#include <stdio.h>

int main() {

char input;

int state = 0; // начальное состояние

printf("Enter a number (press End to finish): ");

while ((input = getchar()) != EOF) {

if (input >= '0' && input <= '9') {

switch (state) {

case 0:

case 1:

state = 1;

break;

case 2:

case 3:

case 4:

state = 4;

break;

case 5:

state = 6;

break;

case 6:

break;

}

} else if (input == '.') {

switch (state) {

case 0:

case 1:

state = 2;

break;

default:

state = 5;

break;

}

} else if (input == 'e' || input == 'E') {

switch (state) {

case 2:

case 3:

case 4:

state = 5;

break;

case 6:

state = 7;

break;

default:

state = 5;

break;

}

} else if (input == '+' || input == '-') {

switch (state) {

case 5:

state = 8;

break;

default:

state = 5;

break;

}

} else if (input == '\n') {

printf("%s\n", (state == 1 || state == 2 || state == 4 || state == 6 || state == 7) ? "Valid" : "Invalid");

state = 0; // возвращаемся в начальное состояние для следующей проверки

printf("Enter a number (press End to finish): ");

} else if (input == 'End') {

break;

} else {

state = 5;

}

}

return 0;

}