```
Script started on 2021-09-09 21:33:31-04:00 [TERM="xterm-256color" TTY="/dev/pts/0"
COLUMNS="80" LINES="24"]
#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpicc
circuitSatisfiability.c -Wall -ansi -pedanttic -std=c99 -o
circuitSatisfiability#[A######[21Pcat circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpirun -np 64 -machinefile
../hosts ./circuitSatiisfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[21Pcat circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpicc circuitSatisfiability.c -
Wall -ansi -pedanttic -std=c99 -o circuitSatisfiability
#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[Kmpicc circuitSatisfiability.c -Wall -ansi -pedanttic -std=c99 -o
circuitSatisfiability#[A######[21Pcat circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c
/* circuitSatifiability.c solves the Circuit Satisfiability
 *  Problem using a brute-force sequential solution.
 *
 *   The particular circuit being tested is "wired" into the
 *   logic of function 'checkCircuit'. All combinations of
 *   inputs that satisfy the circuit are printed.
 *
 *   16-bit version by Michael J. Quinn, Sept 2002.
 *   Extended to 32 bits by Joel C. Adams, Sept 2013.
 */

#include <stdio.h>     // printf()
#include <limits.h>    // UINT_MAX
#include <mpi.h>

int checkCircuit (int, long);

int main (int argc, char *argv[]) {
   long i;               // loop variable (64 bits)
   int id = -1;           // process id
   int count = 0;        // number of solutions
   int numProcesses = -1;

   MPI_Init(&argc, &argv);

   MPI_Comm_rank(MPI_COMM_WORLD, &id);
      MPI_Comm_size(MPI_COMM_WORLD, &numProcesses);

   printf ("\nProcess %d is checking the circuit...\n", id);

   double startTime = 0.0, totalTime = 0.0;
   startTime = MPI_Wtime();

   for (i = id; i <= UINT_MAX; i += numProcesses) {
      count += checkCircuit (id, i);
   }
```

```
   int totalSum;
   MPI_Reduce(&count, &totalSum, 1, MPI_INT, MPI_SUM, 0, MPI_COMM_WORLD);

   totalTime = MPI_Wtime() - startTime;

   //printf("Process %d finished in time %f secs.\n", id, totalTime);
   fflush (stdout);

   //printf("\nA total of %d solutions were found.\n\n", count);

   if (id == 0){
      printf ("the total sum of the count values equals: %d\n", totalSum);
      printf("The total time is: %f\n", totalTime);
   }

   MPI_Finalize();
   return 0;

}

/* EXTRACT_BIT is a macro that extracts the ith bit of number n.
 *
 * parameters: n, a number;
 *             i, the position of the bit we want to know.
 *
 * return: 1 if 'i'th bit of 'n' is 1; 0 otherwise
 */

#define EXTRACT_BIT(n,i) ( (n & (1<<i) ) ? 1 : 0)


/* checkCircuit() checks the circuit for a given input.
 * parameters: id, the id of the process checking;
 *             bits, the (long) rep. of the input being checked.
 *
 * output: the binary rep. of bits if the circuit outputs 1
 * return: 1 if the circuit outputs 1; 0 otherwise.
 */

#define SIZE 32

int checkCircuit (int id, long bits) {
   int v[SIZE];        /* Each element is one of the 32 bits */
   int i;

   for (i = 0; i < SIZE; i++) {
     v[i] = EXTRACT_BIT(bits,i);
   }

   if ( ( (v[0] || v[1]) && (!v[1] || !v[3]) && (v[2] || v[3])
       && (!v[3] || !v[4]) && (v[4] || !v[5])
       && (v[5] || !v[6]) && (v[5] || v[6])
       && (v[6] || !v[15]) && (v[7] || !v[8])
       && (!v[7] || !v[13]) && (v[8] || v[9])
       && (v[8] || !v[9]) && (!v[9] || !v[10])
       && (v[9] || v[11]) && (v[10] || v[11])
       && (v[12] || v[13]) && (v[13] || !v[14])
       && (v[14] || v[15]) )
```

```
       &&
          ( (v[16] || v[17]) && (!v[17] || !v[19]) && (v[18] || v[19])
       && (!v[19] || !v[20]) && (v[20] || !v[21])
       && (v[21] || !v[22]) && (v[21] || v[22])
       && (v[22] || !v[31]) && (v[23] || !v[24])
       && (!v[23] || !v[29]) && (v[24] || v[25])
       && (v[24] || !v[25]) && (!v[25] || !v[26])
       && (v[25] || v[27]) && (v[26] || v[27])
       && (v[28] || v[29]) && (v[29] || !v[30])
       && (v[30] || v[31]) ) )
   {
      printf ("%d) %d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d%d
\n", id,
         v[31],v[30],v[29],v[28],v[27],v[26],v[25],v[24],v[23],v[22],
         v[21],v[20],v[19],v[18],v[17],v[16],v[15],v[14],v[13],v[12],
         v[11],v[10],v[9],v[8],v[7],v[6],v[5],v[4],v[3],v[2],v[1],v[0]);
      fflush (stdout);
      return 1;
   } else {
      return 0;
   }
}
#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpicc circuitSatisfiability.c -
Wall -ansi -pedanttic -std=c99 -o circuitSatisfiability#[A######[21Pcat
circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpirun -np 64 -machinefile
../hosts ./circuitSatiisfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 32
isfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 16
isfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 8 -machinefile ../hosts ./circuitSatis#[1Pfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 4
sfiability

Process 0 is checking the circuit...

Process 3 is checking the circuit...

Process 1 is checking the circuit...

Process 2 is checking the circuit...
2) 10011001111101011001100111110110
2) 10011001111101011001101111110110
2) 10011001111101011001110111110110
2) 10011001111101101001100111110110
2) 10011001111101101001101111110110
2) 10011001111101101001110111110110
2) 10011001111101111001100111110110
2) 10011001111101111001101111110110
2) 10011001111101111001110111110110
```

2) 10011011111101011001100111110110
2) 10011011111101011001101111110110
2) 10011011111101011001110111110110
2) 10011011111101101001100111110110
2) 10011011111101101001101111110110
2) 10011011111101101001110111110110
2) 10011011111101111001100111110110
2) 10011011111101111001101111110110
2) 10011011111101111001110111110110
1) 10011001111101011001100111110101
1) 10011001111101011001101111110101
1) 10011001111101011001110111110101
1) 10011001111101101001100111110101
1) 10011001111101101001101111110101
1) 10011001111101101001110111110101
1) 10011001111101111001100111110101
1) 10011001111101111001101111110101
1) 10011001111101111001110111110101
3) 10011001111101011001100111110111
3) 10011001111101011001101111110111
3) 10011001111101011001110111110111
3) 10011001111101101001100111110111
3) 10011001111101101001101111110111
3) 10011001111101101001110111110111
3) 10011001111101111001100111110111
3) 10011001111101111001101111110111
3) 10011001111101111001110111110111
2) 10011101111101011001100111110110
2) 10011101111101011001101111110110
2) 10011101111101011001110111110110
2) 10011101111101101001100111110110
2) 10011101111101101001101111110110
2) 10011101111101101001110111110110
2) 10011101111101111001100111110110
2) 10011101111101111001101111110110
2) 10011101111101111001110111110110
1) 10011011111101011001100111110101
1) 10011011111101011001101111110101
1) 10011011111101011001110111110101
1) 10011011111101101001100111110101
1) 10011011111101101001101111110101
1) 10011011111101101001110111110101
1) 10011011111101111001100111110101
1) 10011011111101111001101111110101
1) 10011011111101111001110111110101
3) 10011011111101011001100111110111
3) 10011011111101011001101111110111
3) 10011011111101011001110111110111
3) 10011011111101101001100111110111
3) 10011011111101101001101111110111
3) 10011011111101101001110111110111
3) 10011011111101111001100111110111
3) 10011011111101111001101111110111
3) 10011011111101111001110111110111
1) 10011101111101011001100111110101
1) 10011101111101011001101111110101
1) 10011101111101011001110111110101
1) 10011101111101101001100111110101
1) 10011101111101101001101111110101

```
1) 10011101111101101001110111110101
1) 10011101111101111001100111110101
1) 10011101111101111001101111110101
1) 10011101111101111001110111110101
3) 10011101111101011001100111110111
3) 10011101111101011001101111110111
3) 10011101111101011001110111110111
3) 10011101111101101001100111110111
3) 10011101111101101001101111110111
3) 10011101111101101001110111110111
3) 10011101111101111001100111110111
3) 10011101111101111001101111110111
3) 10011101111101111001110111110111
the total sum of the count values equals: 81
The total time is: 75.907080
#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[Kmpirun -np 4 -machinefile ../hosts ./circuitSatissfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[21Pcat circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpicc circuitSatisfiability.c -
Wall -ansi -pedanttic -std=c99 -o circuitSatisfiability#[A######[21Pcat
circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpirun -np 64 -machinefile
../hosts ./circuitSatiisfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 32
isfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 16
isfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 8 -machinefile ../hosts ./circuitSatis#[1Pfiability

Process 0 is checking the circuit...

Process 2 is checking the circuit...

Process 3 is checking the circuit...

Process 1 is checking the circuit...

Process 4 is checking the circuit...

Process 7 is checking the circuit...

Process 6 is checking the circuit...

Process 5 is checking the circuit...
6) 10011001111101011001100111110110
6) 10011001111101011001101111110110
6) 10011001111101011001110111110110
6) 10011001111101101001100111110110
6) 10011001111101101001101111110110
6) 10011001111101101001110111110110
```

6) 10011001111101111001100111110110
6) 10011001111101111001101111110110
6) 10011001111101111001110111110110
7) 10011001111101011001100111110111
7) 10011001111101011001101111110111
7) 10011001111101011001110111110111
7) 10011001111101101001100111110111
7) 10011001111101101001101111110111
7) 10011001111101101001110111110111
7) 10011001111101111001100111110111
7) 10011001111101111001101111110111
7) 10011001111101111001110111110111
6) 10011011111101011001100111110110
6) 10011011111101011001101111110110
6) 10011011111101011001110111110110
6) 10011011111101101001100111110110
6) 10011011111101101001101111110110
6) 10011011111101101001110111110110
6) 10011011111101111001100111110110
6) 10011011111101111001101111110110
6) 10011011111101111001110111110110
7) 10011011111101011001100111110111
7) 10011011111101011001101111110111
7) 10011011111101011001110111110111
7) 10011011111101101001100111110111
7) 10011011111101101001101111110111
7) 10011011111101101001110111110111
7) 10011011111101111001100111110111
7) 10011011111101111001101111110111
7) 10011011111101111001110111110111
5) 10011001111101011001100111110101
5) 10011001111101011: not a regular file1001101111110101
5) 10011001111101011001110111110101
5) 10011001111101101001100111110101
5) 10011001111101101001101111110101
5) 10011001111101101001110111110101
5) 10011001111101111001100111110101
5) 10011001111101111001101111110101
5) 10011001111101111001110111110101
6) 10011101111101011001100111110110
6) 10011101111101011001101111110110
6) 10011101111101011001110111110110
6) 10011101111101101001100111110110
6) 10011101111101101001101111110110
6) 10011101111101101001110111110110
6) 10011101111101111001100111110110
6) 10011101111101111001101111110110
6) 10011101111101111001110111110110
7) 10011101111101011001100111110111
7) 10011101111101011001101111110111
7) 10011101111101011001110111110111
7) 10011101111101101001100111110111
7) 10011101111101101001101111110111
7) 10011101111101101001110111110111
7) 10011101111101111001100111110111
7) 10011101111101111001101111110111
7) 10011101111101111001110111110111
5) 10011011111101011001100111110101
5) 10011011111101011001101111110101

```
5) 10011011111101011001110111110101
5) 10011011111101101001100111110101
5) 10011011111101101001101111110101
5) 10011011111101101001110111110101
5) 10011011111101111001100111110101
5) 10011011111101111001101111110101
5) 10011011111101111001110111110101
5) 10011101111101011001100111110101
5) 10011101111101011001101111110101
5) 10011101111101011001110111110101
5) 10011101111101101001100111110101
5) 10011101111101101001101111110101
5) 10011101111101101001110111110101
5) 10011101111101111001100111110101
5) 10011101111101111001101111110101
5) 10011101111101111001110111110101
the total sum of the count values equals: 81
The total time is: 38.577914
#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[Kmpirun -np 8 -machinefile ../hosts ./circuitSatissfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 4
sfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[21Pcat circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpicc circuitSatisfiability.c -
Wall -ansi -pedanttic -std=c99 -o circuitSatisfiability#[A######[21Pcat
circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpirun -np 64 -machinefile
../hosts ./circuitSatiisfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 32
isfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 16
isfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 8 -machinefile ../hosts ./circuitSatis#[1Pfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 16 -machinefile ../hosts ./circuitSati#[1@sfiability

Process 5 is checking the circuit...

Process 9 is checking the circuit...

Process 0 is checking the circuit...

Process 15 is checking the circuit...

Process 6 is checking the circuit...

Process 10 is checking the circuit...

Process 11 is checking the circuit...
```

Process 13 is checking the circuit...

Process 12 is checking the circuit...

Process 3 is checking the circuit...

Process 2 is checking the circuit...

Process 4 is checking the circuit...

Process 7 is checking the circuit...

Process 8 is checking the circuit...

Process 14 is checking the circuit...

Process 1 is checking the circuit...
6) 10011001111110101100110011110110
6) 10011001111110101100111111110110
6) 10011001111110101100111011110110
6) 10011001111110110100110011110110
6) 10011001111110110100111111110110
6) 10011001111110110100111011110110
6) 10011001111110111100110011110110
6) 10011001111110111100111111110110
6) 10011001111110111100111011110110
5) 10011001111110101100110011110101
5) 10011001111110101100111111110101
5) 10011001111110101100111011110101
5) 10011001111110110100110011110101
5) 10011001111110110100111111110101
5) 10011001111110110100111011110101
5) 10011001111110111100110011110101
5) 10011001111110111100111111110101
5) 10011001111110111100111011110101
7) 10011001111110101100110011110111
7) 10011001111110101100111111110111
7) 10011001111110101100111011110111
7) 10011001111110110100110011110111
7) 10011001111110110100111111110111
7) 10011001111110110100111011110111
7) 10011001111110111100110011110111
7) 10011001111110111100111111110111
7) 10011001111110111100111011110111
6) 10011011111110101100110011110110
6) 10011011111110101100111111110110
6) 10011011111110101100111011110110
6) 10011011111110110100110011110110
6) 10011011111110110100111111110110
6) 10011011111110110100111011110110
6) 10011011111110111100110011110110
6) 10011011111110111100111111110110
6) 10011011111110111100111011110110
5) 10011011111110101100110011110101
5) 10011011111110101100111111110101
5) 10011011111110101100111011110101
5) 10011011111110110100110011110101
5) 10011011111110110100111111110101

```
5) 10011011111101101001110111110101
5) 10011011111101111001100111110101
5) 10011011111101111001101111110101
5) 10011011111101111001110111110101
7) 10011011111101011001100111110111
7) 10011011111101011001101111110111
7) 10011011111101011001110111110111
7) 10011011111101101001100111110111
7) 10011011111101101001101111110111
7) 10011011111101101001110111110111
7) 10011011111101111001100111110111
7) 10011011111101111001101111110111
7) 10011011111101111001110111110111
6) 10011011111101011001100111110110
6) 10011011111101011001101111110110
6) 10011011111101011001110111110110
6) 10011011111101101001100111110110
6) 10011011111101101001101111110110
6) 10011011111101101001110111110110
6) 10011011111101111001100111110110
6) 10011011111101111001101111110110
6) 10011011111101111001110111110110
5) 10011011111101011001100111110101
5) 10011011111101011001101111110101
5) 10011011111101011001110111110101
5) 10011011111101101001100111110101
5) 10011011111101101001101111110101
5) 10011011111101101001110111110101
5) 10011011111101111001100111110101
5) 10011011111101111001101111110101
5) 10011011111101111001110111110101
7) 10011011111101011001100111110111
7) 10011011111101011001101111110111
7) 10011011111101011001110111110111
7) 10011011111101101001100111110111
7) 10011011111101101001101111110111
7) 10011011111101101001110111110111
7) 10011011111101111001100111110111
7) 10011011111101111001101111110111
7) 10011011111101111001110111110111
the total sum of the count values equals: 81
The total time is: 19.407946
#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[Kmpirun -np 16 -machinefile ../hosts ./circuitSatiisfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 8 -machinefile ../hosts ./circuitSatis#[1Pfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 4
sfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[21Pcat circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpicc circuitSatisfiability.c -
Wall -ansi -pedanttic -std=c99 -o circuitSatisfiability#[A######[21Pcat
circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
```

```
circuitSatisfiability.c############################mpirun -np 64 -machinefile
../hosts ./circuitSatiisfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 32
isfiability

Process 18 is checking the circuit...

Process 0 is checking the circuit...

Process 3 is checking the circuit...

Process 17 is checking the circuit...

Process 2 is checking the circuit...

Process 27 is checking the circuit...

Process 31 is checking the circuit...

Process 13 is checking the circuit...

Process 8 is checking the circuit...

Process 16 is checking the circuit...

Process 20 is checking the circuit...

Process 10 is checking the circuit...

Process 6 is checking the circuit...

Process 15 is checking the circuit...

Process 1 is checking the circuit...

Process 5 is checking the circuit...

Process 26 is checking the circuit...

Process 21 is checking the circuit...

Process 29 is checking the circuit...

Process 7 is checking the circuit...

Process 23 is checking the circuit...

Process 9 is checking the circuit...

Process 11 is checking the circuit...

Process 19 is checking the circuit...

Process 28 is checking the circuit...

Process 14 is checking the circuit...

Process 22 is checking the circuit...
```

```
Process 24 is checking the circuit...

Process 25 is checking the circuit...

Process 12 is checking the circuit...

Process 30 is checking the circuit...

Process 4 is checking the circuit...
22) 10011001111101011001100111110110
22) 10011001111101011001101111110110
22) 10011001111101011001110111110110
22) 10011001111101101001100111110110
22) 10011001111101101001101111110110
22) 10011001111101101001110111110110
22) 10011001111101111001100111110110
22) 10011001111101111001101111110110
22) 10011001111101111001110111110110
23) 10011001111101011001100111110111
23) 10011001111101011001101111110111
23) 10011001111101011001110111110111
23) 10011001111101101001100111110111
23) 10011001111101101001101111110111
23) 10011001111101101001110111110111
23) 10011001111101111001100111110111
23) 10011001111101111001101111110111
23) 10011001111101111001110111110111
22) 10011011111101011001100111110110
22) 10011011111101011001101111110110
22) 10011011111101011001110111110110
22) 10011011111101101001100111110110
22) 10011011111101101001101111110110
22) 10011011111101101001110111110110
22) 10011011111101111001100111110110
22) 10011011111101111001101111110110
22) 10011011111101111001110111110110
21) 10011001111101011001100111110101
21) 10011001111101011001101111110101
21) 10011001111101011001110111110101
21) 10011001111101101001100111110101
21) 10011001111101101001101111110101
21) 10011001111101101001110111110101
21) 10011001111101111001100111110101
21) 10011001111101111001101111110101
21) 10011001111101111001110111110101
23) 10011011111101011001100111110111
23) 10011011111101011001101111110111
23) 10011011111101011001110111110111
23) 10011011111101101001100111110111
23) 10011011111101101001101111110111
23) 10011011111101101001110111110111
23) 10011011111101111001100111110111
23) 10011011111101111001101111110111
23) 10011011111101111001110111110111
22) 10011101111101011001100111110110
22) 10011101111101011001101111110110
22) 10011101111101011001110111110110
22) 10011101111101101001100111110110
```

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22) 10011101111101101001101111110110
22) 10011101111101101001110111110110
22) 10011101111101111001100111110110
22) 10011101111101111001101111110110
22) 10011101111101111001110111110110
21) 10011011111101011001100111110101
21) 10011011111101011001101111110101
21) 10011011111101011001110111110101
21) 10011011111101101001100111110101
21) 10011011111101101001101111110101
21) 10011011111101101001110111110101
21) 10011011111101111001100111110101
21) 10011011111101111001101111110101
21) 10011011111101111001110111110101
23) 10011101111101011001100111110111
23) 10011101111101011001101111110111
23) 10011101111101011001110111110111
23) 10011101111101101001100111110111
23) 10011101111101101001101111110111
23) 10011101111101101001110111110111
23) 10011101111101111001100111110111
23) 10011101111101111001101111110111
23) 10011101111101111001110111110111
21) 10011101111101011001100111110101
21) 10011101111101011001101111110101
21) 10011101111101011001110111110101
21) 10011101111101101001100111110101
21) 10011101111101101001101111110101
21) 10011101111101101001110111110101
21) 10011101111101111001100111110101
21) 10011101111101111001101111110101
21) 10011101111101111001110111110101
the total sum of the count values equals: 81
The total time is: 9.662164
#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[Kmpirun -np 32 -machinefile ../hosts ./circuitSatiisfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 16
isfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 8 -machinefile ../hosts ./circuitSatis#[1Pfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ mpirun
-np 4
sfiability#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$
#[21Pcat circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpicc circuitSatisfiability.c -
Wall -ansi -pedanttic -std=c99 -o circuitSatisfiability#[A######[21Pcat
circuitSatisfiability.c
#[K#[A#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ cat
circuitSatisfiability.c############################mpirun -np 64 -machinefile
../hosts ./circuitSatiisfiability

Process 14 is checking the circuit...
```

```
Process 6 is checking the circuit...
Process 18 is checking the circuit...
Process 27 is checking the circuit...
Process 29 is checking the circuit...
Process 17 is checking the circuit...
Process 32 is checking the circuit...
Process 22 is checking the circuit...
Process 5 is checking the circuit...
Process 20 is checking the circuit...
Process 10 is checking the circuit...
Process 0 is checking the circuit...
Process 53 is checking the circuit...
Process 42 is checking the circuit...
Process 4 is checking the circuit...
Process 45 is checking the circuit...
Process 2 is checking the circuit...
Process 35 is checking the circuit...
Process 31 is checking the circuit...
Process 23 is checking the circuit...
Process 3 is checking the circuit...
Process 43 is checking the circuit...
Process 19 is checking the circuit...
Process 9 is checking the circuit...
Process 44 is checking the circuit...
Process 36 is checking the circuit...
Process 39 is checking the circuit...
Process 16 is checking the circuit...
Process 56 is checking the circuit...
Process 15 is checking the circuit...
Process 48 is checking the circuit...
```

```
Process 57 is checking the circuit...
Process 33 is checking the circuit...
Process 21 is checking the circuit...
Process 51 is checking the circuit...
Process 52 is checking the circuit...
Process 55 is checking the circuit...
Process 30 is checking the circuit...
Process 28 is checking the circuit...
Process 46 is checking the circuit...
Process 12 is checking the circuit...
Process 26 is checking the circuit...
Process 40 is checking the circuit...
Process 41 is checking the circuit...
Process 59 is checking the circuit...
Process 25 is checking the circuit...
Process 34 is checking the circuit...
Process 62 is checking the circuit...
Process 38 is checking the circuit...
Process 11 is checking the circuit...
Process 47 is checking the circuit...
Process 60 is checking the circuit...
Process 1 is checking the circuit...
Process 58 is checking the circuit...
Process 54 is checking the circuit...
Process 61 is checking the circuit...
Process 7 is checking the circuit...
Process 49 is checking the circuit...
Process 50 is checking the circuit...
Process 13 is checking the circuit...
```

Process 63 is checking the circuit...

Process 37 is checking the circuit...

Process 8 is checking the circuit...

Process 24 is checking the circuit...
54) 10011001111101011001100111110110
54) 10011001111101011001101111110110
54) 10011001111101011001110111110110
54) 10011001111101101001100111110110
54) 10011001111101101001101111110110
54) 10011001111101101001110111110110
54) 10011001111101111001100111110110
54) 10011001111101111001101111110110
54) 10011001111101111001110111110110
55) 10011001111101011001100111110111
55) 10011001111101011001101111110111
55) 10011001111101011001110111110111
55) 10011001111101101001100111110111
55) 10011001111101101001101111110111
55) 10011001111101101001110111110111
55) 10011001111101111001100111110111
55) 10011001111101111001101111110111
55) 10011001111101111001110111110111
54) 10011011111101011001100111110110
54) 10011011111101011001101111110110
54) 10011011111101011001110111110110
54) 10011011111101101001100111110110
54) 10011011111101101001101111110110
54) 10011011111101101001110111110110
54) 10011011111101111001100111110110
54) 10011011111101111001101111110110
54) 10011011111101111001110111110110
55) 10011011111101011001100111110111
55) 10011011111101011001101111110111
55) 10011011111101011001110111110111
55) 10011011111101101001100111110111
55) 10011011111101101001101111110111
55) 10011011111101101001110111110111
55) 10011011111101111001100111110111
55) 10011011111101111001101111110111
55) 10011011111101111001110111110111
53) 10011001111101011001100111110101
53) 10011001111101011001101111110101
53) 10011001111101011001110111110101
53) 10011001111101101001100111110101
53) 10011001111101101001101111110101
53) 10011001111101101001110111110101
53) 10011001111101111001100111110101
53) 10011001111101111001101111110101
53) 10011001111101111001110111110101
54) 10011101111101011001100111110110
54) 10011101111101011001101111110110
54) 10011101111101011001110111110110
54) 10011101111101101001100111110110
54) 10011101111101101001101111110110
54) 10011101111101101001110111110110
54) 10011101111101111001100111110110
54) 10011101111101111001101111110110
54) 10011101111101111001110111110110

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54) 10011101111101111001101111110110
54) 10011101111101111001110111110110
55) 10011101111101011001100111110111
55) 10011101111101011001101111110111
55) 10011101111101011001110111110111
55) 10011101111101101001100111110111
55) 10011101111101101001101111110111
55) 10011101111101101001110111110111
55) 10011101111101111001100111110111
55) 10011101111101111001101111110111
55) 10011101111101111001110111110111
53) 10011011111101011001100111110101
53) 10011011111101011001101111110101
53) 10011011111101011001110111110101
53) 10011011111101101001100111110101
53) 10011011111101101001101111110101
53) 10011011111101101001110111110101
53) 10011011111101111001100111110101
53) 10011011111101111001101111110101
53) 10011011111101111001110111110101
53) 10011011111101011001100111110101
53) 10011011111101011001101111110101
53) 10011011111101011001110111110101
53) 10011011111101101001100111110101
53) 10011011111101101001101111110101
53) 10011011111101101001110111110101
53) 10011011111101111001100111110101
53) 10011011111101111001101111110101
53) 10011011111101111001110111110101
the total sum of the count values equals: 81
The total time is: 5.230243
#]0;jmw75@gold34:
~/cs374/Project01##[01;32mjmw75@gold34#[00m:#[01;34m~/cs374/Project01#[00m$ #[Kexit

Script done on 2021-09-09 21:36:47-04:00 [COMMAND_EXIT_CODE="0"]
```