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1: //Kalli Bonin and Derek Broekhoven
2: //Question 3 - Paving Stones
3:
4: #include <iostream>
5: #include <cmath>
6: #include <cstdlib>
7: #include <fstream>
8:
9: using namespace std;
10:
11: const double TOL_SIDE = 0.7;
12: const double TOL_ANGLE = 0.5;
13:
14: int main()
15: {
16:     ifstream fin("stones.txt");
17:     ofstream fout("shapes.txt");
18:
19:     if (!fin || !fout)
20:     {
21:         cout << "Could not open file.";
22:         return EXIT_FAILURE;
23:     }
24:
25:     int numStones = 0;
26:     fin >> numStones;
27:
28:     for (int i = 0; i < numStones; i++)
29:     {
30:         double a = 0, b = 0, angle = 0;
31:
32:         fin >> a >> b >> angle;
33:
34:         if (fabs(a-b) < TOL_SIDE)
35:         {
36:             if (fabs (angle - 90) < TOL_ANGLE)
37:                 fout << "Square" << endl;
38:             else
39:                 fout << "Rhombus" << endl;
40:         }
41:         else
42:         {
43:             if (fabs (angle - 90) < TOL_ANGLE)
44:                 fout << "Rectangle" << endl;
45:             else
46:                 fout << "Parallelogram" << endl;
47:         }
48:     }
49:
50:     fin.close();
51:     fout.close();
52:
53:     return EXIT_SUCCESS;
54: }

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