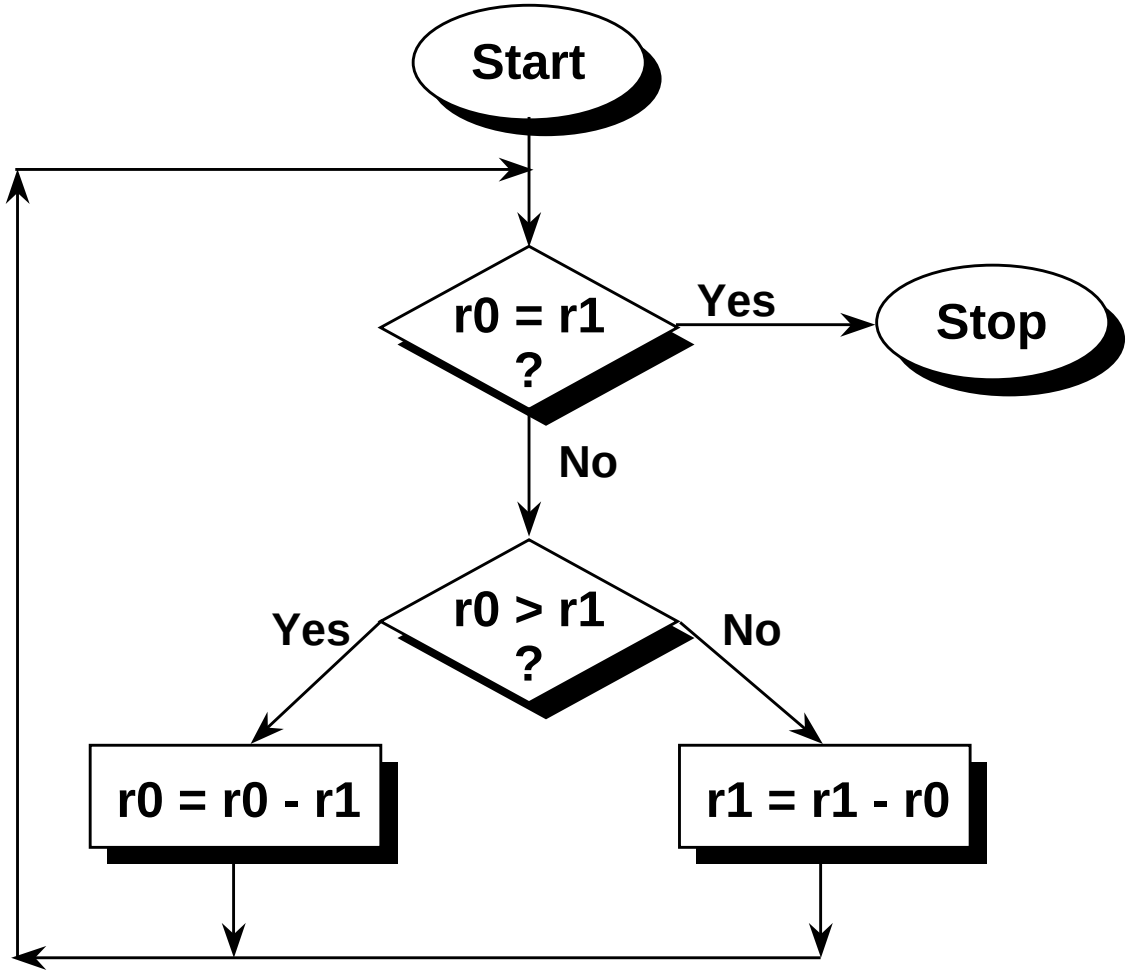
Quiz #2



* **Convert the GCD algorithm given in this flowchart into**
  1) "Normal" assembler, where only branches can be conditional.
  2) ARM assembler, where all instructions are conditional, thus improving code density.

* **The only instructions you need are CMP, B and SUB.**

Quiz #2 - Sample Solutions

"Normal" Assembler

```
gcd    cmp r0, r1      ;reached the end?
       beq stop
       blt less        ;if r0 > r1
       sub r0, r0, r1  ;subtract r1 from r0
       bal gcd
less   sub r1, r1, r0  ;subtract r0 from r1
       bal gcd
stop
```

ARM Conditional Assembler

```
gcd    cmp   r0, r1      ;if r0 > r1
       subgt r0, r0, r1  ;subtract r1 from r0
       sublt r1, r1, r0  ;else subtract r0 from r1
       bne   gcd         ;reached the end?
```