ASSIGNMENT

By

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CSE(ai/ml)

Model Institute of Engineering & Technology (Autonomous)

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1.Write a C program to print Fibonacci series up to a given number of terms. 2. There are three piles of stones. The first pile contains a stones, the second pile contains b stones and the third pile contains c stones. You must choose one of the piles and split the stones from it to the other two piles; specifically, if the chosen pile initially contained s stones, you should choose an integer k ($0 \le k \le s$), move k stones from the chosen pile onto one of the remaining two piles and $s-k$ stones onto the other remaining pile. Determine if it is possible for the two remaining piles (in any order) to contain x stones and y stones respectively after performing this action.

Answer:
```c
#include <stdio.h>

void printFibonacci(int n) {
    int firstTerm = 0, secondTerm = 1, nextTerm;

    printf("Fibonacci Series up to %d terms:\n", n);

    for (int i = 0; i < n; i++) {
        printf("%d, ", firstTerm);
        nextTerm = firstTerm + secondTerm;
        firstTerm = secondTerm;
        secondTerm = nextTerm;
    }
}

int main() {
    int terms;

    printf("Enter the number of terms for the Fibonacci series: ");
    scanf("%d", &terms);

    printFibonacci(terms);

    return 0;
}
```

Output:

```
PROBLEMS  DEBUG CONSOLE  OUTPUT  TERMINAL

PS C:\Users\hp\Desktop\raghav.c> gcc .\assignment.c
PS C:\Users\hp\Desktop\raghav.c> .\a.exe
Enter the number of terms for the Fibonacci series: 5
Fibonacci Series up to 5 terms:
0, 1, 1, 2, 3,
PS C:\Users\hp\Desktop\raghav.c>
```

Q2.

Answer:
```c
#include <stdio.h>
```

```
int func1(int a, int b, int c, int x, int y) {
    for (int k = 0; k <= a; ++k) {
        int remainingStones = a - k;
        int pile1 = b + k;
        int pile2 = c + remainingStones;

        if ((pile1 == x && pile2 == y) || (pile1 == y && pile2 == x)) {
            return 1;
        }
    }

    for (int k = 0; k <= b; ++k) {
        int remainingStones = b - k;
        int pile1 = a + k;
        int pile2 = c + remainingStones;

        if ((pile1 == x && pile2 == y) || (pile1 == y && pile2 == x)) {
            return 1;
        }
    }

    for (int k = 0; k <= c; ++k) {
        int remainingStones = c - k;
        int pile1 = a + k;
        int pile2 = b + remainingStones;

        if ((pile1 == x && pile2 == y) || (pile1 == y && pile2 == x)) {
            return 1;
        }
    }

    return 0;
}

int main() {
    int t;
    printf("Enter the number of test cases: ");
    scanf("%d", &t);

    for (int i = 0; i < t; ++i) {
        int a, b, c, x, y;
        scanf("%d %d %d %d %d", &a, &b, &c, &x, &y);

        printf("%s\n", func1(a, b, c, x, y) ? "Yes" : "No");
        printf("\n\n");
    }
```

```
    return 0;
}
```

OUTPUT: