DARLINGTON AMPLIFIER BASED CAPACITIVE TOUCH SENSOR

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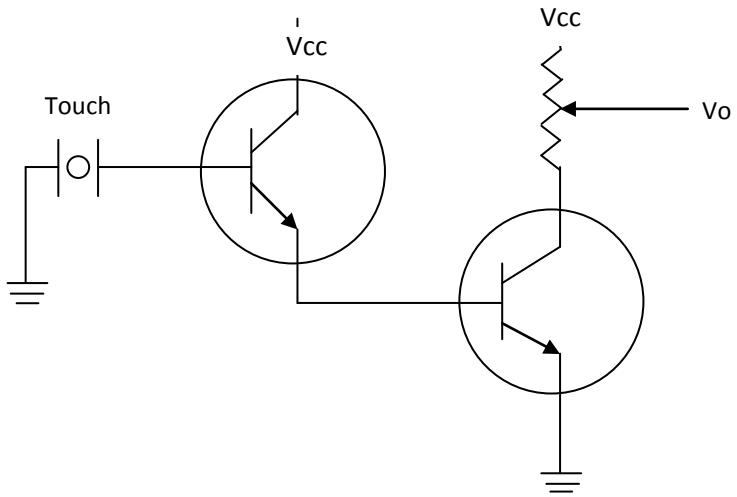
Abstract: To develop a capacitive touch sensor by the use of commonly available Bipolar Junction Transistors (BJTs) in an amplifier configuration.

Capacitive touch sensors are very popular compared to resistive touch sensors due to higher sensitivity and the ability to implement multi-touch sensors. Such sensors need to be touched with capacitive material such as human skin. This project implements such a single-touch sensor using common BJTs and a microcontroller unit (Atmel AVR).



Touching the interface will cause minute current to flow across the base junction of the first amplifier. The square-amplified current flowing through the collector junction of the second amplifier will cause a drop in the potential Vo which can be digitally detected by the microcontroller unit.

Code:

```
DDR = 0;
PORT = 1;
int i = 0;
while(i < 10000)
{
     if(PIN == 0)
          break;
     i = i + 1;
}
if(i == 10000)
       return false;
else
       return true;
```