Arturo Rivera

CIS 11

Professor Wilson

Assignment 2

Section 2.1.5

1. Aside from the registers, the CPU also has a high-frequency clock, a control unit, and an arithmetic logic unit.

2. The CPU connects to the rest of the system using the data bus, control bus, and the address bus.

3. Memory access takes more machine cycles because it takes four steps to read a single value, while cache memory uses static RAM so it is more easily available for the computer to read.

4. The three steps are fetch, decode, and execute.

5. The two extra steps are fetching the operand itself, which happens between decode and execute, and storing the result, the last step in the process.

Section 2.4.3

5. The 8259A PIC controller manages interrupts from hardware devices, like the keyboard, system clock, and disk drives.

Section 2.5.2

1. The application program is the most universal and portable because it has the least number of requirements to function properly.

3. Device drivers are necessary because they allow for multiple programs to run simultaneously as they access hardware in a controlled manner.

4. The BIOS function is the best function for communicating between the OS and the system hardware.

5. Yes, because each computer would have a different BIOS with different drivers that allow it to interact with the operating system.

Section 2.8

7. In the CPU the floating-point unit (FPU) would handle the floating-point arithmetic.

8. Each 32-bit data register has 8 bits.

9. True

10. True

12. False

19. True

20. False

25. All levels because programs can directly access input and output.

26. To execute the command as quickly as the hardware will permit.