Programming Assignment 2

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This *PA2_PMH.ipynb* contains my solutions to **Programming Assignment 2**

- Problem 1: Printing Numbers.
- Problem 2: Age Status.
- Problem 3: Age Status v2.
- Problem 4: Calculating Pi.

Problem 1 – Printing Numbers.

In [19]:
```
for number in range(101): #101 instead of 100 because there are 101 numbers
    if number % 3==0 and number !=0:#check if divisible by 1 and not equal t
        print(number, "*")
    else:
        print(number)
```

```
0
1
2
3 *
4
5
6 *
7
8
9 *
10
11
12 *
13
14
15 *
16
17
18 *
19
20
21 *
22
```

```
23
24 *
25
26
27 *
28
29
30 *
31
32
33 *
34
35
36 *
37
38
39 *
40
41
42 *
43
44
45 *
46
47
48 *
49
50
51 *
52
53
54 *
55
56
57 *
58
59
60 *
61
62
63 *
64
65
66 *
67
68
69 *
70
71
72 *
73
74
75 *
```

```
76
77
78 *
79
80
81 *
82
83
84 *
85
86
87 *
88
89
90 *
91
92
93 *
94
95
96 *
97
98
99 *
100
```

In [ ]:

Problem 2 - Age Status.

In [1]:
```
while True: #use while loop so code keeps asking for their age until 0 is en
    age = int(input("what is the subject's age?"))
    if age==0:
        print("Done!")
        break #if break isn't used it will keep prompting for age
    elif age<18:
        print("Minor")
    elif age>=65:
        print("Senior Citizen")
    else:
        print("Adult")
```

```
Minor

Senior Citizen

Adult

Done!
```

Problem 3 – Age Status v2.

In [18]:
```
ages = [9,56,69,0]
for age in ages:
    if 0<age<18:
        print(f"{age}:Minor")
    elif age>=65:
        print(f"{age}:Senior Citizen")
    elif 18<=age<65:
        print(f"{age}:Adult")
    else:
        print(f"{age}:None")
#tried to use a second if statement for 0 and else for adult like previace p
```

```
9:Minor
56:Adult
69:Senior Citizen
0:None
```

Problem 4 - Calculating Pi.

In [22]:
```
import math
termlist = [100,1000,10000,100000,1000000] #defines list of numbers of itera
for terms in termlist:
#executes over termlist
        pi_estimate=0 #variable stores the running estimate of pi as we calc
        sign=1 #not understanding exaxctly why sign should be 1 but looked i
        n=0 #index of current term in series, we start index at 0
        denominator=1 #because first term in the series has a 1 so we start
        while n<terms:
        piestimate+=sign*(4/denominator) #adds current term to piestimate
        denominator+=2 #Increment the denominator for the next term starts f
        #A little confused about how to go from here so I googled
        sign*=- ## change
        n+=1 #move
```

```
  Cell In[22], line 3
    for terms in termlist:
    ^
IndentationError: unexpected indent
```

In [ ]:
```
##restarting (had to use book and google to figure this problem out
```

In [23]:
```
import math
```

In [24]:
```
termlist=[100,1000,10000,100000,1000000]
```

In [26]:
```
for terms in termlist:
    piestimate=0
    sign=1
    n=0
    denominator=1
    while n<terms:
        piestimate+=sign*(4/denominator)
        denominator+=2
        sign*=-1
        n+=1
```

In [28]:
```
print(f"pi={piestimate} using terms.")
```

```
pi=3.1415916535897743 using terms.
```