public class BinaryConverter {

public static void main(String[] args){

for(int i = -5; i < 33; i++){

System.out.println(i + ": " + toBinary(i));

System.out.println(i);

//always another way

System.out.println(i + ": " + Integer.toBinaryString(i));

}

}

/\*

\* pre: none

\* post: returns a String with base10Num in base 2

\*/

public static String toBinary(int base10Num){

boolean isNeg = base10Num < 0;

base10Num = Math.abs(base10Num);

String result = "";

while(base10Num > 1){

result = (base10Num % 2) + result;

base10Num /= 2;

}

assert base10Num == 0 || base10Num == 1 : "value is not <= 1: " + base10Num;

result = base10Num + result;

assert all0sAnd1s(result);

if( isNeg )

result = "-" + result;

return result;

}

/\*

\* pre: cal != null

\* post: return true if val consists only of characters 1 and 0, false otherwise

\*/

public static boolean all0sAnd1s(String val){

assert val != null : "Failed precondition all0sAnd1s. parameter cannot be null";

boolean all = true;

int i = 0;

char c;

while(all && i < val.length()){

c = val.charAt(i);

all = c == '0' || c == '1';

i++;

}

return all;

}

}