

In the main section of the code, code starts by creating the first board, printing it, and doing modifications. In the main algorithm, the code first takes a copy of the board and stores it. In an iteration of the loop, if the board has changes, it means there might be more lakes which are not yet found. If it stayed the same, all the lakes are found.

While finding the lakes, the method checks a position in the board. If all of the neighbors of the position are either higher than the position, already a lake or checked before; it means it is a lake. If a neighbor's level is smaller than the first position and not in the boundary(because if it is a boundary, it is already not a lake) it checks the new location's neighbors and so on. In an iteration it might not find all the lakes. If this situation happened, it does the same thing until the board remains the same. However there might be an error in a case like this:

3 3 3 3 3

3 1 1 1 3

3 1 3 1 3

3 1 1 1 3

3 3 3 3 3

The code might find the middle three as a lake because all surroundings are lake. I couldn't test this case because I didn't had time, so I'm not sure.

When the lakes are found, the code labels the lakes by going through the board once more. If it finds a lake, it labels the lake and the ones that are connected to the former lake and goes to the next. There is no need for a repetition because it labels all the lakes in one loop. While labeling the lakes, it also stores the lakes which will be used to calculate the score.

After the lakes are labeled, the code calculates the score. It first finds the minimum level of height of a lake by traversing the board. After the minimum height is found it calculates the score for that lake by using the stored links which are mentioned in the previous paragraph. This process is done for all labels.

After the score is found. It prints the score and the board with labels. And the code is terminated.

Finally, Radegast has no mercy for his followers. :/

Final Console Content In Example Cases:

Input 1:

Board:

```
7 7
3 3 3 3 3 3 3
3 1 2 3 1 2 3
3 3 3 1 3 3 3
3 3 3 3 3 3 3
3 1 2 3 1 2 3
3 3 3 3 3 3 3
3 3 3 3 3 3 2
```

Modifications

```
d3
d4
d5
```

e5

f5

g5

g4

g3

f3

e3

Final Board and Score:

0 3 3 3 3 3 3 3

1 3 A A 3 A A 3

2 3 3 3 A 3 3 3

3 3 3 3 4 4 4 4

4 3 B B 4 C C 4

5 3 3 3 4 4 4 4

6 3 3 3 3 3 3 2

a b c d e f g

Final score: 6,80

Input 2:

Board:

37 78

1 1

101

1 1

`101`

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[illegible]

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[illegible]

Modifications:

d3

d4

d5

e5

f5

g5

g4

gg3

f3

e3

Final Board and Score:

0 1
1 1 A 1 B 1 C 1 D 1 E 1 F 1 G 1 H 1 I 1 J 1 K 1 L 1 M 1 N 1 O 1 P 1 Q 1 R 1
2 1
3 1 S 1 T 1 U 1 V 1 W 1 X 1 Y 1 Z 1 AA 1 AB 1 AC 1 AD 1 AE 1 AF 1 AG 1 AH 1
4 1 1 1 2 1 1 2 1
5 1 AI 1 1 2 1 2 AJ 1 AK 1 AL 1 AM 1 AN 1 AO 1 AP 1 AQ 1 AR 1 AS 1 AT 1 AU 1 AV 1 AW 1 AX 1
6 1
7 1 AY 1 AZ 1 BA 1 BB 1 BC 1 BD 1 BE 1 BF 1 BG 1 BH 1 BI 1 BJ 1 BK 1 BL 1 BM 1 BN 1 BO 1 BP 1
8 1
9 1 BQ 1 BR 1 BS 1 BT 1 BU 1 BV 1 BW 1 BX 1 BY 1 BZ 1 CA 1 CB 1 CC 1 CD 1 CE 1 CF 1 CG 1 CH 1
10 1
11 1 CI 1 CJ 1 CK 1 CL 1 CM 1 CN 1 CO 1 CP 1 CQ 1 CR 1 CS 1 CT 1 CU 1 CV 1 CW 1 CX 1 CY 1 CZ 1
12 1
13 1 DA 1 DB 1 DC 1 DD 1 DE 1 DF 1 DG 1 DH 1 DI 1 DJ 1 DK 1 DL 1 DM 1 DN 1 DO 1 DP 1 DQ 1 DR 1
14 1
15 1 DS 1 DT 1 DU 1 DV 1 DW 1 DX 1 DY 1 DZ 1 EA 1 EB 1 EC 1 ED 1 EE 1 EF 1 EG 1 EH 1 EI 1 EJ 1
16 1
17 1 EK 1 EL 1 EM 1 EN 1 EO 1 EP 1 EQ 1 ER 1 ES 1 ET 1 EU 1 EV 1 EW 1 EX 1 EY 1 EZ 1 FA 1 FB 1
18 1
19 1 FC 1 FD 1 FE 1 FF 1 FG 1 FH 1 FI 1 FJ 1 FK 1 FL 1 FM 1 FN 1 FO 1 FP 1 FQ 1 FR 1 FS 1 FT 1

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20 1
21 1 FU 1 FV 1 FW 1 FX 1 FY 1 FZ 1 GA 1 GB 1 GC 1 GD 1 GE 1 GF 1 GG 1 GH 1 GI 1 GJ 1 GK 1 GL 1
22 1
23 1 GM 1 GN 1 GO 1 GP 1 GQ 1 GR 1 GS 1 GT 1 GU 1 GV 1 GW 1 GX 1 GY 1 GZ 1 HA 1 HB 1 HC 1 HD 1
24 1
25 1 HE 1 HF 1 HG 1 HH 1 HI 1 HJ 1 HK 1 HL 1 HM 1 HN 1 HO 1 HP 1 HQ 1 HR 1 HS 1 HT 1 HU 1 HV 1
26 1
27 1 HW 1 HX 1 HY 1 HZ 1 IA 1 IB 1 IC 1 ID 1 IE 1 IF 1 IG 1 IH 1 II 1 IJ 1 IK 1 IL 1 IM 1 IN 1
28 1
29 1 IO 1 IP 1 IQ 1 IR 1 IS 1 IT 1 IU 1 IV 1 IW 1 IX 1 IY 1 IZ 1 JA 1 JB 1 JC 1 JD 1 JE 1 JF 1
30 1
31 1 JG 1 JH 1 JI 1 JJ 1 JK 1 JL 1 JM 1 JN 1 JO 1 JP 1 JQ 1 JR 1 JS 1 JT 1 JU 1 JV 1 JW 1 JX 1
32 1
33 1 JY 1 JZ 1 KA 1 KB 1 KC 1 KD 1 KE 1 KF 1 KG 1 KH 1 KI 1 KJ 1 KK 1 KL 1 KM 1 KN 1 KO 1 KP 1
34 1
35 1 KQ 1 KR 1 KS 1 KT 1 KU 1 KV 1 KW 1 KX 1 KY 1 KZ 1 LA 1 LB 1 LC 1 LD 1 LE 1 LF 1 LG 1 LH 1
36 1
37 1 LI 1 LJ 1 LK 1 LL 1 LM 1 LN 1 LO 1 LP 1 LQ 1 LR 1 LS 1 LT 1 LU 1 LV 1 LW 1 LX 1 LY 1 LZ 1
38 1
39 1 MA 1 MB 1 MC 1 MD 1 ME 1 MF 1 MG 1 MH 1 MI 1 MJ 1 MK 1 ML 1 MM 1 MN 1 MO 1 MP 1 MQ 1 MR 1
40 1
41 1 MS 1 MT 1 MU 1 MV 1 MW 1 MX 1 MY 1 MZ 1 NA 1 NB 1 NC 1 ND 1 NE 1 NF 1 NG 1 NH 1 NI 1 NJ 1
42 1
43 1 NK 1 NL 1 NM 1 NN 1 NO 1 NP 1 NQ 1 NR 1 NS 1 NT 1 NU 1 NV 1 NW 1 NX 1 NY 1 NZ 1 OA 1 OB 1
44 1
45 1 OC 1 OD 1 OE 1 OF 1 OG 1 OH 1 OI 1 OJ 1 OK 1 OL 1 OM 1 ON 1 OO 1 OP 1 OQ 1 OR 1 OS 1 OT 1
46 1
47 1 OU 1 OV 1 OW 1 OX 1 OY 1 OZ 1 PA 1 PB 1 PC 1 PD 1 PE 1 PF 1 PG 1 PH 1 PI 1 PJ 1 PK 1 PL 1
48 1
49 1 PM 1 PN 1 PO 1 PP 1 PQ 1 PR 1 PS 1 PT 1 PU 1 PV 1 PW 1 PX 1 PY 1 PZ 1 QA 1 QB 1 QC 1 QD 1
50 1
51 1 QE 1 QF 1 QG 1 QH 1 QI 1 QJ 1 QK 1 QL 1 QM 1 QN 1 QO 1 QP 1 QQ 1 QR 1 QS 1 QT 1 QU 1 QV 1
52 1
53 1 QW 1 QX 1 QY 1 QZ 1 RA 1 RB 1 RC 1 RD 1 RE 1 RF 1 RG 1 RH 1 RI 1 RJ 1 RK 1 RL 1 RM 1 RN 1
54 1
55 1 RO 1 RP 1 RQ 1 RR 1 RS 1 RT 1 RU 1 RV 1 RW 1 RX 1 RY 1 RZ 1 SA 1 SB 1 SC 1 SD 1 SE 1 SF 1
56 1
57 1 SG 1 SH 1 SI 1 SJ 1 SK 1 SL 1 SM 1 SN 1 SO 1 SP 1 SQ 1 SR 1 SS 1 ST 1 SU 1 SV 1 SW 1 SX 1

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58 1
59 1SY 1SZ 1TA 1TB 1TC 1TD 1TE 1TF 1TG 1TH 1TI 1TJ 1TK 1TL 1TM 1TN 1TO 1TP 1
60 1
61 1TQ 1TR 1TS 1TT 1TU 1TV 1TW 1TX 1TY 1TZ 1UA 1UB 1UC 1UD 1UE 1UF 1UG 1UH 1
62 1
63 1UI 1UJ 1UK 1UL 1UM 1UN 1UO 1UP 1UQ 1UR 1US 1UT 1UU 1UV 1UW 1UX 1UY 1UZ 1
64 1
65 1VA 1VB 1VC 1VD 1VE 1VF 1VG 1VH 1VI 1VJ 1VK 1VL 1VM 1VN 1VO 1VP 1VQ 1VR 1
66 1
67 1VS 1VT 1VU 1VV 1VW 1VX 1VY 1VZ 1WA 1WB 1WC 1WD 1WE 1WF 1WG 1WH 1WI 1WJ 1
68 1
69 1WK 1WL 1WM 1WN 1WO 1WP 1WQ 1WR 1WS 1WT 1WU 1WV 1WW 1WX 1WY 1WZ 1XA 1XB 1
70 1
71 1XC 1XD 1XE 1XF 1XG 1XH 1XI 1XJ 1XK 1XL 1XM 1XN 1XO 1XP 1XQ 1XR 1XS 1XT 1
72 1
73 1XU 1XV 1XW 1XX 1XY 1XZ 1YA 1YB 1YC 1YD 1YE 1YF 1YG 1YH 1YI 1YJ 1YK 1YL 1
74 1
75 1YM 1YN 1YO 1YP 1YQ 1YR 1YS 1YT 1YU 1YV 1YW 1YX 1YY 1YZ 1ZA 1ZB 1ZC 1ZD 1
76 1
77 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1

a b c d e f g h i j k l m n o p q r s t u v w x y z aa ab ac ad ae af ag ah ai aj ak

Final score: 680,00

Input 3:

Board:

43

3 5 6 6

4 1 0 3

3 3 3 2

Modifications:

a0

a1

a2

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b0

b1

b2

c0

c2

d0

d1

Final Board and Score:

0 4 6 7 7

1 5 2 A 4

2 4 4 4 2

a b c d

Final score: 1,41