

```
data board;
rows = 8;
columns = 8;
do i = 1 to rows;
do j = 1 to columns;
origin = (i || j);
/* input legal moves of the knight */
/* up 2 right 1 */
if i>=3 and j<= columns-1 then do
    destination = (i-2 || j+1);
    output;
end;
/* up 1 right 2 */
if i>=2 and j<= columns-2 then do
    destination = (i-1 || j+2);
    output;
end;
/* down 1 right 2 */
if i<=rows-1 and j<= columns-2 then do
    destination = (i+1 || j+2);
    output;
end;
/* down 2 right 1 */
if i<=rows-2 and j<= columns-1 then do
    destination = (i+2 || j+1);
    output;
end;
end;
end;
run;
```

```
proc optgraph
data_links = board;
*create graph from variables;
data_links_var
from = origin
to = destination;
* write cycle to file closed_knights_tour;
tsp out = closed_knights_tour;
run;
```