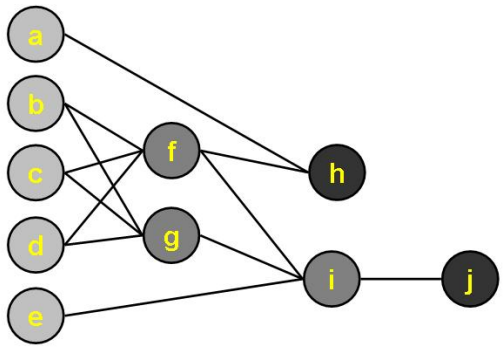
CAD Design Project 1 – Circuit Graph Construction
Due: 23:55, Oct. 6, 2021

Graph is a commonly used computer data structure to handle electronic circuits. In this kickoff project, you are required to construct a circuit graph from a text-input file in BLIF format. BLIF is developed by University of California, Berkeley to describe a circuit in Boolean level. You need to read Section 1 and Section 2 of the BLIF document first. After understanding how BLIF works, you are required to write a program, which parses a BLIF file and constructs its corresponding circuit graph, on a Linux environment. The constructed circuit graph will be used in following projects. There are 3 requirements for your program:

1. Output the Boolean functionality of each node into a text file (file name: function.out).
2. Report the predecessors and successors of a node.
3. Upload your source code tarball (*.tgz) to moodle (including your Makefile).
   (NOTE: The uploaded file name should be the same with your student ID.)

```
BLIF Example: sample01.blif

.model sample01
.inputs a b c d e
.outputs h j
.names b c d f
101 1
.names b c d g
11- 1
--1 1
.names a f h
1- 1
-0 1
.names e f g i
110 1
001 1
.names i j
0 1
.end
```




```
Run-time Example:
%> blif_parser sample01.blif
Please input a node: f
predecessor: b, c, d
successor: h, i
Please input a node: d
predecessor: -                  # no predecessor
successor: f, g
Please input a node: x
node x does not exist
Please input a node: h
predecessor: a, f
successor: -                    # no successor
...
Please input a node: 0          # '0' stands for end of user inputs
%>

%> cat function.out
Node function:
f = b c' d
g = b c + d
h = a + f'
i = e f g' + e' f' g
j = i'
END
```