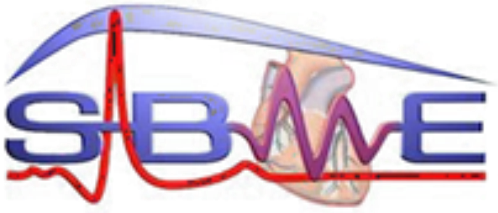
Faculty of Engineering
Cairo University

Systems & Biomedical Engineering Department Faculty of Engineering

Cairo University



Embedded 1st Project
0-99 Counter using Push Button

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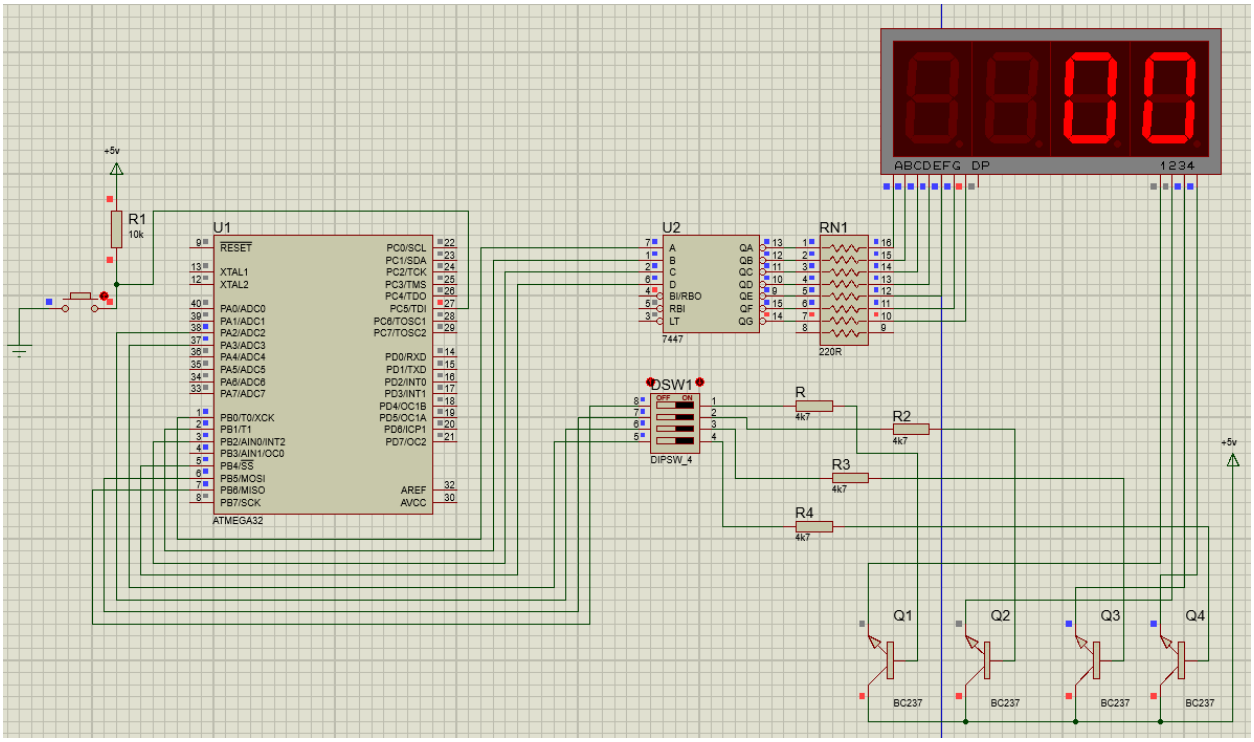
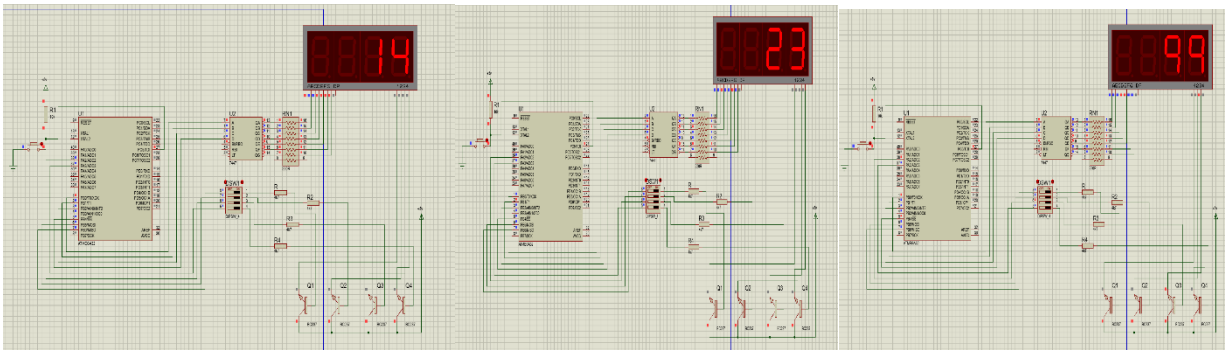
Circuit Diagram:





Code:

```
int main(void)
{
    unsigned int digits[]={0x00, 0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x07, 0x10, 0x11};
    unsigned int v1=0,ten, unit;
    DDRA |= (1<<PINB2)|(1<<PINA3);   // put PortA bit 2 and 3 as output
    DDRB |= (1<<PINB0)|(1<<PINB1)|(1<<PINB2)|(1<<PINB4)|(1<<PINB5)|(1<<PINB6); // put PortB bit 0,1,2,4,5 and 6 as output
    DDRC &= ~(1<<PORTC5);   // put PortC bit 5 as input

   while(1)

   {

      //If switch is pressed
      if(PINC && (1<<PORTC5) == 32){
          while(PINC && (1<<PORTC5) == 32)
          {
             _delay_ms(2);
              unit=v1%10;
              PORTB=digits[unit];
              PORTA|=(1<<3); //Enable the 4th seven-segment
              _delay_ms(1);
              PORTA&=~(1<<3); //disable the first seven-segment
              ten=v1/10;
              PORTB=digits[ten];
              PORTA|=(1<<2); //Enable the 3rd seven-segment
              _delay_ms(1);
              PORTA&=~(1<<2); //disable the first seven-segment

          }
          v1++;

          if(v1==100){
              v1=0;
          }
      }
```