Project 1 for Parallel Computation

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This file is to further explain the C file for the first project of Parallel Computation. The problem was to solve a PDE:

$$\frac{\partial u}{\partial t} - \nabla^2 u = f$$

The region for the problem was:

$$|x| + |y| + |z| \leq 1$$

The boundary conditions for the problem was Dirichlet Boundary Condition on the upper half surface, and Neumann Boundary Condition on the lower half part. The problem didn't specify a function $f(x, y, z)$ and the boundary conditions, instead, a test function

$$u = 100t \sin x \sin y \sin z$$

was set casually and used to test the accuracy of the numeric solution, and the function $f(x, y, z)$ and boundary conditions were set accordingly.The method used to solve the PDE was explicit difference, which was also known as forward format, according to the requirements.