

### In-class Exercise 3

Show how the following program is executed in the *pipelined datapath with data forwarding* and use *Stall Pipeline*, *Predict Branch Not Taken*, and *Dynamic Branch Prediction using 4 bits* to solve control hazards.

| Address | Instruction      |
|---------|------------------|
| 0x0000  | irmov \$0, %rax  |
| 0x000A  | irmov \$10, %rcx |
| 0x0014  | irmov \$1, %rdx  |
| 0x001E  | irmov \$1, %r8   |
| 0x0028  | add %rdx, %rax   |
| 0x002A  | add %r8, %rdx    |
| 0x002C  | cmp %rcx, %rdx   |
| 0x002E  | jle 0x0028       |
| 0x0037  | hlt              |