

Unstructured mesh generation using GMSH

Talk to a Teacher

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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Date: 19 June 2015



Learning Objectives

- Create an unstructured mesh in GMSH



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- Create an unstructured mesh in GMSH
- Create plane surfaces



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- Basic manipulations using the file with extension .geo



System Requirement

- **Ubuntu Linux Operating System 14.04**



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- **GMSH version 2.8.5**



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- **OpenFOAM version 2.4.0**



Pre-requisite

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Creation of sphere using GMSH



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- We have already learnt to create a sphere using GMSH earlier

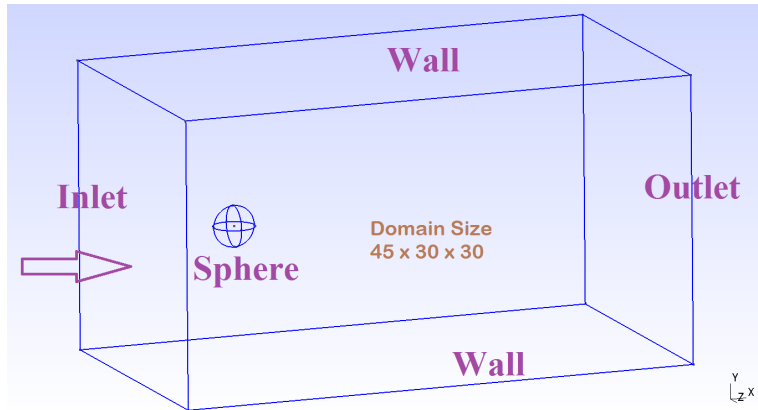


Pre-requisite

- This tutorial is a continuation of: Creation of sphere using GMSH
- We have already learnt to create a sphere using GMSH earlier
- If you don't know how to do so, refer to the GMSH spoken tutorials in the OpenFOAM series on <http://spoken-tutorial.org>



Sphere Geometry and Domain



Points of Domain

- Note that the size of the domain is $45 \times 30 \times 30$, and the radius of the sphere is 1



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- However, these dimensions can vary from problem to problem
- Points for domain are:
- $(-15, -15, -15)$, $(-15, 15, -15)$, $(-15, -15, 15)$,
 $(-15, 15, 15)$, $(30, -15, -15)$, $(30, 15, -15)$,
 $(30, -15, 15)$, $(30, 15, 15)$



Impoting mesh in OpenFoam

- Create OpenFOAM case directory without the constant folder



Impoting mesh in OpenFoam

- Create OpenFOAM case directory without the constant folder
- In the case directory copy the newly created file sphere1.msh



Impoting mesh in OpenFoam

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- In the case directory copy the newly created file sphere1.msh
- Using the terminal window go to the case directory of this problem



Summary

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Assignment

- Make refinement in the mesh by changing the values of:



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 - s , d



Assignment

- Make refinement in the mesh by changing the values of:
- s , d
- `Mesh.CharacteristicLengthFromCurvature`



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<http://fossee.in/>



About the Spoken Tutorial Project

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Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- Conducts workshops using spoken tutorials
- Gives certificates to those who pass an online test
- For more details, please write to contact@spoken-tutorial.org



Acknowledgements

- Spoken Tutorial Project is a part of the Talk to a Teacher project
- It is supported by the National Mission on Education through ICT, MHRD, Government of India
- More information on this Mission is available at

<http://spoken-tutorial.org/NMEICT-Intro>

