Main Program

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9. Compose colour-map and shadows board graphics

Draw colour-map

Until no new coloured points or links are discovered, Repeat:

```
1. a newly-coloured point colours its links;
    if a link becomes coloured by both colours,
    its colour is neutralised.

2. an uncoloured empty point [edge point],
    at least 3 [2] of whose links are same-coloured
        and none opposite-coloured,
    is coloured;

3. an uncoloured edge connecting 2 uncoloured points,
    each of which has at least one coloured link
        and no opposite-colored links,
    is coloured.
```

Circumscribe clusters and eyes

```
clusters.numberof := 0;
for point in b do
    if all-links(point) are same-colour or neutral then
    for each coloured-link(point) do
        if member(otherpoint(link, point), cluster)
        # ie the point at the other end of the link
        then add(point, cluster)
        else makenewcluster(point)
    makenewcluster(point) =
    clusters.numberof +:= 1;
    let newcluster = [{point}, clusters.numberof]
    paint(board.point, point.newcluster.number, point.colour(point)
```

Identify and mark obviously dead stones

```
foreach cluster in clusters do
    identify(cluster.eyes);
    if number(cluster.eyes) > 2
        or size(cluster.eyes) > 3
        and shape(cluster.eye) not(in{dead-shapes})
    then cluster.lad := alive
    elsif surrounded(cluster, enemies)
        and foreach enemy in enemies (enemy.lad = alive)
    then cluster.lad := dead

identify(cluster.eyes) =
    foreach point in cluster do
        if colour-controlled(point) and
            not border(point) or stone(point)
        then append(point, cluster.eyes)

surrounded (cluster, enemies) =
    not(forany point in border(cluster)
        path(friend(point)
        or path(openspace, point))
```

Compute and circumscribe cluster shadows

```
iboard := board;
foreach cluster in board do
    foreach point in cluster do
    if point.coloured then iboard.point := pretendstone (colour);
isboard:= Influencie (iboard);
foreach point in board do point.shadow:= isboard.point.shadow;

foreach cluster in board do
    circumscribe cluster.shadow
```

Perform local life-and-death dynamic analysis

```
foreach cluster in board do
    foreach point in cluster or cluster.shadow do
        zboard.point:= board.point;
    fillup rest of zboard with black stones;
    poke 2 eyes in rest of zboard;
    Laizy(zboard);
    foreach point in cluster do
        if board.point.occupant = enemystone and not(zboard.point.occupant = enemystone)
        then board.point.occupant:= deadenemystone
```