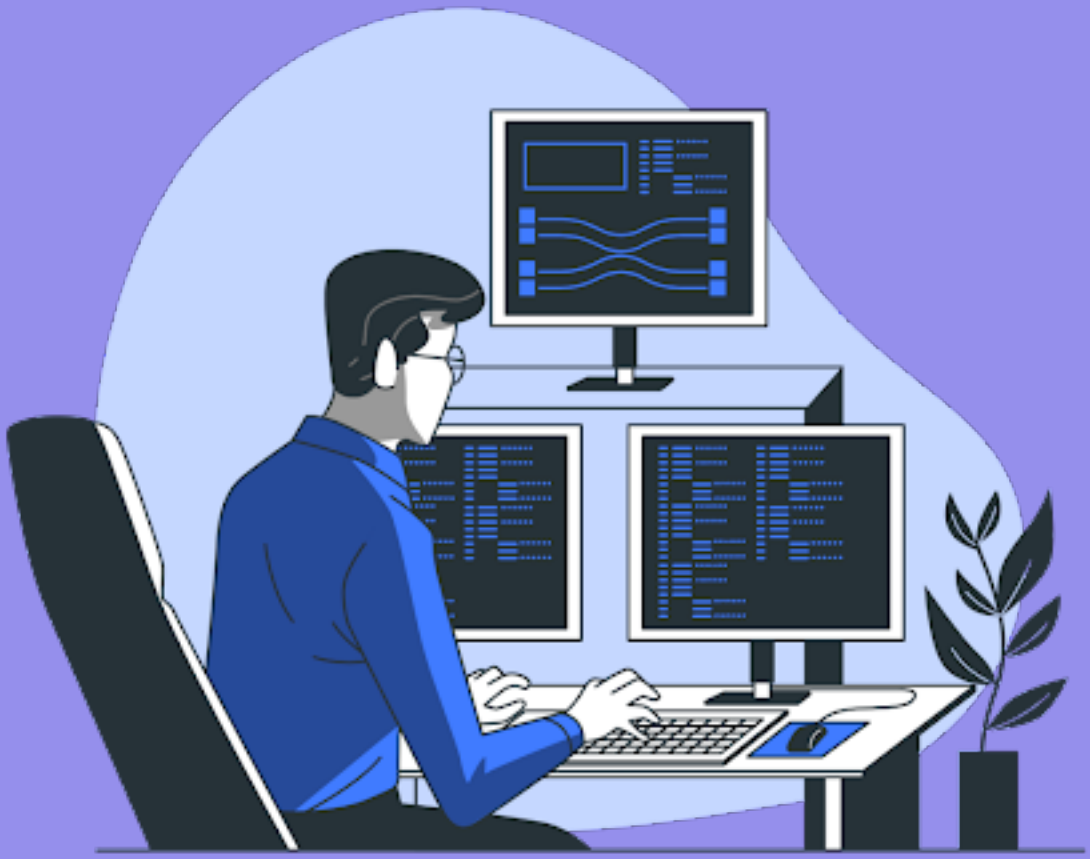
Advanced Problem Solving: Conditional Statements, Iterative Statements, Functions

Assignment Solutions



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Assignment Solutions

1. Given a positive integer A, find a pair of integer a, b such that
a and b are positive
A <= B
a^2 + b^2 = A
0<=A<=100000

Solution:

```
function squareSum(A){
 let a=0;
  while(a*a < A){
   let b = 0;
    while(b*b <A){
     if(a*a+b*b == A){
    if(a<=b){
     console.log(a,b);
        }
      }
      b+=1;
    }
    a+=1;

  }
}

squareSum(50);
```

Output:

1, 7
5, 5

2. Item delivery needs to take place for a circle of size B. Suppose we start from the position C (given) then find the position where the Ath item will be delivered.
Note: Distribution of Items are performed at the adjacent positions starting from C.

Expected Input: Three integers A, B, C
Expected Output: Integer denoting the position of the delivery of the Ath item if started from position C.

Example 1:

Input	2,5,1
Output	2

Example 2:

Input	8,5,2
Output	4

Explanation-1:

A denotes 2 items.
Starting from position 1 i.e. C, the first item will be delivered at 1st position and 2nd item is delivered at 2nd position therefore the output is 2

Explanation-2:
A denotes 8 items.
Starting from position 2 i.e. C, the first item will be delivered at 2st position and 2nd item is delivered at 3nd position and so on in a circle. This way the 8th item will be delivered in the 4th position.

Intuition:
Check the number of items that needs to be distributed is greater than the left out positions of the current cycle of circle.
If no then simply calculate the number of remaining items after the completion of current cycle and return mod of the left out items else return A+C-1.

Solution:

```
function solve(A, B, C){
   return (C + A - 1) % B;
}

A=8;
B=5;
C=2;
console.log(solve(A,B,C));
```

Output:

4

To run the code live and test click here.