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**Please explain how to transform an assembly language program into a binary executable file using basic reference tables.**

Assembly is a low level language that requires an assembler to convert the written code into a binary executable file which can be understood by the computer to follow the instructions. Compiler is used to convert the human readable language into something that a machine can understand. For assembly an assembler is used as a compiler to convert the assembly code into a binary executable. An assembler works from top to bottom in a sequential manner executing the instructions specified by the programmer. The operations table which is used to determine the type of instruction, the number of operands, and other information that is required to translate the instruction

**Please explain the formats of the different types of data (image, video, audio and alphanumerical, integers, floating point numbers).**.

**Alphanumerical:** Alphanumeric data is a combination of alphabetic and numeric characters. Usually, it means only the ASCII letters “A-Z”, “a-z” and the numbers “0–9”.

**Image:** Standardized means of organizing and storing digital images. Image files are composed of digital data in one of these formats that can be rasterized for use on a computer display or printer. An image file format may store data in uncompressed, compressed, or vector formats.

**Video:** Types of file format for storing digital video data, usually consists of a container containing video data in a video coding format and audio data in an audio coding format, sometimes also with synchronization information, subtitles, and metadata.

**Audio:** File formats for storing digital audio data on a computer system. The bit layout of the audio data (excluding metadata) is called the audio coding format and can be uncompressed, or compressed to reduce the file size, often using lossy compression. The data can be a raw bitstream in an audio coding format, but it is usually embedded in a container format or an audio data format with defined storage layer.

**Integers:** An integer is a number that can be written without a fractional component. Depending on compiling environment, the length and range of value are variable. For example, a 32-bit integer can represent a value from -2^15 to 2^15-1.

**Floating point numbers:** A number representation specifies some way of encoding a precise value with fractional and exponent component.