Overview of C++ - Geometrical Procedures with Spatial Coordinates

C++ Training for Space Engineering

August 8, 2024

Exercises

Exercise 1

Given two points in 3D space $A(x_1, y_1, z_1)$ and $B(x_2, y_2, z_2)$, write a C++ program to calculate the Euclidean distance between them.

Exercise 2

Write a C++ program to find the midpoint M between two points $A(x_1, y_1, z_1)$ and $B(x_2, y_2, z_2)$ in 3D space.

Exercise 3

Given three points $A(x_1, y_1, z_1)$, $B(x_2, y_2, z_2)$, and $C(x_3, y_3, z_3)$ in 3D space, write a C++ program to determine if these points form a right triangle.

Exercise 4

Write a C++ program to calculate the area of a triangle formed by three points $A(x_1, y_1, z_1)$, $B(x_2, y_2, z_2)$, and $C(x_3, y_3, z_3)$ in 3D space using the cross product.