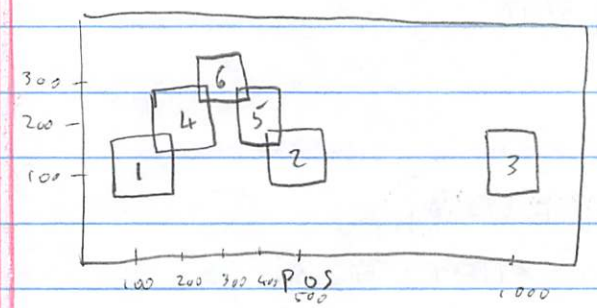
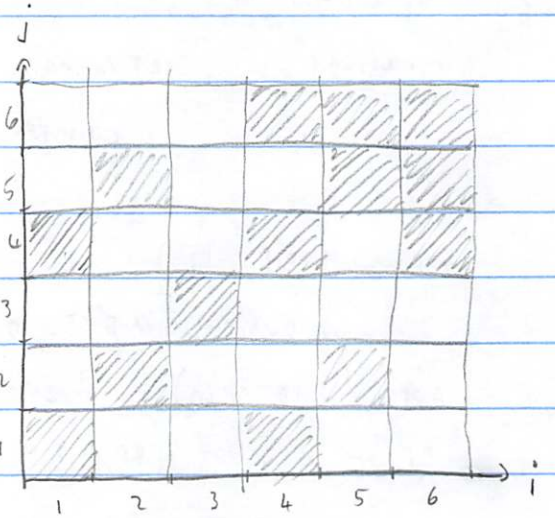
12/9/15.1

CLUSTERING ALGORITHM





r = 60

CLUSTERS (AT END)

A : 1, 2, 4, 5, 6

B : 3

C :

```
FOR i = 1 : N
    IF BP_i BELONGS TO ANY CLUSTER X
        CURRENT CLUSTER = X
    ELSE CURRENT CLUSTER = NEW CLUSTER → ADD i TO NEW CLUSTER
    FOR j = i+1 TO N
        IF BP OVERLAP (i, j):
            IF BP_j BELONGS TO ANY CLUSTER Y
                CLUSTER X = MERGE (X, Y)
            ELSE ADD BP_j TO CLUSTER X
```

i = 1 NEW CLUSTER A

j = 2, 3, 5, 6 NO OVERLAP

j = 4 j DOES NOT BELONG TO ANY CLUSTER; ADD j TO A

i = 2 BP_2 DOES NOT BELONG TO CLUSTER - MAKE CLUSTER B, ADD 2 TO IT

j = 3, 4, 6 NO OVERLAP

j = 5 j DOES NOT BELONG TO ANY CLUSTER, ADD j TO B

i = 4 i BELONGS TO CLUSTER A. A IS CURRENT CLUSTER

j = 6 j DOES NOT BELONG TO ANY CLUSTER, ADD TO A

i = 5 CURRENT CLUSTER IS B

j = 6 j BELONGS TO A

CLUSTER B = MERGE (A, B)

```
CLASS CLUSTERS:
    CLUSTERS : DICTIONARY OF LISTS
                    CLUSTER ID : [BP ID, ...]

    NEW (BP_ID)
        CLUSTERS[NEXT_ID++] = [BP_ID]
    ADD (CID, BPID) : CLUSTERS[CID].APPEND(BP_ID)
    BP IN CLUSTER (BP_ID) :
        FOR CID IN KEYS(CLUSTERS):
            IF BP_ID IN CLUSTERS[CID] : RETURN CID
        RETURN NONE

    MERGE (CID A, CID B) :
        CLUSTERS[CID A].APPEND(CLUSTERS[CID B])
        CLUSTERS[CID B].~~REMOVE~~ REMOVE()
```