

```
1 # cs 1/26/2020 class notes
2
3 b = 100
4
5 def sumbx(x):
6     b = 50
7     result = b + x
8     return(result)
9
10 print("b is local in this example" )
11 print(sumbx(20))
12 print(b)
13
14 # -----
15
16 g = 100
17
18 def sumbx2(x):
19     global g
20     g = 50
21     result = g + x
22     return(result)
23
24 print("g is global in this example" )
25 print(sumbx2(20))
26 print(g)
27
28 # =====
29
30 def power23(x):
31
32     # this is a local function
33     def iseven(z):
34         return(z % 2 == 0)
35
36     if iseven(x):
37         result = x ** 2
38     else:
39         result = x ** 3
40
41     return(result)
42
43 print("Using power23 function:" )
44 print(power23(3))
45 print(power23(4))
46
47 try:
48     print(iseven(11))
49 except:
50     print("Error! The function is not found!" )
51
52 # =====
53
54 def square(x):
55     result = x ** 2
56     return(result)
57
58 print("User-defined function:" )
```

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59 print(type(square))
60 print(square)
61 print(square(9))
62
63 print("Lambda function:" )
64 y = lambda x: x ** 2
65 print(type(y))
66 print(y)
67 print(y(9))
68
69 # -----
70
71 def product(x, y):
72     result = x * y
73     return(result)
74
75 print("User-defined function:" )
76 print(product(4, 5))
77
78 print("Lambda function:" )
79 z = lambda x, y: x * y
80 print(z(4, 5))
81
82 # -----
83
84 def check_if_even(z):
85     return(z % 2 == 0)
86
87 print("Lambda function checking if a number is even: " )
88 a = lambda hello: hello % 2 == 0
89
90 val1, val2 = 4, 5
91 print(f"is {val1} even? {a(val1)}" )
92 print(f"is {val2} even {a(val2)}" )
93
94 # -----
95
96 V = list(range(1, 6))
97 print(V)
98
99 print("Using our square function in the map()" )
100 X = map(square, V)
101 print(X)
102 print(list(X))
103
104 # -----
105
106 print("Using our power23 function in the map()" )
107 X2 = list(map(power23, V))
108 print(X2)
109
110 # =====

```