# Client-server quizmaster

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This circuit is designed for use in quizzes involving several players. The situation is a familiar one: whoever presses (or, in practice, thumps) their button first lights their lamp and is given the opportunity to answer the question.

We have published a number of designs for such circuits over the years in *Elektor Electronics*, but admittedly none has been particularly straightforward, often using microcontrollers and even radio modules!
This circuit demonstrates that we can do the job very simply, using just a couple of discrete (not to say antique!) components. Our terminology, on the other hand, is bang up-to-date: we have designed a client-server quiz system.
The server (i.e., the quizmaster)

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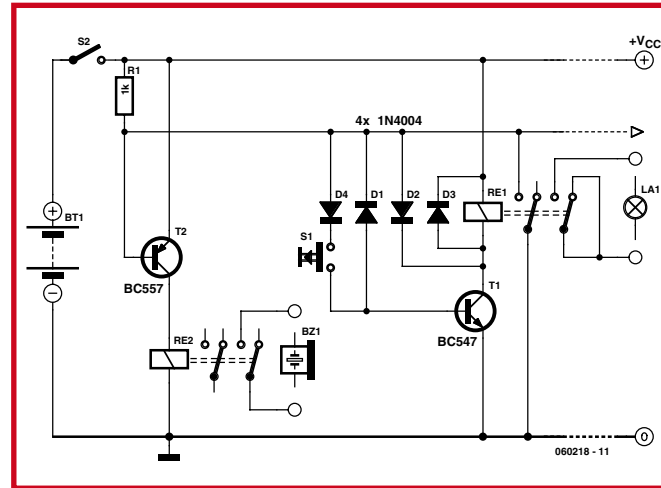
is shown on the left in the circuit diagram. It consists of a relay (K2), a pull-up resistor (R1) and a transistor. The relay is used to switch a buzzer or bell. Switch S2 is used to reset the system. The client systems are connected to the server and to one another using a three-wire bus. Each client consists of a relay, a transistor and a couple of diodes. One of the jobs of the relay is to switch on the lamp on the contestant's desk.

The three bus wires carry V_{CC}, ground, and a blocking signal. A number of client systems, one per contestant, can be connected to the three wires. In the quiescent state the blocking signal carries the supply voltage V_{CC}. When one of the contestants' lamps is lit this drops to 0.7 V.

When a contestant presses his button (S1) relay K1 pulls in as a result of the voltage (the blocking signal minus 0.7 V) applied to the base of transistor Q1. If another contestant subsequently presses his own button nothing will happen: the voltage appearing at the base of his transistor will now be 0 V, and so it will not be turned on.

Relays with a working voltage of 6 V can be used, with a supply voltage not exceeding 9 V.

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