## What Does Happen When You Enter a Command?

- In Unix, when you enter a command and press ***enter***
  - The contents of the command line are sent to the ***shell***
  - The ***shell*** parses the received command line to identify
    - the ***name of the command***
    - The command ***options***, if any
    - The command ***arguments***, if any
  - The ***shell*** searches for an ***executable program*** that matches the ***name of the command***
    - If it is founded, it ***executes*** the program using the provided ***options*** and ***arguments***
    - Otherwise, it *displays an error message*





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- The ***syntax*** of a Unix command can be expressed as follow:

  *Command-name options arguments*
  - *Command-name*, each *option*, and each *argument* are ***separated*** by ***at least one <Space> or <Tab>***
  - *Options* (a.k.a. switches or flags):
    - Identified by
      - a *hyphen* followed by a single letter or number
      - *Multiple options* can be *concatenated* together using a single *hyphen*
    - Allow user to control how a command should do its job
    - You should consult the `man` pages to get the meaning of various options
    - A Unix command may have ***zero*** (the default) ***or more*** *options*
  - *Arguments:*
    - specify the data you want the command to use
    - Depending on a Unix command, it may have ***zero, one, or more*** *arguments*

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- Examples
  - `ls -l -F files1 file2 file3`
    `ls` ➔ *Command-name*
    `-l -F` ➔ *options*
    `files1 file2 file3` ➔ *arguments*
  - The following commands are equivalent:

```
ls -l -F files1 file2 file3
ls -F -l files1 file2 file3
ls -lF files1 file2 file3
ls -Fl files1 file2 file3
```





## What Does Happen When You Enter a Command?

- The following commands produce error messages as follow:
  - `cat "food in cans"`

```
cat: cannot open food in cans
```

  - `( If I had every \$ the parliament spent, what would I have?`

```
Too many ('s.
```

  - `got a light?`

```
got: No match.
```

  - `drink` (under sh shell)

```
drink: not found
```