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#include <stdio.h>

// 求解拉格朗日插值

double lagrangeInterpolation(double x[], double y[], int n, double xi) {

double result = 0.0;

for (int i = 0; i < n; i++) {

double term = y[i];

for (int j = 0; j < n; j++) {

if (j != i) {

term \*= (xi - x[j]) / (x[i] - x[j]);

}

}

result += term;

}

return result;

}

int main() {

// 给定的数据点

double x[] = {0.0, 1.0, 2.0, 3.0, 4.0};

double y[] = {2.0, 3.0, 5.0, 1.0, 2.0};

int n = sizeof(x) / sizeof(x[0]);

// 要进行插值的点

double xi =0;

scanf("请输入要进行插值的点的值 %.2f\n”,&xi);

// 求解插值

double Ki = lagrangeInterpolation(x, y, n, xi);

printf("在 x = %.2f 处的插值结果为: %.2f\n", xi, Ki);

return 0;

}