WEB PROGRAMMING LAB-4 HOME EXERCISES

Date @January 28, 2026

Question 1:

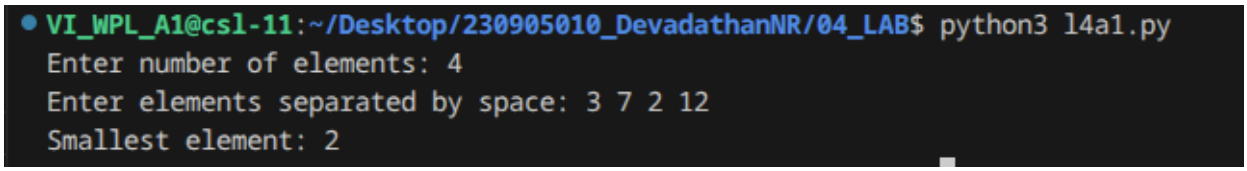
Write a python program to select smallest element from a list in an expected linear time.

Code:

```
n = int(input("Enter number of elements: "))
arr = list(map(int, input("Enter elements separated by space: ").split()))

if len(arr) != n:
    print("Error: Number of elements entered does not match")
else:
    m = arr[0]
    for x in arr[1:]:
        if x < m:
            m = x
    print("Smallest element:", m)
```

Output:



Question 2:

Write a python program to implement bubble sort.

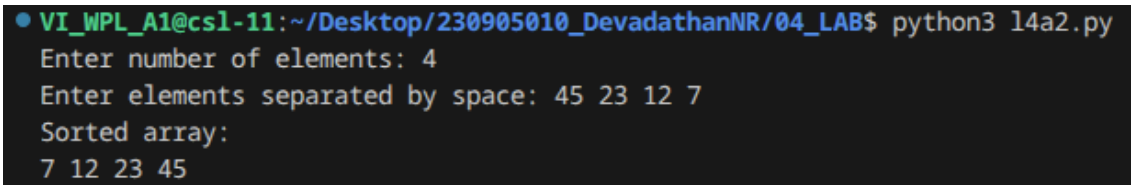
Code:

```
n = int(input("Enter number of elements: "))
arr = list(map(int, input("Enter elements separated by space: ").split()))

for i in range(n):
    for j in range(0, n - i - 1):
        if arr[j] > arr[j + 1]:
            arr[j], arr[j + 1] = arr[j + 1], arr[j]

print("Sorted array:")
print(*arr)
```

Output:



Question 3:

Write a python program to multiply two matrices

Code:

```
r1, c1 = map(int, input("Enter rows and columns of first matrix: ").split())
a = []

print("Enter elements of first matrix:")
for i in range(r1):
    a.append(list(map(int, input().split())))

r2, c2 = map(int, input("Enter rows and columns of second matrix: ").split())
b = []
```

```
print("Enter elements of second matrix:")
for i in range(r2):
    b.append(list(map(int, input().split())))

res = [[0] * c2 for _ in range(r1)]

for i in range(r1):
    for j in range(c2):
        for k in range(c1):
            res[i][j] += a[i][k] * b[k][j]

print("Resultant matrix:")
for row in res:
    print(*row)
```

Output:

```
VI_WPL_A1@csl-11:~/Desktop/230905010_DevadathanNR/04_LAB$ python3 l4a3.py
Enter rows and columns of first matrix: 3 3
Enter elements of first matrix:
1 2 3
4 5 6
7 8 9
Enter rows and columns of second matrix: 3 3
Enter elements of second matrix:
1 2 3
4 5 6
7 8 9
Resultant matrix:
30 36 42
66 81 96
102 126 150
```

Question 4:

Write a Python class to find validity of a string of parentheses, '(', ')', '{', '}', '[' and ']. These brackets must be close in the correct order, for example "()" and

"()[]{}" are valid but "[)", "({[)]" and "{{{" are invalid.

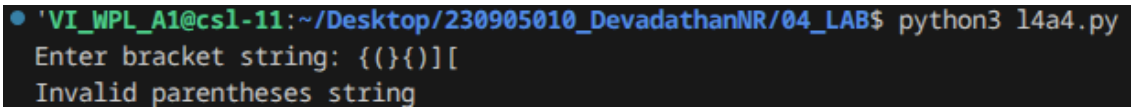
Code:

```
class ValidParentheses:
    def is_valid(self, s):
        stack = []
        mp = {')': '(', '}': '{', ']': '['}
        for ch in s:
            if ch in mp.values():
                stack.append(ch)
            else:
                if not stack or stack.pop() != mp.get(ch):
                    return False
        return not stack


s = input("Enter bracket string: ")
obj = ValidParentheses()

if obj.is_valid(s):
    print("Valid parentheses string")
else:
    print("Invalid parentheses string")
```

Output:



Question 5:

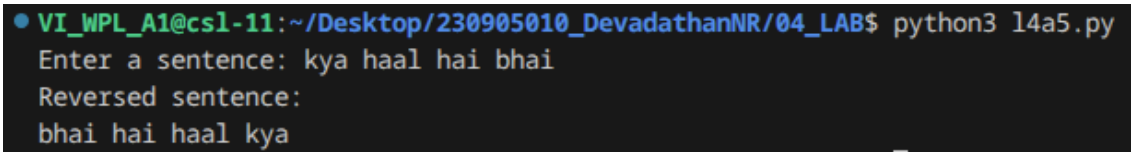
Write a Python class to reverse a string word by word.

Code:

```
class ReverseWords:
    def reverse(self, s):
        return " ".join(s.split()[::-1])

s = input("Enter a sentence: ")
obj = ReverseWords()
print("Reversed sentence:")
print(obj.reverse(s))
```

Output:



Question 6:

Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle.

Code:

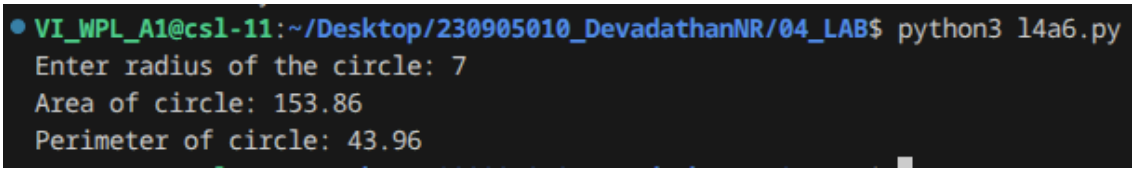
```
class Circle:
    def area(self, r):
        return 3.14 * r * r

    def perimeter(self, r):
        return 2 * 3.14 * r

r = float(input("Enter radius of the circle: "))
c = Circle()

print("Area of circle:", c.area(r))
print("Perimeter of circle:", c.perimeter(r))
```

Output:


VI_WPL_A1@csl-11:~/Desktop/230905010_DevadathanNR/04_LAB$ python3 l4a6.py
Enter radius of the circle: 7
Area of circle: 153.86
Perimeter of circle: 43.96