Chapter 7

1. Register is a single permanent storage location within the CPU used for a particular, defined purpose.
2. General-purpose registers are basically accumulators.
3. Register file is a group of similar registers.
4. The instruction register holds the actual instruction being executed currently by the computer.
5. The program counter register holds the address of the current instruction.
6. Flags are 1-bit registers that are used to allow the computer to keep track of special conditions such as arithmetic carry and overflow, power failure, and internal computer error.
7. Status registers are several flags grouped.
8. Volatile or nonvolatile – volatile memory loses its contents when power is removed, the other doesn’t.
9. SRAM (Static) – faster to access than DRAM and is therefore useful in very-high-speed computers and for small amounts of high-speed memory, but its lower in bit density and more expensive.
10. Flash Memory – Rewriting of cells by erasing groups of memory cells selectively, and then writing the new pattern into the cells. Rewrite time is extremely slow compared to standard RAM.
11. ROM – used for situations where the software is built semi-permanently into the computer, is required as part of the computer’s software and is not expected to change over the life of the computer.
12. EEPROM (erasable Electrically Programmable) – uses a concept called Flowler-Nordheim tunneling to achieve rewritability.
13. Bus – Physical connection that transfers data from one location in the computer system to another.
14. Line – lines on a bus are often assigned names, to make individual lines easier to identify. Each line carries a single electrical signal.
15. Parallel bus – bus in which there is an individual line for each bit of data, address and control being used.
16. Serial bus – Data is transferred sequentially, one bit at a time, using a single data line pair.
17. Simplex line – A unidirectional line that data can pass through in both directions.
18. Half-duplex line – Bidirectional line that data can only pass through in one direction.
19. Full-duplex line – Can travel both directions simultaneously.
20. Point-to-point bus – Connect an external device to a connector and are often called cables.
21. Multipoint bus – Alternatively, a bus may be used to connect several points together.
22. Broadcast bus – signals produced by a source on the bus are “broadcast” to every other point on the bus in the same way as a radio station broadcasts to anyone who tunes in.
23. Multiplexed – Same line is used for both address and data at different times.
24. Bus protocol – Specification that spells out the meaning of each line and each signal on each line.
25. Logical shift – shift the data as you would expect, and zeros are shifted in to replace the bit spaces that have been vacated.
26. Arithmetic shift – Left arithmetic shifts to not shift the left bit, but zeros replaced the bits from the right as bits are moved to the left. Right arithmetic shifts fill the space moved bits with the sign bit rather than we zero.
27. Stack – used to store data when the most recently used data will also be the first needed. LIFO is Last-in, First-out.