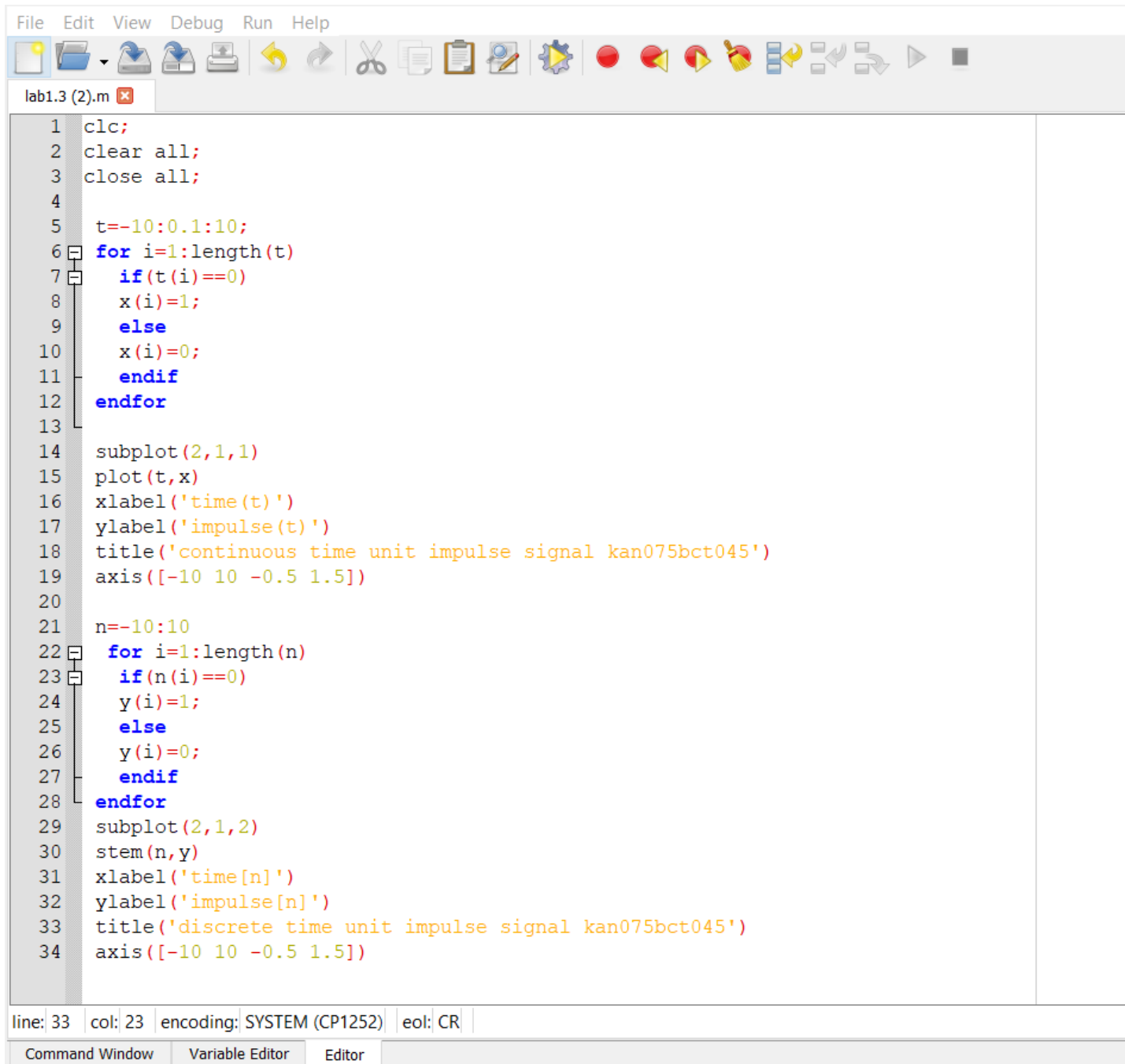


OBSERVATION

SOURCE CODE

1.IMPULSE SIGNAL



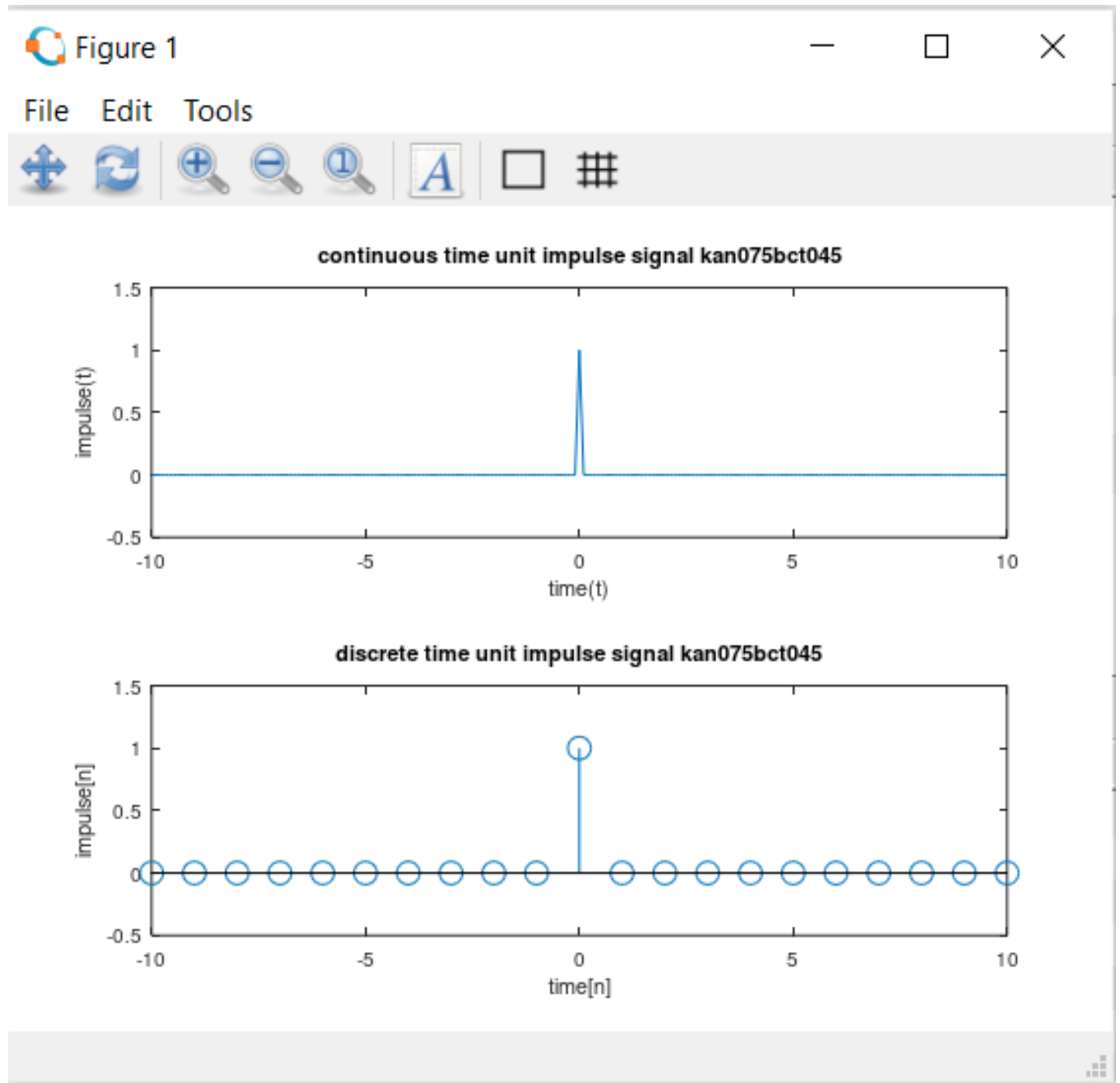
The image shows a MATLAB IDE window titled 'lab1.3 (2).m'. The code defines two unit impulse signals. The first signal, 'x', is a continuous-time impulse defined over the interval t = -10 to 10 with a step of 0.1. It has a value of 1 at t = 0 and 0 elsewhere. The second signal, 'y', is a discrete-time impulse defined over the interval n = -10 to 10. It has a value of 1 at n = 0 and 0 elsewhere. Both signals are plotted using 'subplot(2,1,1)' and 'subplot(2,1,2)'. The continuous plot uses 'plot(t,x)' and the discrete plot uses 'stem(n,y)'. Both plots have x-axis labels 'time(t)' and 'time[n]', y-axis labels 'impulse(t)' and 'impulse[n]', and titles 'continuous time unit impulse signal kan075bct045' and 'discrete time unit impulse signal kan075bct045' respectively. The axes for both plots are set to [-10 10 -0.5 1.5].

```
1 clc;
2 clear all;
3 close all;
4
5 t=-10:0.1:10;
6 for i=1:length(t)
7     if(t(i)==0)
8         x(i)=1;
9     else
10        x(i)=0;
11    endif
12 endfor
13
14 subplot(2,1,1)
15 plot(t,x)
16 xlabel('time(t)')
17 ylabel('impulse(t)')
18 title('continuous time unit impulse signal kan075bct045')
19 axis([-10 10 -0.5 1.5])
20
21 n=-10:10
22 for i=1:length(n)
23     if(n(i)==0)
24         y(i)=1;
25     else
26         y(i)=0;
27     endif
28 endfor
29 subplot(2,1,2)
30 stem(n,y)
31 xlabel('time[n]')
32 ylabel('impulse[n]')
33 title('discrete time unit impulse signal kan075bct045')
34 axis([-10 10 -0.5 1.5])
```

line: 33 col: 23 encoding: SYSTEM (CP1252) eol: CR

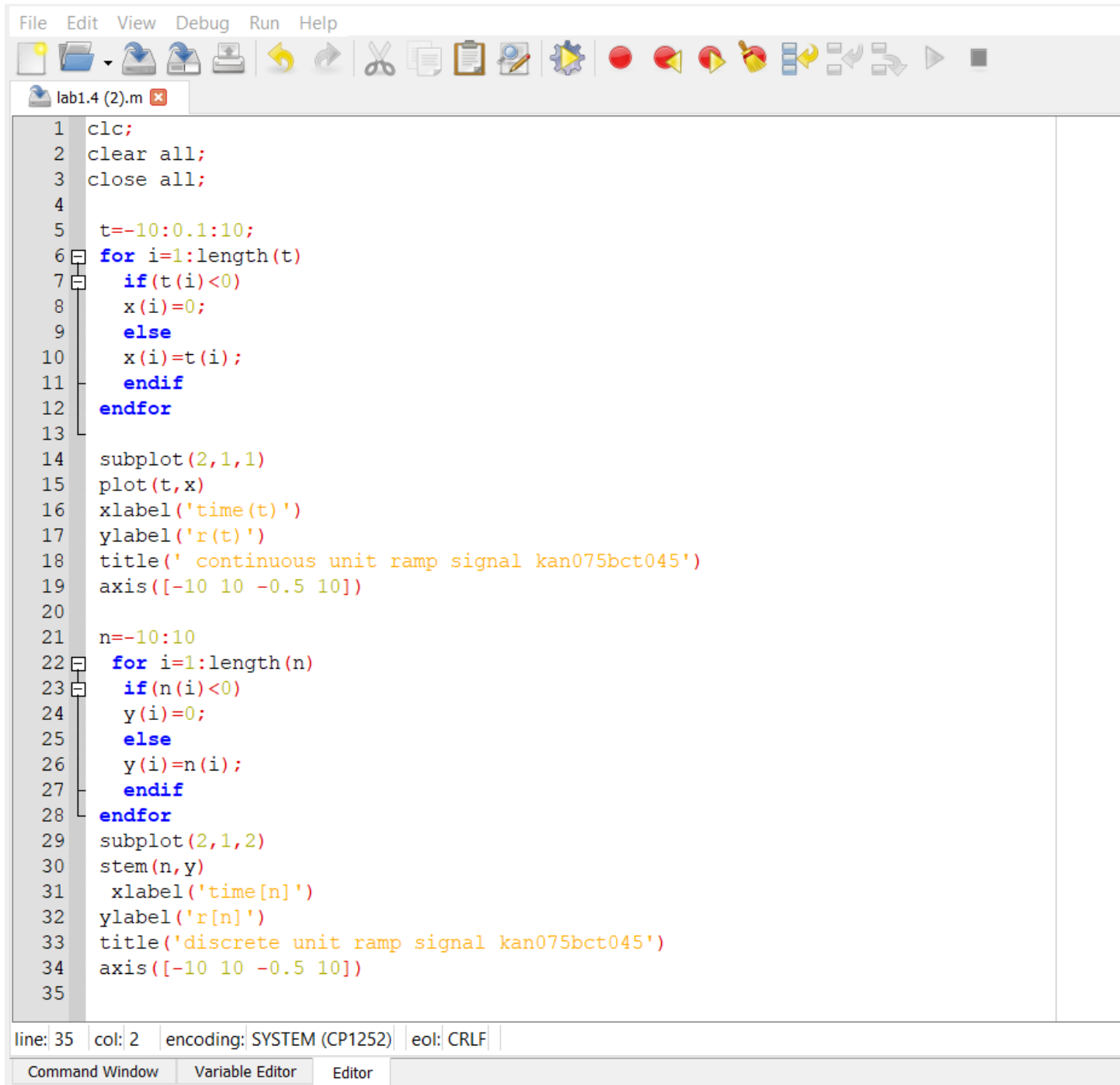
Command Window Variable Editor Editor

OUTPUT



2.RAMP SIGNAL

SOURCE CODE



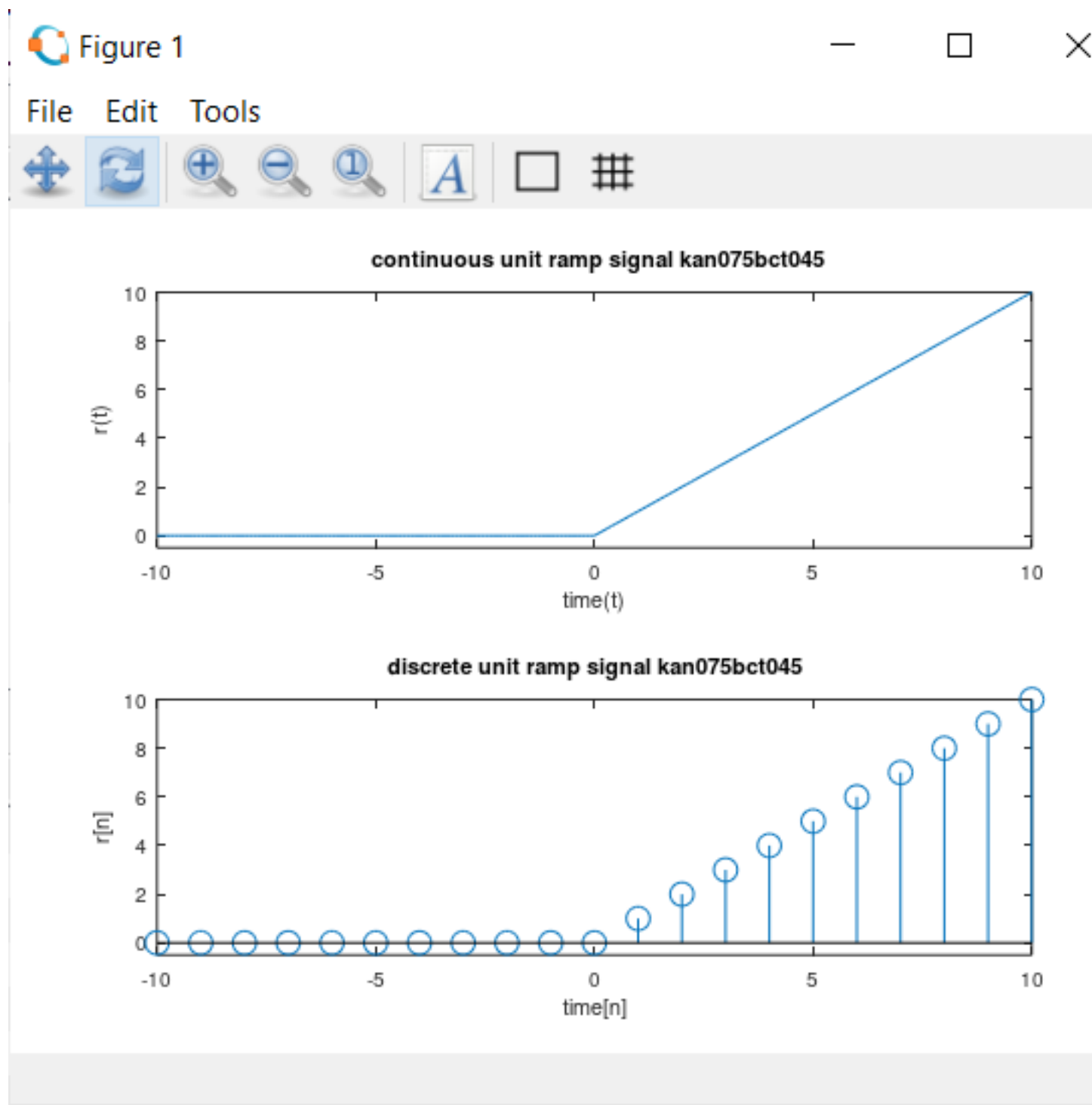
The image shows a MATLAB IDE window with a menu bar (File, Edit, View, Debug, Run, Help) and a toolbar. The active file is 'lab1.4 (2).m'. The code defines two ramp signals: a continuous-time signal 'x' and a discrete-time signal 'y'. The continuous signal is plotted as a solid line, and the discrete signal is plotted as a stem plot. Both plots show a ramp starting at zero for negative time and increasing linearly for positive time.

```
1 clc;
2 clear all;
3 close all;
4
5 t=-10:0.1:10;
6 for i=1:length(t)
7     if(t(i)<0)
8         x(i)=0;
9     else
10        x(i)=t(i);
11    endif
12 endfor
13
14 subplot(2,1,1)
15 plot(t,x)
16 xlabel('time(t)')
17 ylabel('r(t)')
18 title(' continuous unit ramp signal kan075bct045')
19 axis([-10 10 -0.5 10])
20
21 n=-10:10
22 for i=1:length(n)
23     if(n(i)<0)
24         y(i)=0;
25     else
26         y(i)=n(i);
27     endif
28 endfor
29 subplot(2,1,2)
30 stem(n,y)
31 xlabel('time[n]')
32 ylabel('r[n]')
33 title('discrete unit ramp signal kan075bct045')
34 axis([-10 10 -0.5 10])
35
```

line: 35 col: 2 encoding: SYSTEM (CP1252) eol: CRLF

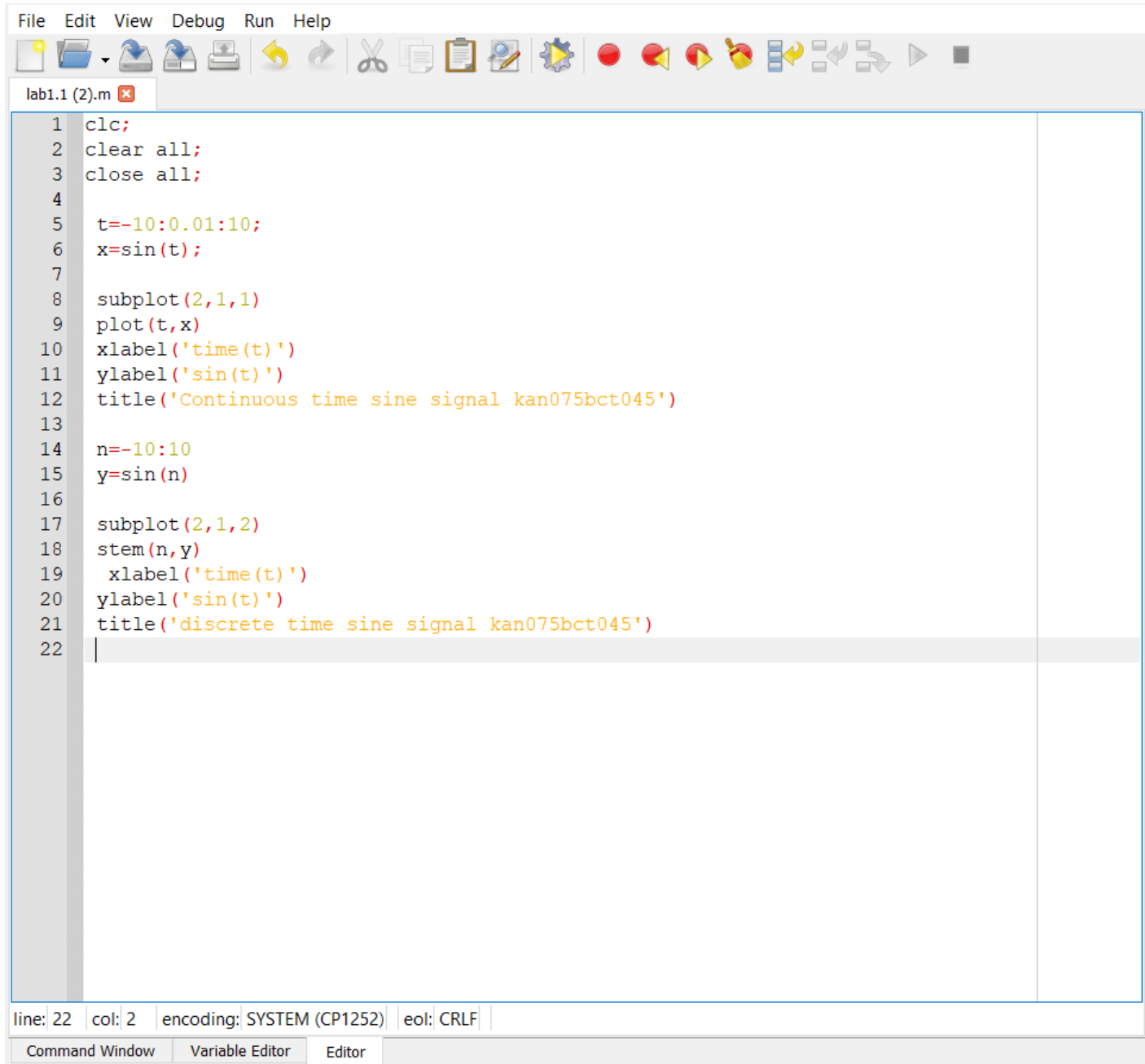
Command Window Variable Editor Editor

OUTPUT



3.SINE SIGNAL

SOURCE CODE



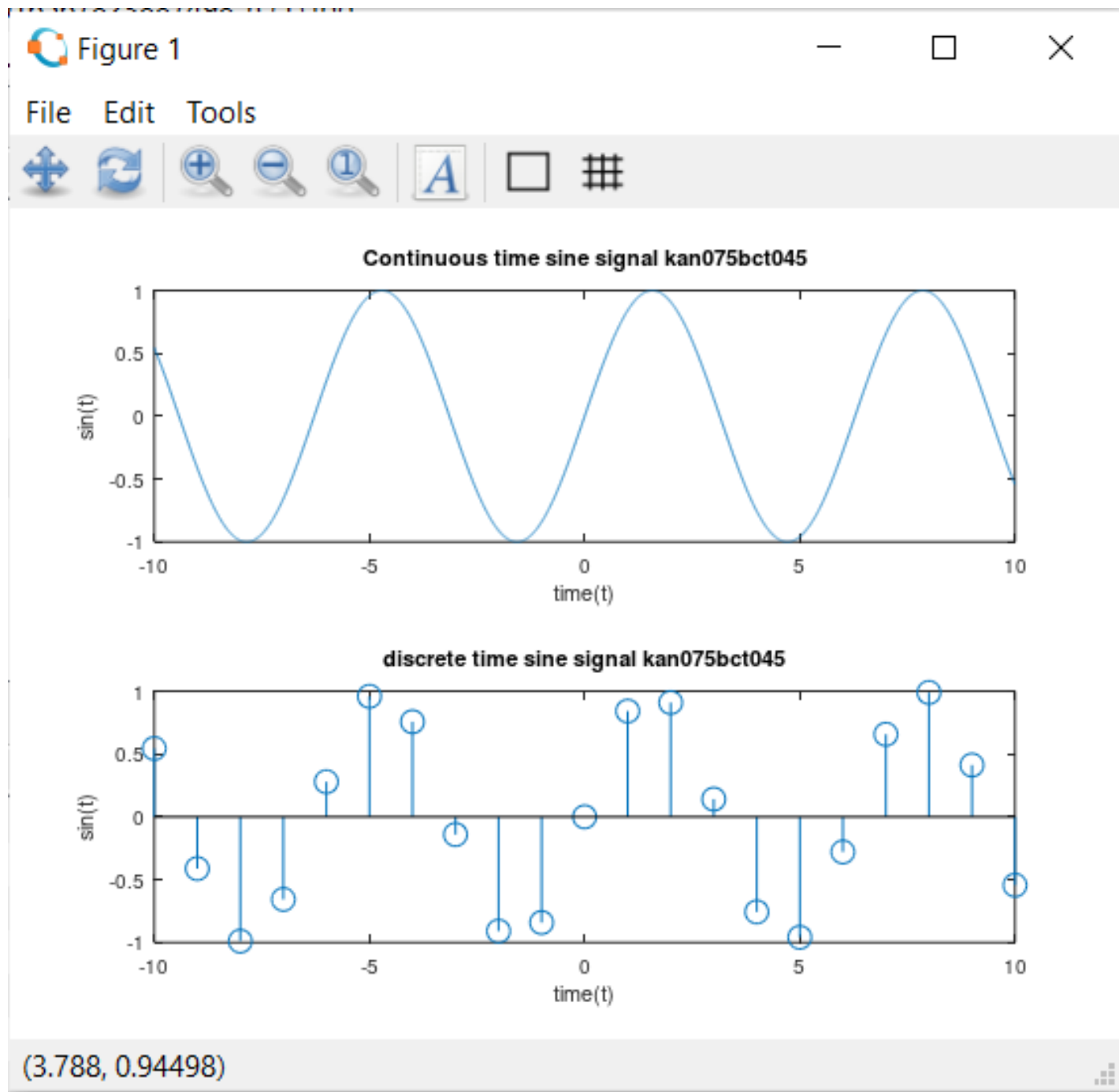
The image shows a MATLAB IDE window titled 'lab1.1 (2).m'. The code defines two sine signals: a continuous-time signal $x = \sin(t)$ and a discrete-time signal $y = \sin(n)$. The continuous signal is plotted as a smooth line, and the discrete signal is plotted as a stem plot. Both plots are titled with the identifier 'kan075bct045'.

```
1 clc;
2 clear all;
3 close all;
4
5 t=-10:0.01:10;
6 x=sin(t);
7
8 subplot(2,1,1)
9 plot(t,x)
10 xlabel('time(t)')
11 ylabel('sin(t)')
12 title('Continuous time sine signal kan075bct045')
13
14 n=-10:10
15 y=sin(n)
16
17 subplot(2,1,2)
18 stem(n,y)
19 xlabel('time(t)')
20 ylabel('sin(t)')
21 title('discrete time sine signal kan075bct045')
22 |
```

line: 22 col: 2 encoding: SYSTEM (CP1252) eol: CRLF

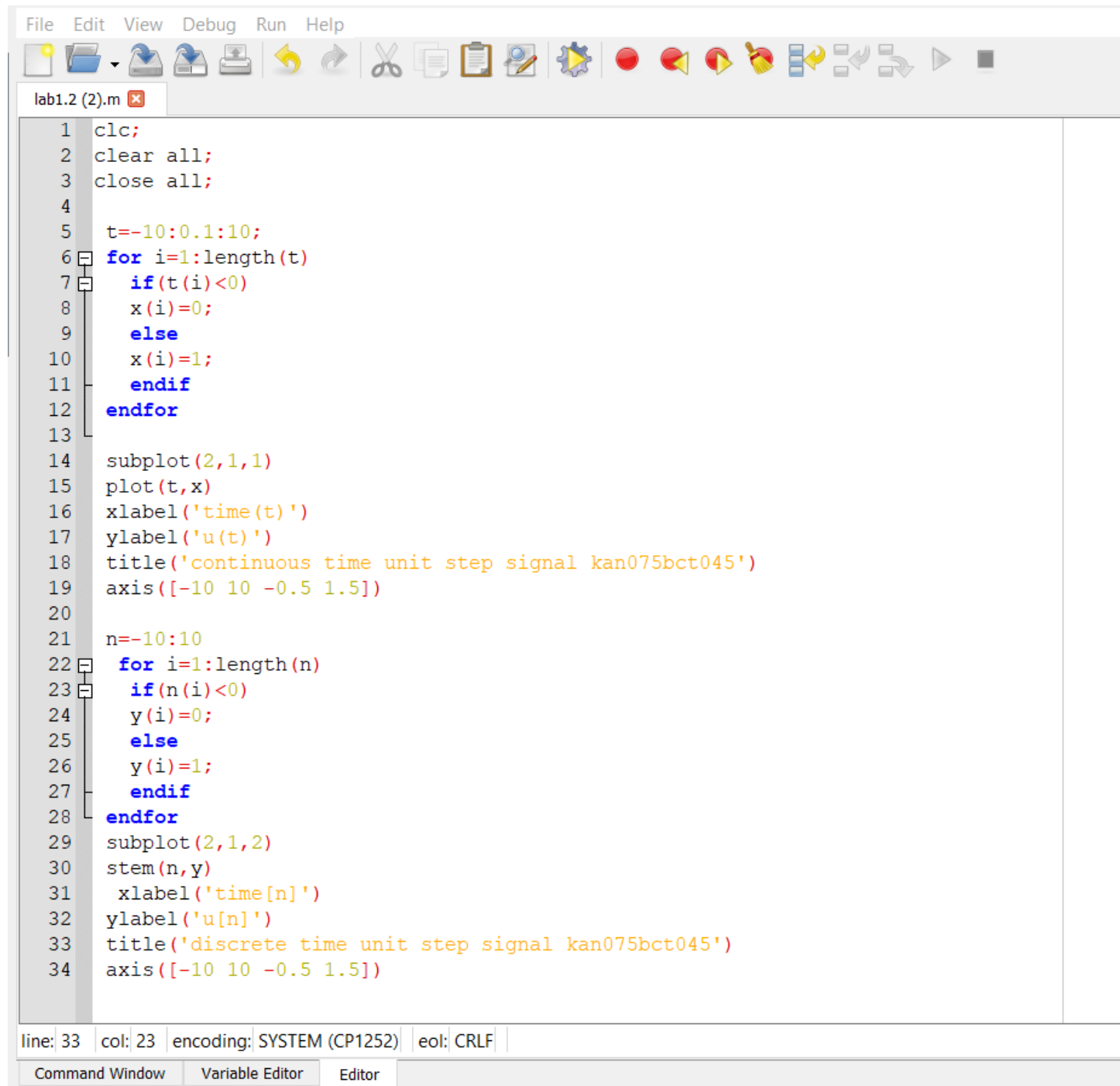
Command Window Variable Editor Editor

OUTPUT



4.STEP SIGNAL

SOURCE CODE



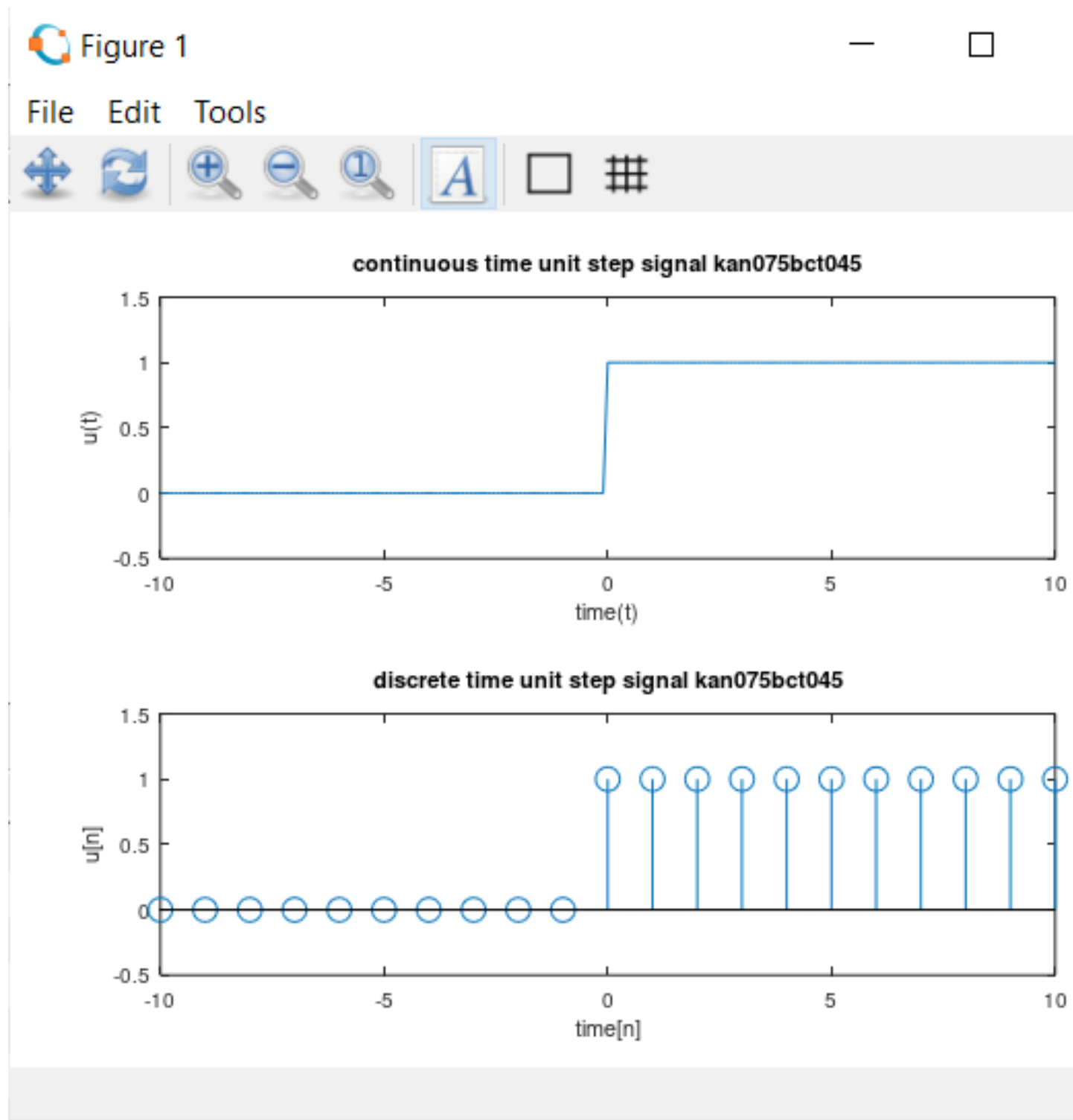
The image shows a MATLAB script editor window with a menu bar (File, Edit, View, Debug, Run, Help) and a toolbar. The script file is named 'lab1.2 (2).m'. The code defines two unit step signals: a continuous-time signal $x(t)$ and a discrete-time signal $y[n]$. Both signals are 0 for negative time and 1 for non-negative time. The continuous-time signal is plotted as a smooth step function, and the discrete-time signal is plotted as a stem plot. Both plots have a title 'continuous time unit step signal kan075bct045' and 'discrete time unit step signal kan075bct045' respectively, and axes ranging from -10 to 10 on the x-axis and -0.5 to 1.5 on the y-axis.

```
1 clc;
2 clear all;
3 close all;
4
5 t=-10:0.1:10;
6 for i=1:length(t)
7     if (t(i)<0)
8         x(i)=0;
9     else
10        x(i)=1;
11    endif
12 endfor
13
14 subplot(2,1,1)
15 plot(t,x)
16 xlabel('time(t)')
17 ylabel('u(t)')
18 title('continuous time unit step signal kan075bct045')
19 axis([-10 10 -0.5 1.5])
20
21 n=-10:10
22 for i=1:length(n)
23     if (n(i)<0)
24         y(i)=0;
25     else
26         y(i)=1;
27     endif
28 endfor
29 subplot(2,1,2)
30 stem(n,y)
31 xlabel('time[n]')
32 ylabel('u[n]')
33 title('discrete time unit step signal kan075bct045')
34 axis([-10 10 -0.5 1.5])
```

line: 33 col: 23 encoding: SYSTEM (CP1252) eol: CRLF

Command Window Variable Editor Editor

OUTPUT



DISCUSSION AND CONCLUSION

From the lab we learned about four signal i.e. sine, step, impulse and ramp. To simulate the code we used octave ide and we got the out from the ide.

At first we code for the signal to generate continuous and discrete signals. We found output with the help $x = \sin(t)$ and plot and subplot function. We also used step function for discrete signals because it plots signal in different points. In similar way we code the program for three another signals and got desired output. In step signal we use loop condition for finding amplitude. Similarly we use loop for impulse and ramp signals.

Hence from this lab session we learned about types of signals and learned their corresponding continuous and discrete signal. In this way we conclude our lab session.