Binary Files

/bin/cat

- ELF 64-bit LSB shared object - keeps bunch of data about program

- ELF - binary file format — executable and linkable format files

- uses : executable, shared library, object file..

  - contains the program and its data

  - describes how the program should be loaded

  - contains metadata describing program components

  - ELF PROGRAM HEADERS - specify information needed to prepare the program for execution(INTERP, LOAD)

    - ELF section headers

      - .text - executable code of your program

      - .plt and .got - resolve and dispatch library calls….

Common sections

Text Section (.text): Contains the program's executable instructions.

Data Section (.data): Stores initialized global and static variables.

BSS Section (.bss): Reserves space for uninitialized global and static variables.

Symbol Table Section: Contains symbols (functions, variables) and their associated information.

Display program header using readelf command with -S option

Interacting with your ELF

- Creating executable files

  - gcc example.c -o example

- Creating linkable files

  - gcc -c example.c -o example.o

- Creating shared library

  - gcc -shared example1.o example2.o -o libexample.so