1. Draw a deterministic FA for the set of all binary strings with the property that: they contain at least one pair of 1s that are separated by an odd number of 0s. For example, 1010, 100101, and 00110001 should be accepted, but not 10010011.

2. Give an RE for the above language.

$$\Sigma^* 1 (00)^* 1 \Sigma^*$$