Experiment No: 03 – Waveform generation using DAC

Marmik Moon

Roll No: 36

**Square Wave:**

#include<reg51.h> void delay\_time(unsigned int time)

{ unsigned int i,j; for(i=time;i>0;i--)

{

for(j=0;j<2000;j++);

}

} void send\_dac(unsigned int dat)

{

P1 = dat;

} void main(void)

{

unsigned int delay=0xFF; unsigned char state=0xFF; //send\_dac(0x7F); while(1)

{

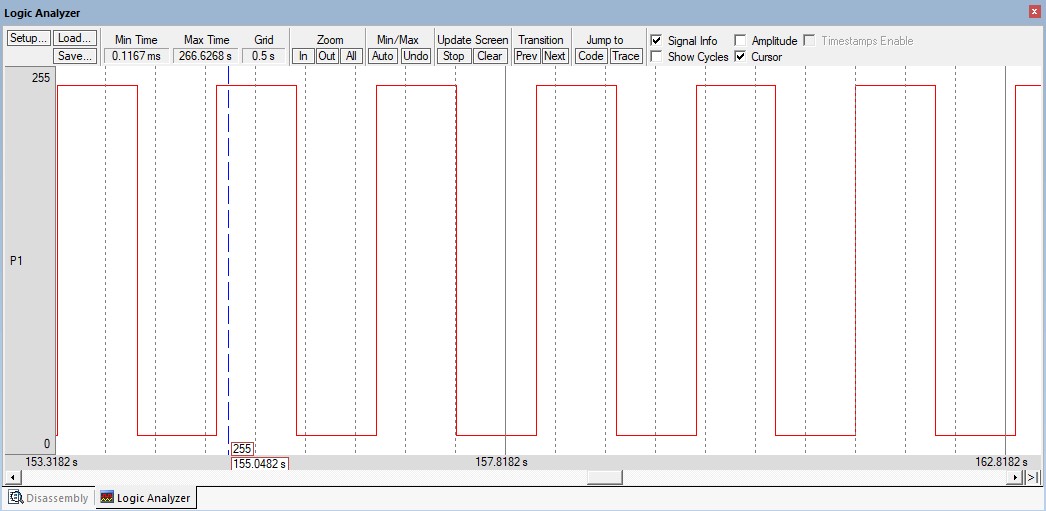
send\_dac(state); delay\_time(delay);

send\_dac(~state);

delay\_time(delay);

}

}



**Triangular Wave:**

#include <reg51.h> void delay\_ramp(unsigned int time)

{ unsigned int i,j; for(i=time;i>0;i--)

{

for(j=0;j<10;j++);

}

}

void send\_dac(unsigned int dat)

{

P1 = dat;

} void main(void)

{ unsigned int a,state=0xff; while(1)

{

// rising ramp edge for(a=0x0;a<0xFF;a++)

{

send\_dac(a); delay\_ramp(1);

}

// falling ramp edge for(a=0xFF;a>0;a--)

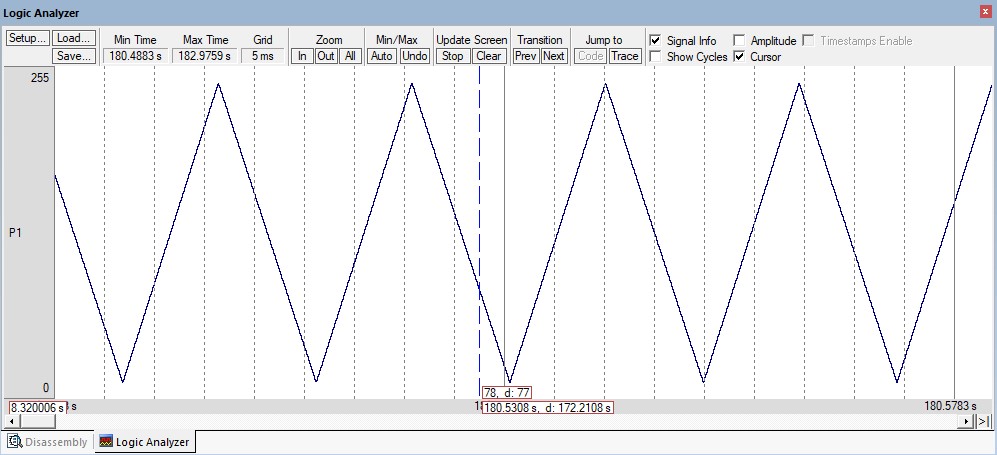
{

send\_dac(a); delay\_ramp(1);

}

}

}



**Trapezoidal Wave:**

#include <reg51.h> void delay\_time(unsigned int time)

{ unsigned int i,j; for(i=time;i>0;i--)

{

for(j=0;j<20;j++);

}

}

void delay\_ramp(unsigned int time)

{ unsigned int i; for(i=time;i>=0;i--);

}

void send\_dac(unsigned int dat)

{

P1 = dat;

} void main(void) { unsigned int a,state=0xFF;

while(1)

{

// rising ramp edge for(a=0;a<0xFF;a++) {

send\_dac(a); // delay\_ramp(0);

}

// high state send\_dac(0xFF); delay\_time(100); // falling ramp edge for(a=0xFF;a>0;a--)

{

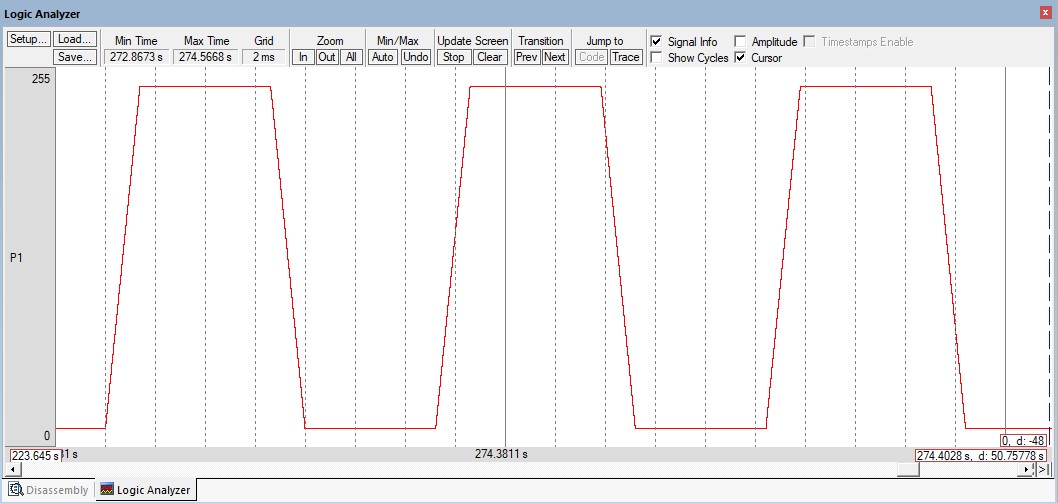
send\_dac(a); // delay\_ramp(0);

}

// low state send\_dac(0x00); delay\_time(100);

}

}

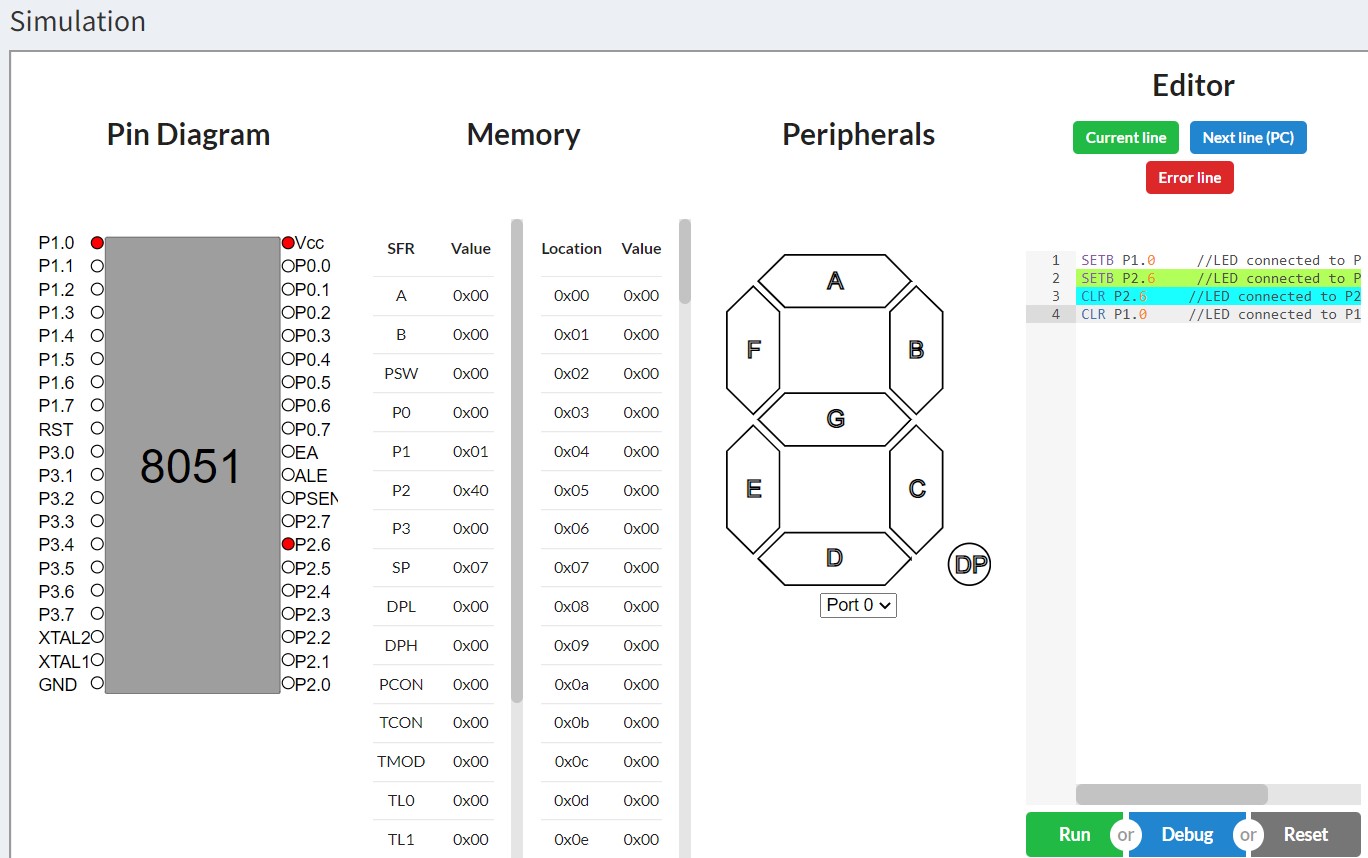


Experiment No: 04 – Microcontroller interfaced with display devices. (V-Lab)

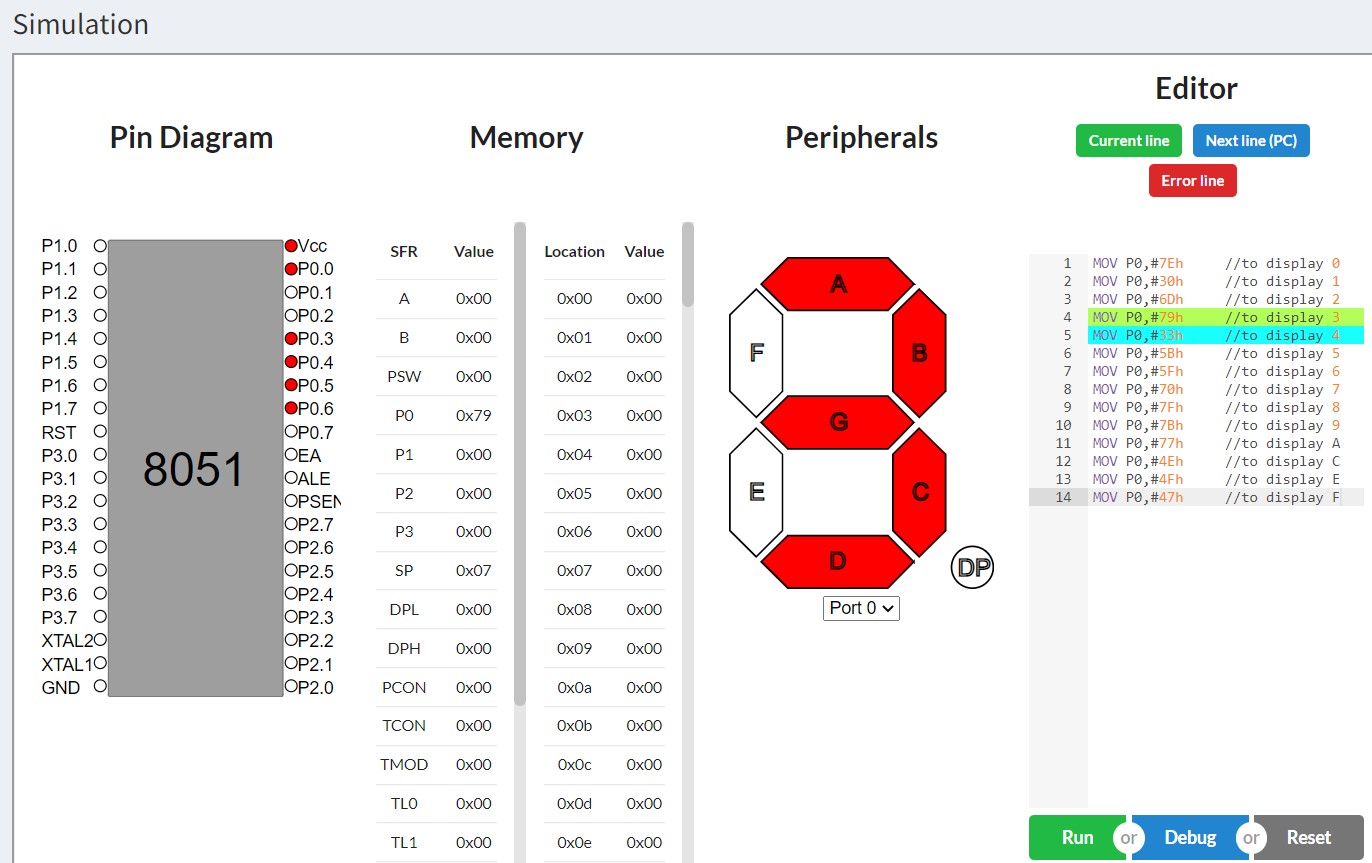
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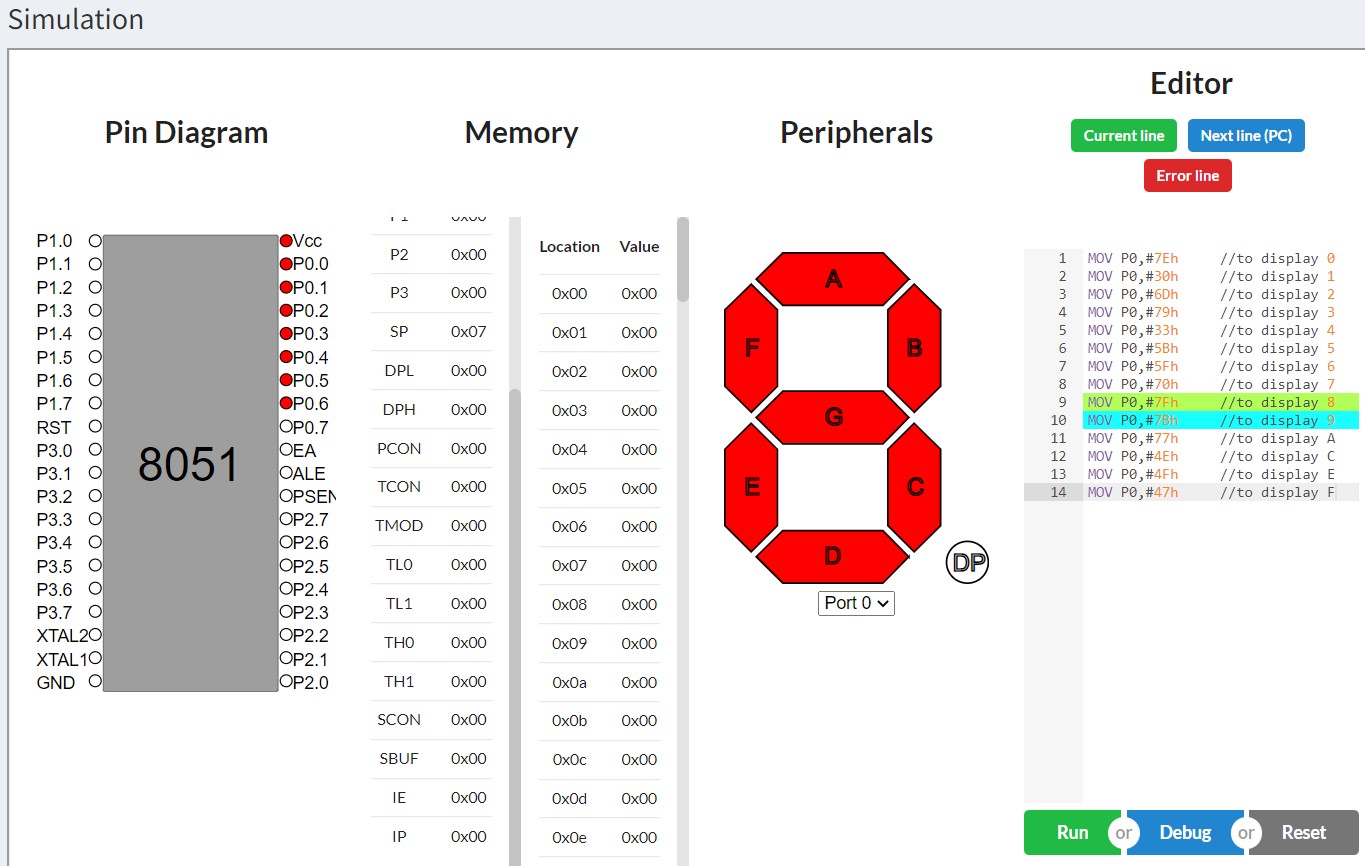
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**LED interfaced with 8051:**

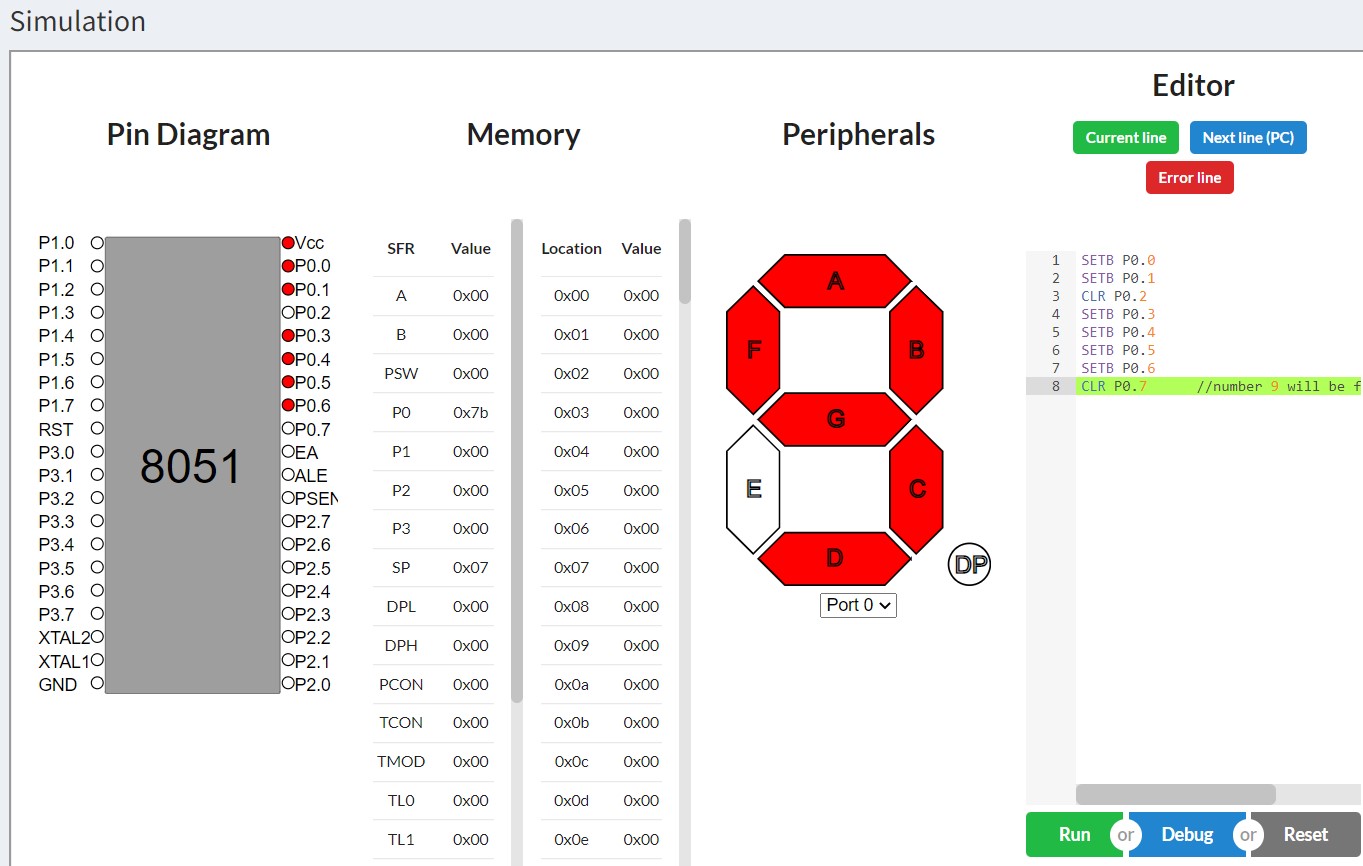


**7-Segment interfaced with 8051:**





**Display number 9 using SETB and CLR:**



Experiment No: 05 – Microcontroller interfaced with ADC and DAC. (V-Lab)

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Roll No: 36

