

```
main
  initialize pipes
  create pipes
    0: input to output for echo
    1: input to translate
    2: translate to output
  disable terminal functions
  create three child processes, output, and translate
  assign the appropriate pipes to each
```

```
if parent
  input
  close pipes
  close child processes wit SIGTERM
if child 1
  output
if child 2
  translate
```

```
re-enable terminal functions
exit
```

```
input
  initialize buffer for input of size 5118
  while receiving characters from user
    if input is ^k
      abnormal terminate the program
    if input is T
      break
    if input is E
      send charcters to translate
    else
      send character to output
      save character to buffer
```

```
output
  allocate character buffer for input
  allocate buffer for translate pipe of size 5118
  while not exit and not terminate
    read from input pipe into input buffer
    read from translate pipe into translate buffer
    if something was read from input
      write character to screen
      clear buffer
    if something was read from translate
      write buffer to screen with \r\n
      clear buffer
  flush stdout
```

```
translate
  allocate buffer for pipe of size 5118
  while not exit and not terminate
```

```
read from pipe into buffer
if something was read
  for every character
    case ^-k
      send SIGQUIT
      break
    default
      parseBuffer
      send translation to output
      break;
```

parseBuffer

```
look at every character from source
if the character is K
  clear destination
if the character is X
  remove 1 character from the end of destination
if character is a
  put z at destination
else
  copy the character to destination
```