QUIZ

True or False: Computer instructions are written in binary.

- False
- True

👏 That's right! Computer hardware can only understand `0`s and `1`s.

_____ is a design practice of ISAs that focuses on multi-step instructions and complex hardware.

- Complex Instruction Set Computers (CISC)

👏 That's right! CISC machines, like Intel's x86, are designed to take advantage of complex instructions by using bigger and more resource-consuming hardware components.

- Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)
- Reduced Instruction Set Computers (RISC)
- Microprocessor without Interlocked Pipelined Stages (MIPS)

_____ is a design practice of ISAs that focuses on simple, quickly executed instructions to improve efficiency and reduce power consumption.

- Simple Instruction Set Computer (SISC)
- Agile Methodology
- Complex Instruction Set Computers (CISC)
- Reduced Instruction Set Computers (RISC)

👏 Right on! RISC computers have come to dominate the mobile market because of these principles.

True or False: An x86 Processor (CISC) is compatible with a MIPS (RISC) machine code instruction.

False

👏 Right on! CISC and RISC machines are not able to read each other's instructions because their design principles are different.

True

The _____ is the fundamental digital circuit of the CPU that is used to perform logical and mathematical operations of binary data.

CU

ALU

👏 Correct! This is the "brain" of the CPU and is responsible for most of the heavy lifting of the executable processes.

Central Processing Unit

RAM

When an instruction is received by the CPU from the software, it is handled by the:

Control Unit (CU)

👏 Correct! The Control Unit is the foreman of the CPU, directing binary data to the right location.

Arithmetic and Logic Unit (ALU)

Registers

Random Access Memory (RAM)

Which option best describes the purpose of Instruction Set Architecture?

Tells an operating system how computers are designed across a network.

Translates high-level computer languages such as Java and Python into machine code.

Defines the communication rules between the software and hardware of a computer.

👏 Absolutely! Without these rules, the software would have no way of telling the hardware what needs to be done.

Creates a blueprint for electrical engineers when assembling a motherboard.

Where is the Instruction Set Architecture generally located on a computer?

RAM

Manufacturer's Documentation

👏 Correct! The ISA is a design practice and not stored on the computer. The only place to find the actual instructions is the ISA documentation.

Hard Drive

CPU Memory