ENGINEERING IN ENTERTAINMENT

Interaction Design in Video Games

Solution:

We can develop a timing diagram based on 16 ms frames, the input history and precise frame timings, the frame data regarding the character jumps, and a 3-frame delay such as the chart above. After the input delay, the first observable frame where a player would land after a jump occurs 129 milliseconds after Player A's input, with Player A landing one frame before Player B lands. Offline, this same outcome would have happened 81 ms after Player A's input. **Thus, the answer is C.**

Frame	Time (ms)	A	B
0	-47	—	Input applied at -39 ms
1	-31	—	Input registered, jump would begin offline
2	-15	Input applied at 0 ms	
3	1	Input registered, jump would begin offline	
4	17		Jump begins on-screen after delay
5	33		
6	49	Jump begins on-screen after delay	
7	65		
8	81	Jump would hit offline	
9	97		Jump would hit offline
10	113		
11	129	Jump hits on-screen	
12	145	—	Jump hits on-screen