FLUENT - Flow Past a Cylinder - Step 1

Problem Specification.
1. **Create Geometry in GAMBIT**.
2. Mesh Geometry in GAMBIT.
3. Specify Boundary Types in GAMBIT.
4. Set Up Problem in FLUENT.
5. Solve.
6. Analyze Results.
7. Change the Domain Size.
8. Unsteady Flow.
Problem Set.
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Create Geometry in GAMBIT

Start GAMBIT

Create a new directory called *cylinder* and start *GAMBIT* from that directory by typing gambit -id cylinder at the command prompt.

Under **Main Menu**, select **Solver > FLUENT 5/6** since the mesh to be created is to be used in FLUENT 6.x.x version.

Operation Toolpad > Geometry Command Button > Vertex Command Button > Create Vertex

Create the vertices as listed in the following table. Again, the units can be arbitrary, and you may scale the lengths proportionally.

Label	X	Y	Z
A	0	0	0
B	0.5	0	0
C	0	0.5	0
D	-0.5	0	0
E	-5	0	0
F	-5	5	0
G	0	5	0
H	20	5	0
I	20	0	0
J	20	-5	0
K	0	-5	0
L	-5	-5	0

Operation Toolpad > Geometry Command Button > Edge Command Button > Create Edge

1.Create circle

Right click **Create Edge** button, then choose Create Full Circle. Choose A as Center, B and C as End-Points, click **Apply** then we get circle ABC.

2.Split the circle

Choose **Split/Merge Edges**. Choose circle ABC for Edge box, and select Split With: Vertex.

Then choose vertex D as reference vertex, click **Apply**. Then circle will be split to two parts: BCD and BMD.

3.Create the straight line.

Under **Edge**, choose Create Straight Edge: D and E, E and F, F and G, G and H, H and I, E and L, L and K, K and J, J and I , then B and I.

Operation Toolpad > Geometry Command Button > Face Command Button > Form Face

Right click and choose Create Face from Wireframe.

Choose Edge DE, EF, FG, GH, HI, IB, and BCD to create face1. Similarly, choose DE, EL, LK, KJ, JI, IB and BMD to create face2.

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