Interlock theory

An interlock is a feature that makes the state of two mechanisms or functions mutually dependent. It may be used to prevent undesired states in a finite-state machine, and may consist of any electrical, electronic, or mechanical devices or systems. In most applications, an interlock is used to help prevent a machine from harming its operator or damaging itself by preventing one element from changing state due to the state of another element, and vice versa. Elevators are equipped with an interlock that prevents the moving elevator from opening its doors, and prevents the stationary elevator (with open doors) from moving. Although both are idiot proof strategies, an interlock should not be confused with a simple safety switch. For example, in a typical household microwave oven, the switch that disables the magnetron if the door is opened is not an interlock. Rather, it would be considered an interlock if the door were locked while the magnetron is on, and the magnetron were prevented from operating while the door is open. Interlocks may include sophisticated elements such as curtains of infrared beams, photo detectors, a computer containing an interlocking computer program, digital or analogue electronics, or simple switches and locks.

while(magnetron==True)

{

door\_open=false;

}

if(door\_open==True)

{

magnetron=false;

}

Above is a typical illustrative pseudo code differentiating between a safety switch and an interlock for a microwave door oven (system 1) and the magnetron operating (system 2) inside a microwave. The second code successfully manages to **isolate the two systems** although both codes logically infer the same.