

Your name: _____

Date: _____

Problem: Assignment 4

Problem description:

Time based discrete simulation
of falling dominoes

Input name	Description	Data type
initial state	initial configuration of sequence of dominoes	array of int

Output data:	Output form:	Data type:
initial state	printed	array of int
time 0 state (first domino tipped)	"	"
states after time steps 1 .. (V)	"	"

Strategy:

- read initial state
 - print initial state
- if first pos is upright domino, change to tipping
 - print time 0 state
- for time steps 1 .. 10
 - update state *
 - print state

Control flow sketch:

```
int state[NUM];
int next_state[NUM];
tip 1st domino if upright
:
for ( 10 times ) {
  for (int i=0; i<NUM; i++) {
    if (*state[i] == UPRIGHT) {
      if (state[i-1] == TIPPING) {
        next_state[i] = TIPPING;
      } else if (state[i] == TIPPING) {
        next_state[i] = HORIZ;
      }
    }
  }
  *print state
}
```

update state

Red = correction

Similar problems:

```
#define NUM 10
#define EMPTY 0
" UPRIGHT 1
" TIPPING 2
" HORIZ 3
```

→ next_state[i] = state[i];

next state should default to being the same as the original state

copy next-state to state

}