15-110 Refresher Session : Week 4

No Calculators, only Brains !!

1. **Think-Pair-Share : 3x3 BINGO**
   With the knowledge you have gained about arithmetic and logical operators, answer the 9 questions shown on the screen and strike your answers in the given bingo card.
   Rules :

   (a) When a question is shown, strike off its answer from your grid

   (b) Wrong answer directly disqualifies you from the game (eg : floats are different from integers)

   (c) If you get one line (horizontal/vertical) fully stricken, call out BINGO !

2. **Act like a Computer**
   What does the following code print when x = 9. Only the answer should be in the box.

```python
def refesher_1(x):
    if x < 5 and x >= 10 :
        return 1
    elif x < 7 :
        return 0.5
    else :
        return 0
```

3. **Programming Activity:**
   An algorithm is written below. Please try to translate it into code, step by step.

   1. Create a function named `someArithmetic`, which takes two parameters x and y.

   2. Inside the function, a variable called number stores the sum of x and y.

   3. Check if number is odd:
      (a) If yes : find the quotient of number and 3 using integer division and store it back in number
      (b) If no : find the quotient of number when integer divided by 2 and store it back in number

   4. Check if number powered 2 divided by 4 gives a remainder of 2.
      (a) If yes : return number multiplied by 2
      (b) If no : return number divided by 2.

4. **Act like a programmer:**
   In a football match, two teams play on the field with an aim to score a goal. The team who scores more number of goals wins the match. Your task is to define a function `findWinner(goal1, goal2)` which takes two values – `goal1` denoting the number of goals scored by team 1 and `goal2` denoting the number of goals scored by team 2. The function

   1. should return 1 and print "Team 1 wins" when Team 1 wins the match

   2. should return 2 and print "Team 2 wins" when Team 2 wins the match

3. should return 0 and print "Neither won" when it is a draw. b

Example : `findWinner(5, 4)` should return 1 and print "Team 1 wins"

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5. **Act like a computer:**
   What would the program return when x = 10, y = 4, and z = True

```python
def refresher_2(x , y , z) :
    if x > y * 3 :
        return 1
        print("I printed 1")
    elif x // y > 3 :
        return 2
        print("I printed 2")
    elif z == False :
        return 3
        print("I printed 3")
    else :
        solution = x % y + 3 // 4
        return solution
        print("I printed solution")
```

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6. **Act like a programmer:**
   A number is said to be 23ish, if its last digit is a multiple of 2 or a multiple of 3. Write a function is23ish(number) which takes a number and returns True if it is 23ish, or False.
   Example :

   `is23ish(5555554) returns True`

   `is23ish(5555555) returns False`