main.py (part 1)

```python
"""Python program find difference between each number in the array
    and the average of all numbers"""
arr = [8,6,7,5,9,6,11,4,1,12,20]
sum = arr[0]
for i in range(1, len(arr)):
    print(arr[i] - arr[i-1])
    sum = sum + arr[i]
print("Average: {0}".format(sum / len(arr)))

print("=================")
"""Python program to convert a string in an array"""
s = "1,2,3,4,5"
print(s.split(","))

print("=================")
"""Python program to split an array in two and store even numbers in
    one array and odd numbers in the other."""
odd = []
even = []
for i in arr:
    if i % 2 == 0:
```

Shell

```
-2
1
-2
4
-3
5
-7
-3
11
8
Average: 8.090909090909092
=================
['1', '2', '3', '4', '5']
=================
Array: [8, 6, 7, 5, 9, 6, 11, 4, 1, 12, 20]
Odd: [7, 5, 9, 11, 1]
Even: [8, 6, 6, 4, 12, 20]
=================
Original array: [8, 6, 7, 5, 9, 6, 11, 4, 1, 12, 20]
Sorted array: [1, 4, 5, 6, 6, 7, 8, 9, 11, 12, 20]
>
```

main.py (part 2)

```python
        even.append(i)
    else:
        odd.append(i)
print("Array: {0}".format(arr))
print("Odd: {0}".format(odd))
print("Even: {0}".format(even))

print("=================")
"""Python program to perform insertion sort on an array."""
def insertionSort(arr: list):
    for i in range(1, len(arr)):
        j = i
        while j > 0 and arr[j-1] > arr[j]:
            temp = arr[j-1]
            arr[j-1] = arr[j]
            arr[j] = temp
            j = j-1

print("Original array: {0}".format(arr))
insertionSort(arr)
print("Sorted array: {0}".format(arr))
```

Shell

```
-2
1
-2
4
-3
5
-7
-3
11
8
Average: 8.090909090909092
=================
['1', '2', '3', '4', '5']
=================
Array: [8, 6, 7, 5, 9, 6, 11, 4, 1, 12, 20]
Odd: [7, 5, 9, 11, 1]
Even: [8, 6, 6, 4, 12, 20]
=================
Original array: [8, 6, 7, 5, 9, 6, 11, 4, 1, 12, 20]
Sorted array: [1, 4, 5, 6, 6, 7, 8, 9, 11, 12, 20]
>
```