Suppose you are a design engineer at a computer manufacturing company. Your advisor gives a certain design to comment on. You notice that the designer tends to use more CPU registers and justifies this by their superior speed. How would you evaluate this design. Please explain whether you agree or disagree with this design.

**Step 1: CPU register**

One of the few data storage areas that are a part of the computer processor is a processor register (CPU register). An instruction, a storage location, or any other type of data could be stored in a register (such as a bit sequence or individual characters). Registers are mentioned in some instructions as a part of the instruction.

The parts of memory that the CPU can access directly are called registers. The instructions or operands that the processor is now accessing are stored in the registers. The lowest form of integrated data storage in a CPU is a register.

**Step 2: Advantage of CPU register**

Instructions are carried out more quickly than in main memory since these are the quickest memory blocks.

Since each register has a distinct purpose, the CPU uses registers to handle instructions gracefully and smoothly.

In the digital age, there are very few CPUs without registers.

**Step 3:**

**I** am not agreeing with the statement because,

If we use more CPU register it will affect the performance.

Explanation

Due to their scarcity, registers are faster than memory. A larger register file's capacitances would necessitate a slower access pace.

If you have 8 registers, the encoded register requires 3 bits, and instructions are already tightly packed.

Longer instructions would require more registers, which would reduce performance because each instruction byte requires cache memory, needs to be loaded, etc.

Operating systems would need to be updated to support the additional registers in order to facilitate save/restore during context switching. Additionally, the OS needs to work harder to keep things flowing and spends more time doing it than your equipment does the more registers that need to be saved or restored.

**Step 4: Conclusion**

**I completely disagree with the statement because using more CPU register.**

**Since the memory size of the register is limited, the CPU must use the main memory or cache in addition to the register if the instruction is larger.**

**Final Answer**

Thus, the number of registers that are available in the CPU and the size of our instructions will have a big impact on how quickly our code runs. A sufficient CPU register will aid in a quicker and more fluid execution.