

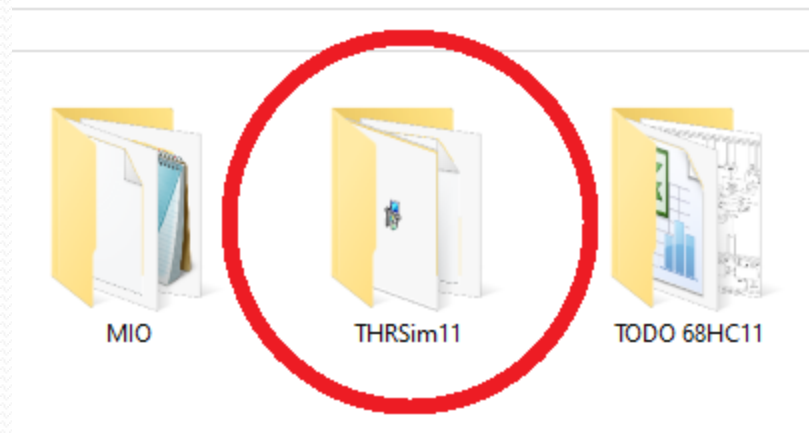
Simulación del programa (START) usando el software THRSim11

21 de octubre de 2025

M.I. Pedro Ignacio Rincón Gómez
ESTRUCTURA Y PROGRAMACIÓN DE
COMPUTADORAS

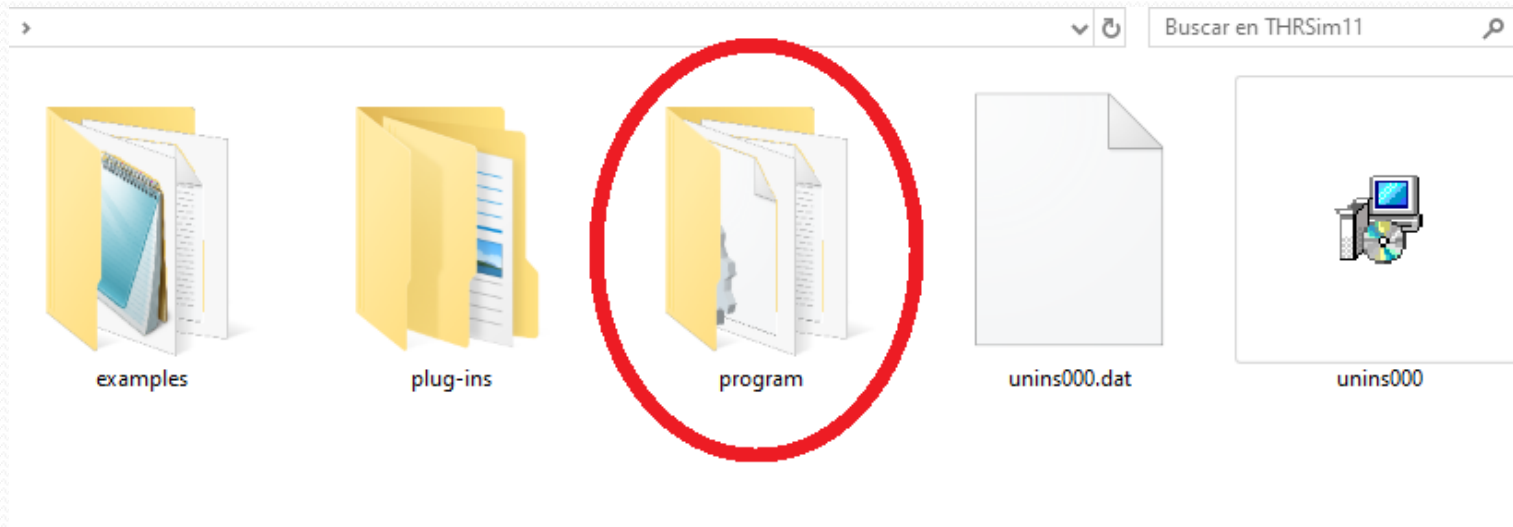
Simulación de un programa con el THRSim11.exe

1. En la carpeta de dropbox de la materia, ubique la carpeta con el nombre THRSim11 y ábrala



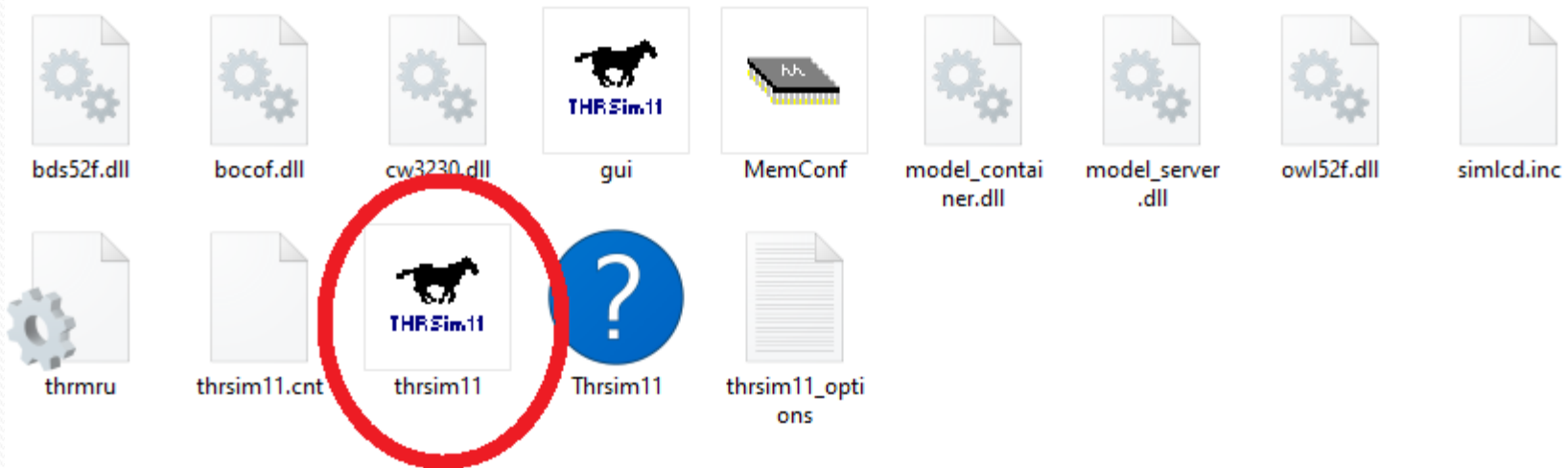
Simulación de un programa con el THRSim11.exe

2. Ubique la carpeta denominado “program” y ábrala

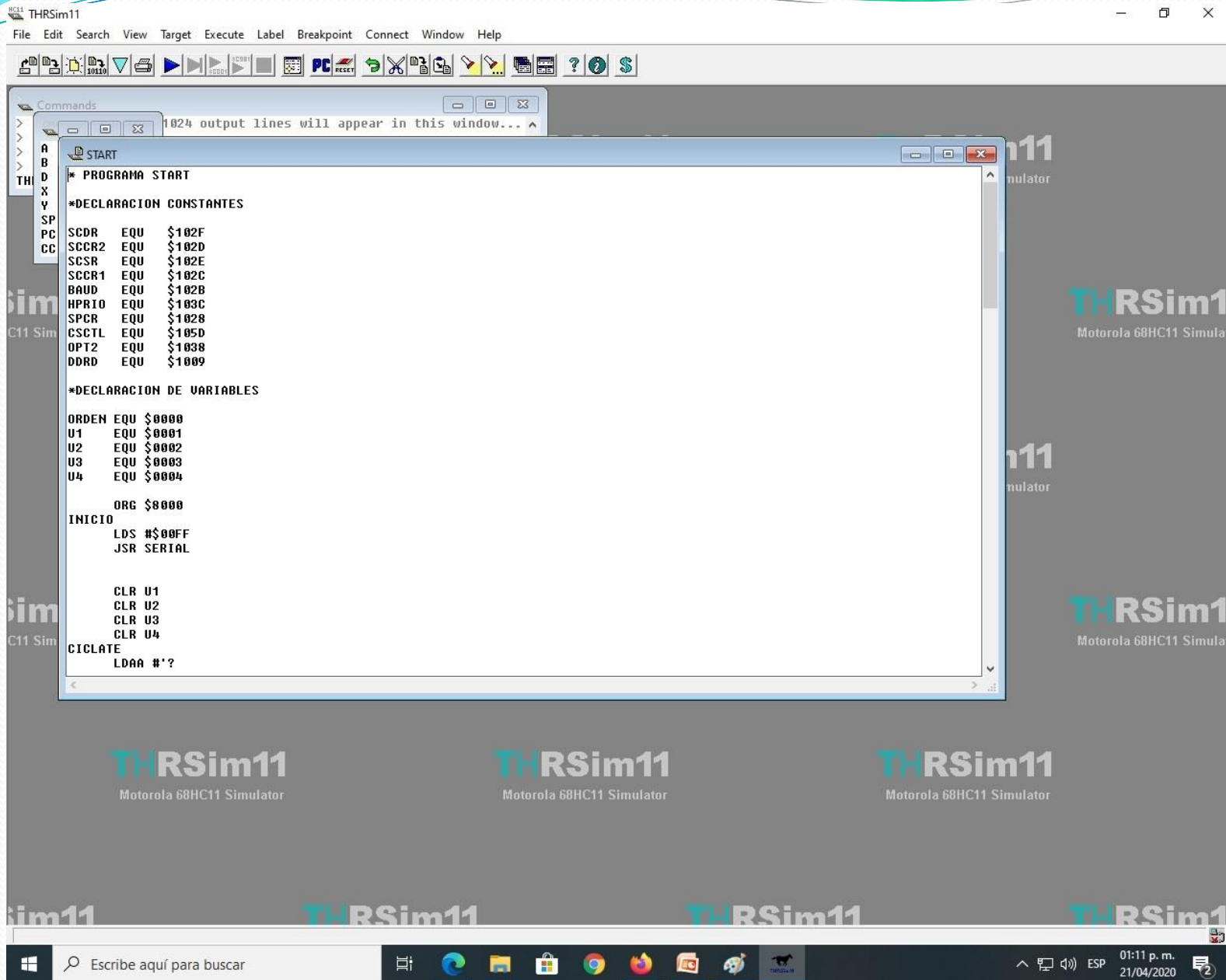


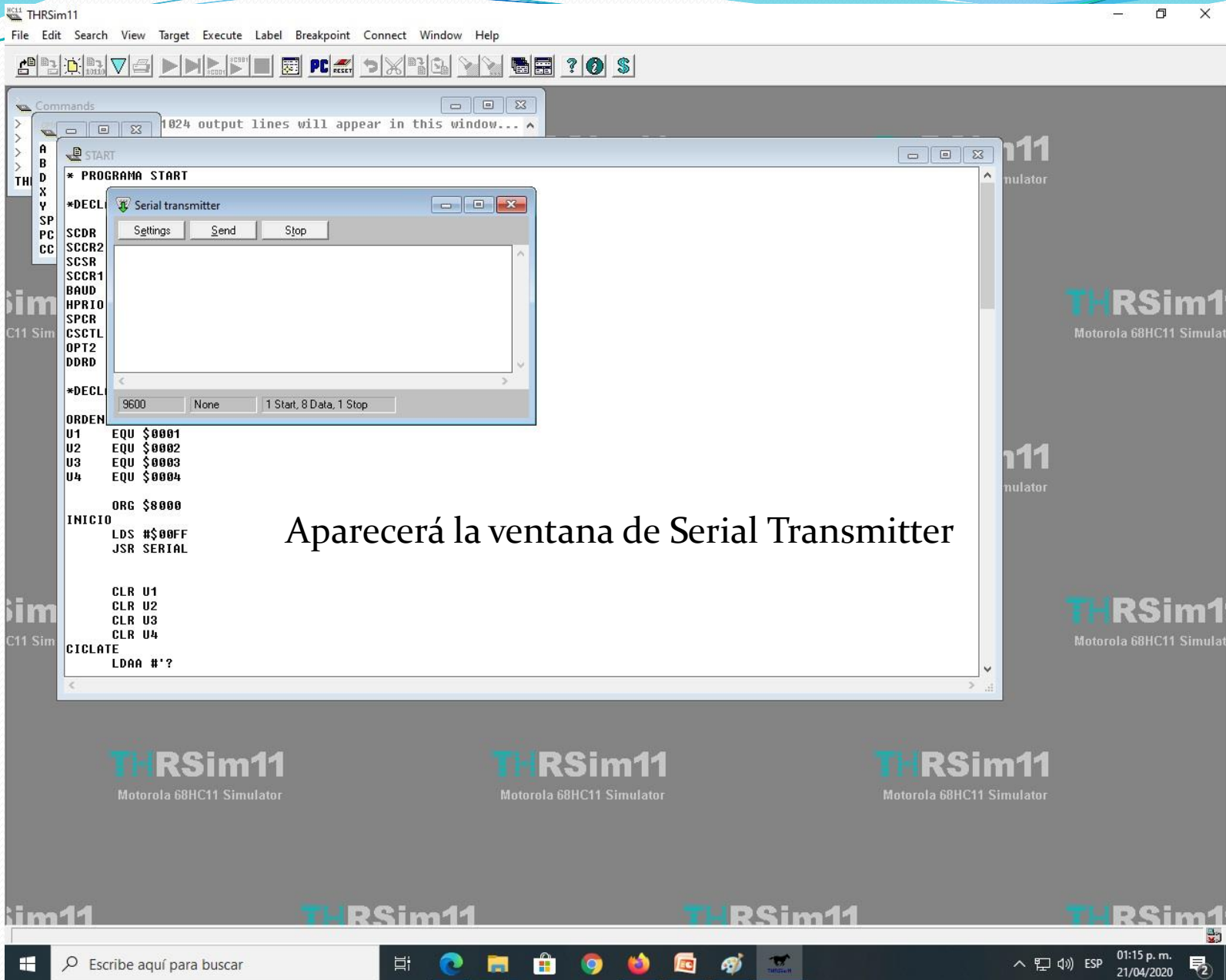
Simulación de un programa con el THRSim11.exe

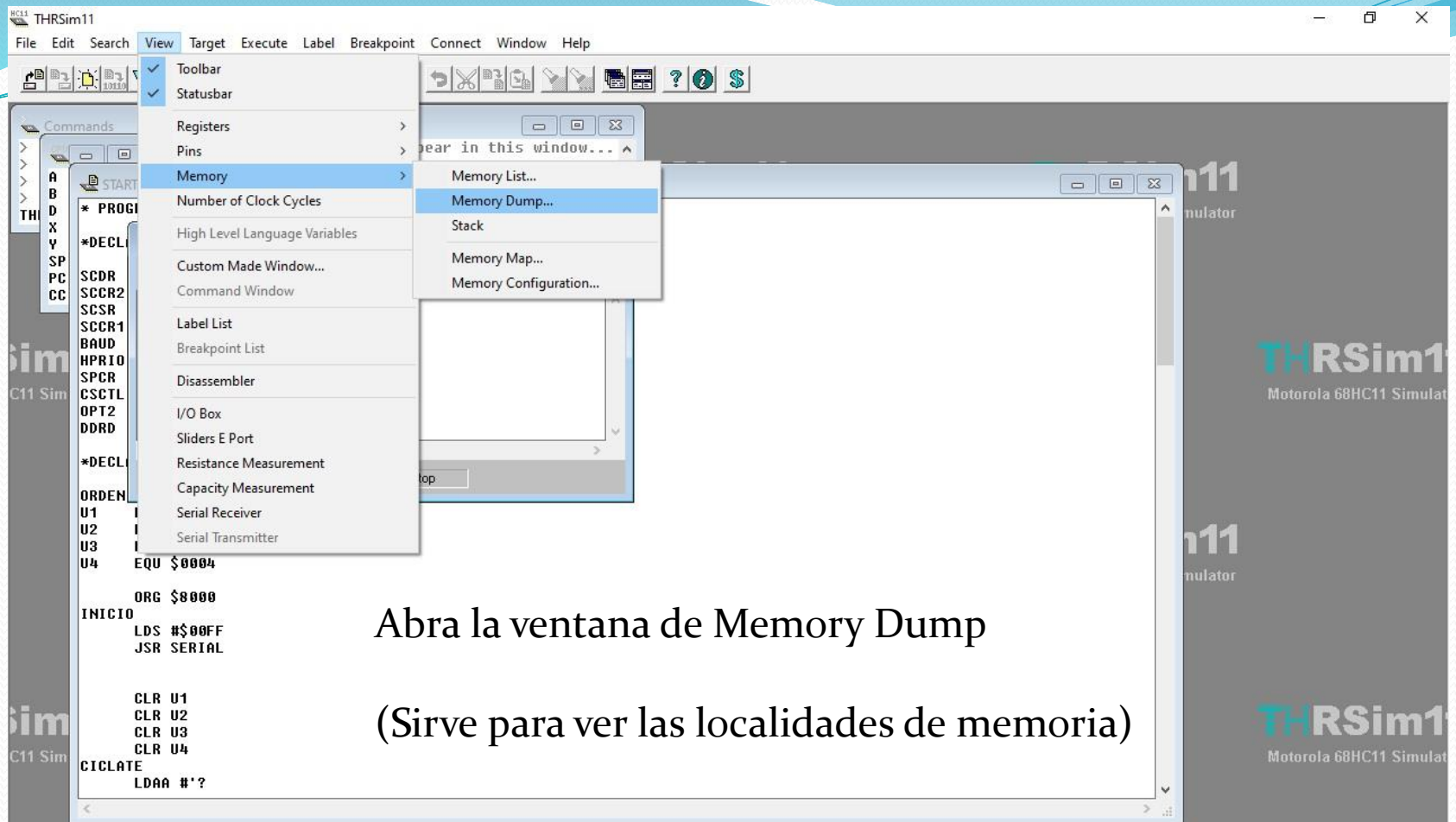
3. Ubique el archivo denominado “thrsim11.exe” y haga doble click con el mouse



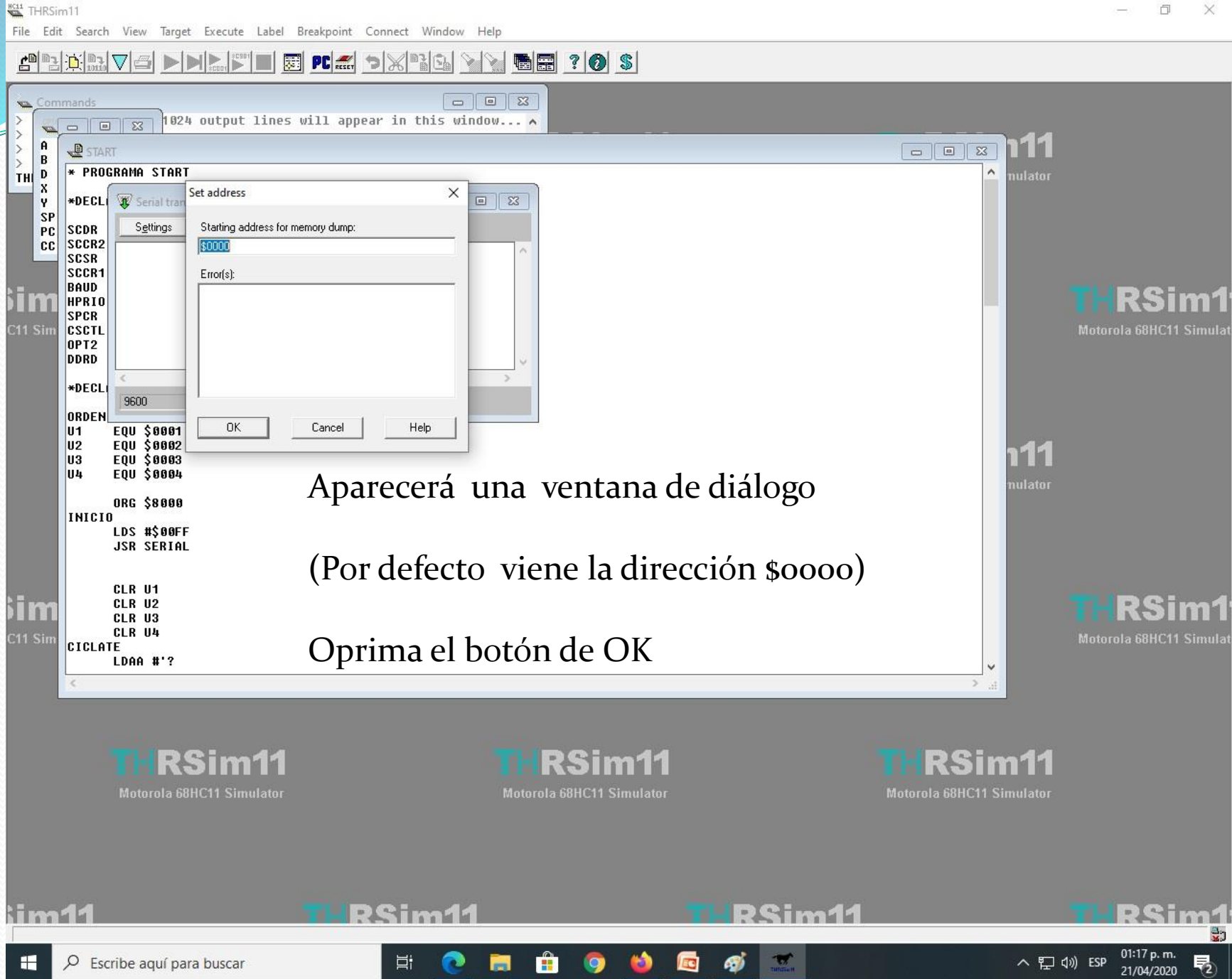
Cargue el programa start.asc







Open a window to view a memory dump...



Aparecerá una ventana de diálogo

(Por defecto viene la dirección \$0000)

Oprima el botón de OK

THRSim11

File Edit Search View Target Execute Label Breakpoint Connect Window Help

1024 output lines will appear in this window...

START

* PROGRAMA START

*DECL

Serial transmitter

Settings Send Stop

Memory dump

Address	Hex	ASCII
\$0000	FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	.....
\$0010	FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	.....
\$0020	FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	.....
\$0030	FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	.....
\$0040	FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	.....
\$0050	FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	.....
\$0060	FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	.....
\$0070	FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF	.....

9600

ORDEN

U1 EQU \$0001

U2 EQU \$0002

U3 EQU \$0003

U4 EQU \$0004

ORG \$8000

INICIO

LDS #\$00FF

JSR SERIAL

CLR U1

CLR U2

CLR U3

CLR U4

CICLATE

LDA #'?'

Oprima el botón virtual para ordenar las ventanas

THRSim11 Motorola 68HC11 Simulator

THRSim11 Motorola 68HC11 Simulator

THRSim11 Motorola 68HC11 Simulator

THRSim11 Motorola 68HC11 Simulator

THRSim11 Motorola 68HC11 Simulator

2 notificaciones nuevas

Escribe aquí para buscar

01:18 p. m. 21/04/2020



Memory dump

\$0000	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0010	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0020	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0030	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0040	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0050	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0060	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0070	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0080	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0090	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$00a0	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$00b0	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$00c0	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$00d0	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$00e0	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$00f0	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0100	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0110	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0120	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0130	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0140	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0150	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0160	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0170	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0180	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$0190	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....
\$01a0	ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff	.....

START

```

* PROGRAMA START

*DECLARACION CONSTANTES

SCDR EQU $102F
SCCR2 EQU $102D
SCSR EQU $102E
SCCR1 EQU $102C
BAUD EQU $102B
HPRIO EQU $103C
SPCR EQU $1028
CSCTL EQU $105D
OPT2 EQU $1038
DDRD EQU $1009
    
```

CPU registers

```

A $bd
B $13
D $bd13
X $30a7
Y $7641
SP $03ff
PC $f100
CC %11010000
    
```

Serial transmitter

Settings Send Stop

Todas las ventanas se acomodan automáticamente.

9600 None 1 Start, 8 Data, 1 Stop

Commands

```

>
> The last 1024 output lines will appear in this window...
>
>
>
> THRSim11>
    
```


THRSim11

File Edit Search View Target Execute Label Breakpoint Connect Window Help

Memory dump

```
$0000 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0010 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0020 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0030 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0040 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0050 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0060 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0070 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0080 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0090 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00a0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00b0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00c0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00d0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00f0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0100 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0110 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0120 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0130 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0140 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0150 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0160 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0170 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0180 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0190 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$01a0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
```

START

```
* PROGRAMA START

*DECLARACION CONSTANTES

SCDR EQU $102F
SCCR2 EQU $102D
SCSR EQU $102E
SCCR1 EQU $102C
BAUD EQU $102B
HPRIO EQU $103C
SPCR EQU $1028
CSCTL EQU $105D
OPT2 EQU $1038
DDRD EQU $1009
```

CPU registers

```
A $bd
B $13
D $bd13
X $30a7
Y $7641
SP $03ff
PC $f100
CC %11010000
```

Serial transmitter

Settings Send Stop

Todas las ventanas se acomodan automáticamente.

Nóten que la ventana de START está seleccionada.

9600 None 1 Start, 8 Data, 1 Stop

Commands

```
>
> The last 1024 output lines will appear in this window...
>
>
>
> THRSim11>
```

THRSim11

File Edit Search View Target Execute Label Breakpoint Connect Window Help

Memory dump

```
$0000 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0010 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0020 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0030 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0040 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0050 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0060 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0070 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0080 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0090 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00a0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00b0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00c0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00d0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00f0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0100 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0110 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0120 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0130 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0140 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0150 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0160 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0170 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0180 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0190 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$01a0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
```

START

```
* PROGRAMA START

*DECLARACION CONSTANTES

SCDR EQU $102F
SCCR2 EQU $102D
SCSR EQU $102E
SCCR1 EQU $102C
BAUD EQU $102B
HPRIO EQU $103C
SPCR EQU $1028
CSCTL EQU $105D
OPT2 EQU $1038
DDRD EQU $1009
```

CPU registers

```
A $bd
B $13
D $bd13
X $30a7
Y $7641
SP $03ff
PC $f100
CC %11010000
```

Serial transmitter

Settings Send Stop

Cuando la ventana de START está seleccionada. También se pone de color azul marino el botón para compilar y correr el programa

9600 None 1 Start, 8 Data, 1 Stop

Commands

```
>
> The last 1024 output lines will appear in this window...
>
>
> THRSim11>
```

Windows taskbar: Escribe aquí para buscar, 01:22 p. m., 21/04/2020

THRSim11

File Edit Search View Target Execute Label Breakpoint Connect Window Help

Memory dump

```
$0000 3f 00 00 00 00 ff ff ff ff ff ff ff ff ff ff ? .....
$0010 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0020 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0030 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0040 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0050 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0060 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0070 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0080 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0090 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00a0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00b0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00c0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00d0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$00f0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0100 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0110 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0120 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0130 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0140 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0150 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0160 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0170 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0180 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$0190 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
$01a0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff .....
```

START

```
* PROGRAMA START

*DECLARACION CONSTANTES

SCDR EQU $102F
SCCR2 EQU $102D
SCSR EQU $102E
SCCR1 EQU $102C
BAUD EQU $102B
```

C:\usb\USB ABRIL 2020\68hc11\START.LST

```
$8006 7f 00 01 CLR U1
$8009 7f 00 02 CLR U2
$800c 7f 00 03 CLR U3
$800f 7f 00 04 CLR U4

CICLATE
$8012 86 3f LDAA #'?
$8014 97 00 STAA ORDEN

CICLO
$8016 96 00 LDAA ORDEN
$8018 81 3f CMPA #'?
$801a 27 fa BEQ CICLO

$801c d6 01 LDAB U1
$801e 26 15 BNE SIGUET

BORRA
$8020 7f 00 01 CLR U1
$8023 7f 00 02 CLR U2
$8026 7f 00 03 CLR U3
$8029 7f 00 04 CLR U4
```

Serial transmitter

Settings Send Stop

En esta frase está la secuencia START

Cuando se oprime el botón de RUN, el programa se compila y si no tiene errores se empieza a ejecutar. Entonces se abre una ventana donde una frnja verde indica que línea se está ejecutando.

Commands

```
>
> The last 1024 output lines will appear in this window...
>
>
> THRSim11>
```

9600 None 1 Start, 8 Data, 1 Stop

Running...

Windows

Escribe aquí para buscar

01:24 p. m. 21/04/2020

THRSim11

File Edit Search View Target Execute Label Breakpoint Connect Window Help

Memory dump

```
$0000 3F 00 00 00 00 FF FF FF FF FF FF FF FF FF FF ? .....
$0010 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0020 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0030 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0040 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0050 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0060 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0070 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0080 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0090 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00a0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00b0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00c0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00d0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00e0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00f0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0100 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0110 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0120 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0130 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0140 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0150 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0160 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0170 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0180 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0190 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$01a0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
```

START

```
* PROGRAMA START

*DECLARACION CONSTANTES

SCDR EQU $102F
SCCR2 EQU $102D
SCSR EQU $102E
SCCR1 EQU $102C
BAUD EQU $102B
```

C:\usb\USB ABRIL 2020\68hc11\START.LST

```
$0006 7F 00 01 CLR U1
$0009 7F 00 02 CLR U2
$000c 7F 00 03 CLR U3
$000f 7F 00 04 CLR U4

CICLATE
$0012 86 3F LDAA #'?
$0014 97 00 STAA ORDEN

CICLO
$0016 96 00 LDAA ORDEN
$0018 81 3F CMPA #'?
$001a 27 Fa BEQ CICLO

$001c d6 01 LDAB U1
$001e 26 15 BNE SIGUET

BORRA
$0020 7F 00 01 CLR U1
$0023 7F 00 02 CLR U2
$0026 7F 00 03 CLR U3
$0029 7F 00 04 CLR U4
```

Serial transmitter

Send Stop

En esta frase está la secuencia START

Escriba en esta ventana la cadena de caracteres que se va a transmitir y luego oprima el botón: SEND

Commands

```
>
> The last 1024 output lines will appear in this window...
>
> THRSim11>
```

9600 None 1 Start, 8 Data, 1 Stop

Running...

Windows Search: Escribe aquí para buscar

Taskbar: Edge, File Explorer, Store, Chrome, Firefox, VS Code, THRSim11

System Tray: 01:24 p. m. 21/04/2020

THRSim11

File Edit Search View Target Execute Label Breakpoint Connect Window Help

Memory dump

```
$0000 3F 00 00 00 00 FF FF FF FF FF FF FF FF FF FF ? .....
$0010 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0020 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0030 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0040 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0050 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0060 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0070 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0080 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0090 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00a0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00b0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00c0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00d0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00e0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$00f0 FF FF FF FF FF FF FF FF FF FF 04 00 3F 30 a7 .....
$0100 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0110 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0120 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0130 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0140 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0150 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0160 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0170 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0180 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$0190 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
$01a0 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF .....
```

START

```
* PROGRAMA START

*DECLARACION CONSTANTES

SCDR EQU $102F
SCCR2 EQU $102D
SCSR EQU $102E
SCCR1 EQU $102C
BAUD EQU $102B
```

C:\usb\USB ABRIL 2020\68hc11\START.LST

```
$0012 86 3F LDAA #'?
$0014 97 00 STAA ORDEN

CICLO
$0016 96 00 LDAA ORDEN
$0018 81 3F CMPA #'?
$001a 27 fa BEQ CICLO

$001c d6 01 LDAB U1
$001e 26 15 BNE SIGUET

BORRA
$0020 7f 00 01 CLR U1
$0023 7f 00 02 CLR U2
$0026 7f 00 03 CLR U3
$0029 7f 00 04 CLR U4
$002c 81 53 CMPA #'S
```

Serial transmitter

Settings Send Stop

En esta frase está la secuencia START

Conforme se transmite cada carácter de la cadena se ve que una franja azul nos indica que elementos serán los próximos a transmitir.

Commands

```
>
> The last 1024 output lines will appear in this window...
>
> THRSim11>
```

Running...

9600 None 1 Start, 8 Data, 1 Stop

Windows taskbar: Escribe aquí para buscar, 01:30 p. m., 21/04/2020

THRSim11

File Edit Search View Target Execute Label Breakpoint Connect Window Help

Memory dump

ESTAR..

START

* PROGRAMA START

*DECLARACION CONSTANTES

SCDR EQU \$102F

SCCR2 EQU \$102D

SCSR EQU \$102E

SCCR1 EQU \$102C

BAUD EQU \$102B

C:\usb\USB ABRIL 2020\68hc11\START.LST

\$0060 86 45 LDAA #'E

\$0062 97 00 STAA ORDEN

\$0064 7e 80 60 JMP EXITO

SERIAL

\$0067 cc 30 2c LDD #\$302C * CONFIGURA PUERTO SERIAL

\$006a b7 10 2b STAA BAUD * BAUD 9600 para cristal de 8MHz

\$006d f7 10 2d STAB SCCR2 * HABILITA RX Y TX PERO INTERRUPTCN SOLO RX

\$0070 86 00 LDAA #\$00

\$0072 b7 10 2c STAA SCCR1 * 8 BITS

\$0075 86 fe LDAA #\$FE * CONFIG PUERTO D COMO SALIDAS (EXCEPTO PD0)

\$0077 b7 10 09 STAA DDRD * SEA ENABLE DEL DISPLAY PD4 Y RS PD3

Serial transmitter

Settings Send Stop

En esta frase está la secuencia START

Una vez que la frase se transmite por completo se puede ver que las variables tienen los valores validados. Noten cómo en la localidad cero queda la E de éxito.

Commands

The last 1024 output lines will appear in this window...

THRSim11>

Running...

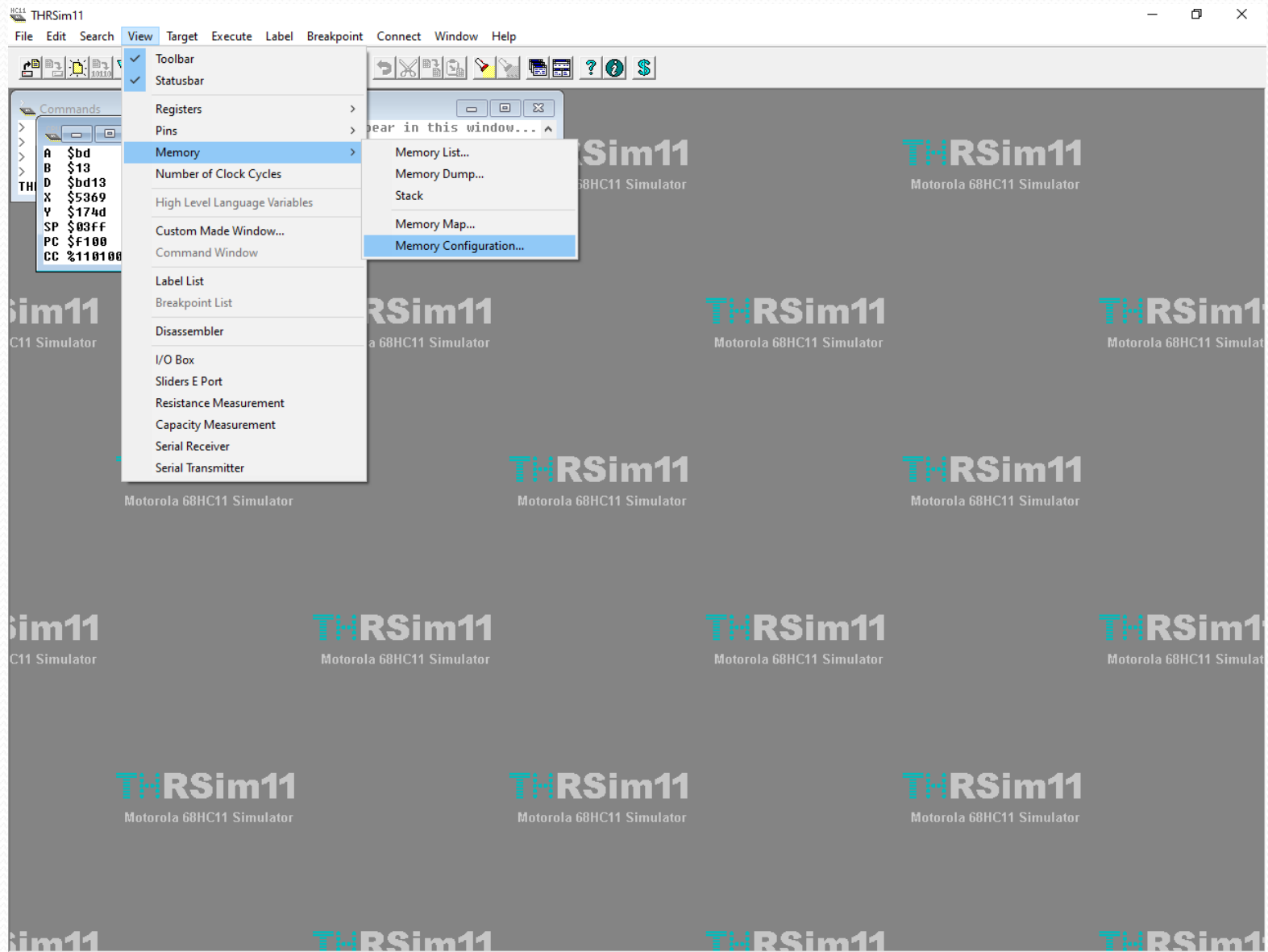
9600 None 1 Start, 8 Data, 1 Stop

01:32 p. m. 21/04/2020

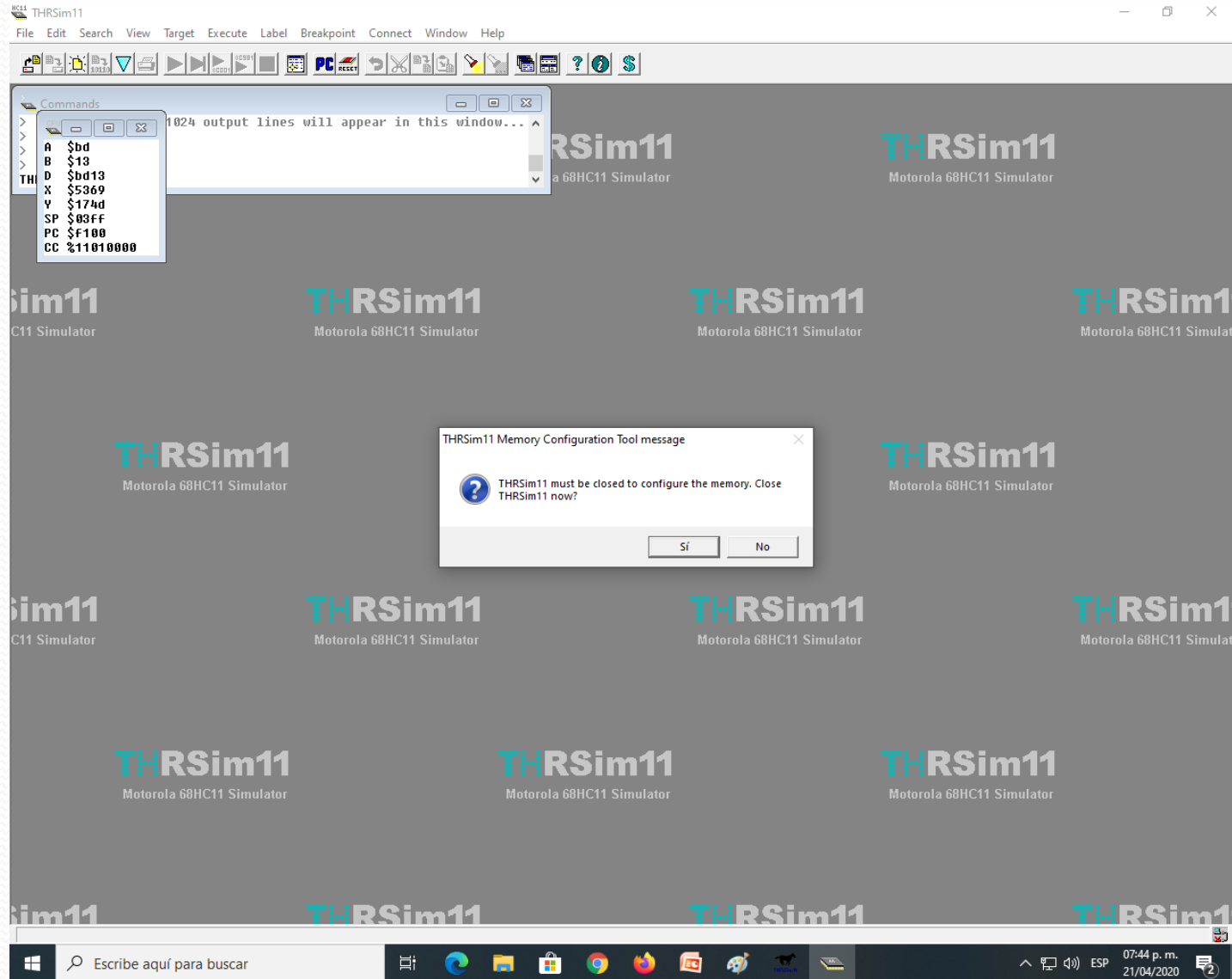
Para configurar el mapa de memoria en el simulador

- Este proceso es recomendable de hacer antes de cargar un programa. Si ya se configuró en alguna ocasión, no es necesario hacerlo nuevamente salvo que cambien las condiciones de RAM y ROM de nuestro proyecto.
- Es conveniente revisar que se cuente con la suficiente memoria tanto de RAM como de ROM, para que el simulador opere de forma adecuada. De otra forma desplegará mensajes de error y de advertencia cuando pretendamos simular un programa.

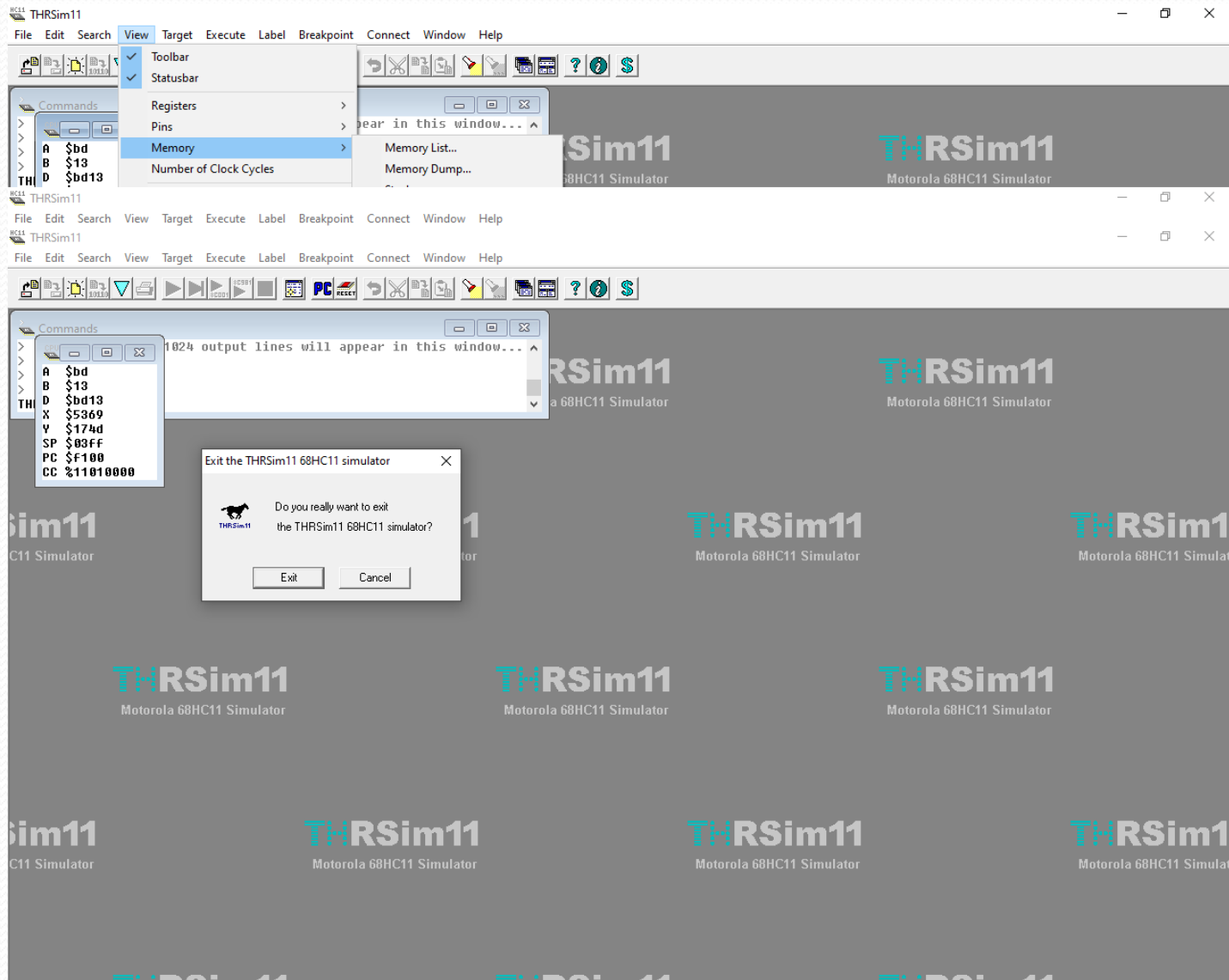
- Para configurar el mapa de memoria (Antes de nada)



- Aparece una ventana de dialogo y se debe oprimir “Si”



- Aparece otra ventana de dialogo y se debe oprimir “Exit”



- Aparece otra ventana de dialogo donde se pueden administrar las áreas de ROM y RAM, después oprima OK

The screenshot shows the 'THRSim11 Memory Configuration Tool' dialog box. It has a title bar with a close button. The main area is titled 'Memory Config' and includes a version string 'Version 1.02 © 2004 Harry Broeders' and a note 'Can be used with THRSim11 version 4.00 or higher'. A dropdown menu is set to 'User defined'. The configuration is organized into several sections: RAM (RAM0, RAM1, RAM2, RAM3), ROM (ROM0, ROM1, ROM2, ROM3), and IO. Each section has an 'enabled' checkbox and two text boxes for 'Start' and 'End' addresses. The 'LCD enabled' checkbox is also present. The bottom right corner features the 'THRSim11 Motorola 68HC11 Simulator' logo.

Memory Type	Enabled	Start Address	End Address
RAM0	<input type="checkbox"/>	\$0000	\$03FF
RAM1	<input checked="" type="checkbox"/>	\$B600	\$B7FF
RAM2	<input type="checkbox"/>	\$0000	\$00FF
RAM3	<input type="checkbox"/>	\$0000	\$00FF
ROM0	<input checked="" type="checkbox"/>	\$F100	\$FFFF
ROM1	<input checked="" type="checkbox"/>	\$8000	\$8FFF
ROM2	<input type="checkbox"/>	\$0000	\$00FF
ROM3	<input type="checkbox"/>	\$0000	\$00FF
IO		\$1000	\$103F
LCD	<input checked="" type="checkbox"/>	LCD data: \$1040	LCD control: \$1041