Programming Assignment 3-1:
Quine-McCluskey Method

Problem Descriptions:

Implement the Quin-McCluskey method to generate all prime implicants for a given function.

Input format:

You should allow input from a file. The following is an example.

$f(A,B,C,D) = \sum m(4,5,6,8,9,10,13) + \sum d(0,7,5)$.

```
.i 4            /* the function f has 4 input variables: A,B,C,D. */
.m              /* on set */
4 5 6 8 9 10 13
.d              /* don't care set */
0 7 15
```

Output format:

You should write your output to a file. The following is an example.

```
.i 4            /* the function f has 4 input variables: A,B,C,D. */
.m              /* on set */
4 5 6 8 9 10 13
.d              /* don't care set */
0 7 15
.p 7            /* there are 7 prime implicants */
0-00            /* A'C'D' */
-000            /* B'C'D' */
100-            /* AB'C' */
10-0            /* AB'D'*/
01--            /* A'B */
1-01            /* AC'D */
-1-1            /* BD */
.end
```

Grading:

Your grade depends on the correctness, and runtime of your program. You may first compress all of the source code and execution file and then email your homework to TA before the deadline (please specify your student ID in the subject). The implementation details and your comments about this homework should be written in a simple report and mailed to TA together.