

1. What is the output of the following code snippet? If you see the program does not run, indicate the changes that are required.

```
m = ("string", 12, 54)
m[::-1]
print(m[0])
m[-1] = "strings";
print(m[-1])
```

2. Does the following program run? If so, what's its output?

```
m = ([1,2,3], "sample", [4,5,6])
m[-1].append(4)
l = m[0]
l.append(7)
print(l+m[-1])
```

3. What is the difference between a deep copy and a shallow copy in python lists?

4. Write a python program to extract a sub-string from index i to index j. Print "True" if this string is a palindrome, and "false" otherwise. E.g. "BANANA" from index 1 to 5 (i=1, j=5) results in "True"

5. What does the following program do? What is its output?

```
string = "banana"
s = dict()
for i in string:
    if i not in s:
        s[i] = 1
    else: s[i] += 1
max = float("-inf")
c = ''
for i in s:
    if max < s[i]:
        max = s[i]
        c = i
print(c+", "+str(max))
```