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NPTEL National Programme on Technology Enhanced Learning | NPAT 2017

Q2. Triangle inequality

Due on 2017-08-13, 18:00 IST

Weightage: 10%

Note: In this question, you have to understand the code that is given and provide a testcase as explained in the problem statement.

The following function takes three positive integer arguments a, b, c representing the sides of a triangle (hence, these integers satisfy the triangle inequality). The function should return 3 if the triangle is equilateral, it should return 2 if the triangle is isosceles but not equilateral, and it should return 1 otherwise. Identify values a, b, c for which the given function does NOT work.

```
int triangleType(int a, int b, int c) {
  if(a != b && b != c)
    return 1;
  else if(a == b && a == c)
    return 3;
  else
    return 2;
}
```

Open up the code submission box below and write your test case where you would normally enter your code. Your input should be in the form:

a, b, c

where a, b and c are all positive integers.

Sample Test Cases

	Input	Output
Test Case 1		correct
Test Case 2		correct

Due Date Exceeded. You scored 0.0/100.

Your last recorded submission was :

```c
#include <stdio.h>

int num[3]={
1,0,1
};

int triangleType_bad(int a, int b, int c) {
  if(a != b && b != c)
    return 1;
  else if(a == b && a == c)
    return 3;
  else
    return 2;
}

int triangleType_good(int a, int b, int c) {
  if((a == c) && (b != a) && (a <= b+c) && (b <= a+c) && (c
    return 0;

  if(a != b && b != c)
    return 1;
  else if(a == b && a == c)
    return 3;
  else
    return 2;
}


int main() {

    if(triangleType_bad(num[0], num[1], num[2]) != triangleT
        printf("correct\n");
    else
        printf("wrong\n");

    return 0;
}

```

End