### **Pseudocode**

### **Input Process**

Turn off all terminal processes

Catch terminal signals for SGABRT and SIGTERM to be handled

Turn off all terminal processes

Create pipe for Input / Output processes

Create the translate process by calling fork()

Check if result == 0

Transition to **translate** state

Else

Create the output process by calling fork()

Check if result == 0

Transition to **output** state

Else

Transition to **get input** state

### **Get Input**

Close the translator read descriptor

Close the output read descriptor

Loop forever

Reads input from keyboard

When inputs are read

Transition to **Read** state

### **Read**

Have a buffer that stores the current line

Write each character to the input / output pipe

Check if abnormal termination character is read (^k)

Sends the SIGABRT signal to all three processes

Transition to **End** state

Check if the carriage return character is read (E)

Write the buffer to the input / translate pipe

Re-initialize the buffer

Else

Store each character into the buffer

### **Output Process**

Close the output write descriptor

Forever loop

Keeps on reading message from the input / output pipe

When something is read

Transition to **Display** state

### **Display**

Output string onto the terminal screen

### **Translate Process**

Close the input / output read descriptor

Close the input / translate write descriptor

Forever loop

Keeps on reading message from the input / translate pipe

When something is read

Transition to **Translate** state

### **Translate**

Close the output read descriptor

Close the translate write descriptor

Have a buffer for message read from the input / translate pipe

Have a buffer for translated message for input / translated pipe

Loops through the message read from input /translate pipe

If ‘a’ is read

Replace it with ‘z’ and add it onto the translated buffer

If backspace(‘X’) is read

Delete the previous character

If line kill(‘K’) is read

Delete all preceding characters

If the normal termination(‘T’) is read

Send SIGTERM to all three processes

Else

Adds each character to the translated buffer

Write the translated buffer to the input / output buffer