AIM Lid-Driven Cavity - Physics Set-Up

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- Problem Specification 1. Pre-Analysis & Start-Up
- 2. Geometry
- 3. Mesh
- 4. Physics Setup
- 5. Results
- 6. Verification & Validation

Physics Set-Up

Material Assignment

The problem specifies that the fluid material is water while the default assignment is air. Once inside the **Physics** template select **Material Assignments**. Under the **Material** drop down menu select **Water (Material Samples)**.

Boundary Conditions / Forces

Since this problem statement only specified the lid of the box as moving, we assign a wall condition to the top face of the volume. Select the **Physics** task. In the **Fluid Flow Conditions** section, press **Add** > **Wall** and select the top face of the flow volume. In the **Flow Specification**, change **Wall velocity** from **Stationary** to **Moving** and specify the **Magnitude** as 1 [m s^-1], as given in the problem description. Now that the wall is moving, a direction must be specified by inputting a value in the **Cartesian Direction Components**. Input 1 as X while Y and Z must be zero. See below for an example.

A symmetry condition is applied to two opposing faces (shown below). Select symmetry from the Add dropdown menu and apply it to two opposing faces.

Next, a wall condition must be added to all surfaces that are not already defined. Wall can be found in the same Add menu as the previous conditions. Once the Wall condition is chosen, AIM selects every face that doesn't already have a boundary condition on it.

Go to Step 5: Results

Go to all ANSYS AIM Learning Modules