program to find out if a given array of integers contains any duplicate elements.
36 def contains_duplicates(arr):
37     return len(arr) != len(set(arr))
38
39 arr1 = [1, 2, 3, 4, 5]
40 arr2 = [1, 2, 3, 3, 4, 5]
41 arr3 = [1, 2, 3, 1, 4, 5]
42
43 print(contains_duplicates(arr1))
44 print(contains_duplicates(arr2))
45 print(contains_duplicates(arr3))
46 print("")
47
```

```
Original array: array('i', [1, 3, 5, 3, 7, 1, 9, 3])
New array: array('i', [3, 9, 1, 7, 3, 5, 3, 1])
```

4. Write a Python program to find out if a given array of integers contains any duplicate elements. Return true if any value appears at least twice in the array, and return false if every element is distinct.

```
34
35 #4.) Python program to find out if a given array of integers contains any duplicate elements.
36 def contains_duplicates(arr):
37     return len(arr) != len(set(arr))
38
39 arr1 = [1, 2, 3, 4, 5]
40 arr2 = [1, 2, 3, 3, 4, 5]
41 arr3 = [1, 2, 3, 1, 4, 5]
42
43 print(contains_duplicates(arr1))
44 print(contains_duplicates(arr2))
45 print(contains_duplicates(arr3))
46 print("")
47
```

```
False
True
True
```

5. Write a Python program to find the first duplicate element in a given array of integers. Return -1 if there are no such elements.

```
47
48 #5.) Python program to find the first duplicate element in a given array of integers.
49 def first_duplicate(arr):
50     seen = set()
51
52     for num in arr:
53         if num in seen:
54             return num
55         seen.add(num)
56
57     return -1
58
59 arr1 = [1, 2, 3, 4, 5, 4]
60 arr2 = [1, 2, 3, 4, 5]
61 arr3 = [1, 1, 2, 3, 4, 5]
62
63 print(first_duplicate(arr1))
64 print(first_duplicate(arr2))
65 print(first_duplicate(arr3))
66
67
```

```
4
-1
1
```