# ASSIGNMENT-1

**1.** To calculate area of a rectangle:

```
length = 10
width = 5
area = length * width
print("Area =", area)
```

**2.** To convert miles to km:

```
miles = 10
km = miles * 1.60934
print(miles, "miles is", km, "km")
```

**3.** To check palindrome:

```
def is_palindrome(s):
  return s == s[::-1]
s = "radar"
print(is_palindrome(s))
```

**4.** To find second largest element:

```
list1 = [5, 2, 8, 3, 10]
list1.sort()
print("Second largest:", list1[-2])
```

**5.** Indentation refers to the spaces at the beginning of a code line. It is used to define blocks of code .

**6.** Set difference:

```
A = {1, 2, 3, 4}
B = {3, 4, 5}
print(A - B) # {1, 2}
```

7. Print 1 to 10:

```
i = 1
while i <= 10:
 print(i)
 i += 1
```

8. Factorial using while loop:

```
num = 5
factorial = 1
while num > 1:
 factorial *= num
 num -= 1
print("Factorial:", factorial)
```

9. Check positive/negative/zero:

```
num = -5
if num > 0:
 print("Positive")
elif num == 0:
 print("Zero")
else:
 print("Negative")
```

10. Largest of three:

```
a, b, c = 10, 15, 12
if a > b and a > c:
 print("a is largest")
elif b > a and b > c:
 print("b is largest")
else:
```

```
print("c is largest")
```

**11.** Array of ones:

```
import numpy as np
arr = np.ones((2, 3))
print(arr)
```

12. 2D random integers:

```
import numpy as np
arr = np.random.randint(0, 10, size=(3, 3))
print(arr)
```

**13.** linspace:

```
import numpy as np
arr = np.linspace(1, 10, 5)
print(arr)
```

**14.** linspace 1 to 100:

```
import numpy as np
arr = np.linspace(1, 100, 10)
print(arr)
```

**15.** Even numbers 2 to 20:

```
import numpy as np
arr = np.arange(2, 21, 2)
print(arr)
```

**16.** 1 to 10 step 0.5:

```
import numpy as np
arr = np.arange(1, 10.5, 0.5)
print(arr)
```