CS/IS F214
Logic in Computer Science

BITS Pilani
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MODULE: **PROGRAM VERIFICATION**

Floyd-Hoare Logic: Program Variables and Logical Variables

Hoare Logic – Program Variables and Logical Variables

Consider the following program intended to compute the *gcd* of x and y:

/* Precondition: x >=0 $\land$ y >= 0
*/

while (y != 0) {

    t = x % y;

    x = y;

    y = t;

}

/* Poscondition: x = gcd(x, y) */

What is wrong with
this postcondition?

Hoare Logic – Program Variables and Logical Variables

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/* Precondition: x >=0 ∧ y >= 0 */

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/* Postcondition: x = gcd(x, y) */

What is wrong with this postcondition?

/* Precondition:

 x=A ∧ y=B ∧ x >= 0 ∧ y >= 0 */

while (y != 0) {

    t = x % y;

    x = y;

    y = t;

}

/* Postcondition: x = gcd(A, B) */