Model an Animation Ready Character Body

Model an animation ready male character body. Copyright Niko Mäkelä 2010.
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This tutorial shows how to model a male character starting from a box. End result is suitable for both animation and sculpting. This pdf should be accompanied by the final mesh in OBJ-format. The mesh, just like this tutorial, is free to share and to use in your projects. Just give credit where due, thank you.

Selling the tutorial or the mesh is NOT allowed. This is free learning material for all.

The body has no face or head details, for that is a topic enough for another tutorial. I also omitted toes completely, because very often the characters will be wearing shoes – or if not toes are easy thing to add.

While working I use mirroring over the x-axis. What I do on one right-hand side happens on the left as well. Please start with a similiar setup.

This is the mesh we will build. It has no UVW-mapping, so apply your own for texturing. Something like AUV-tiles in Zbrush would work great with this.
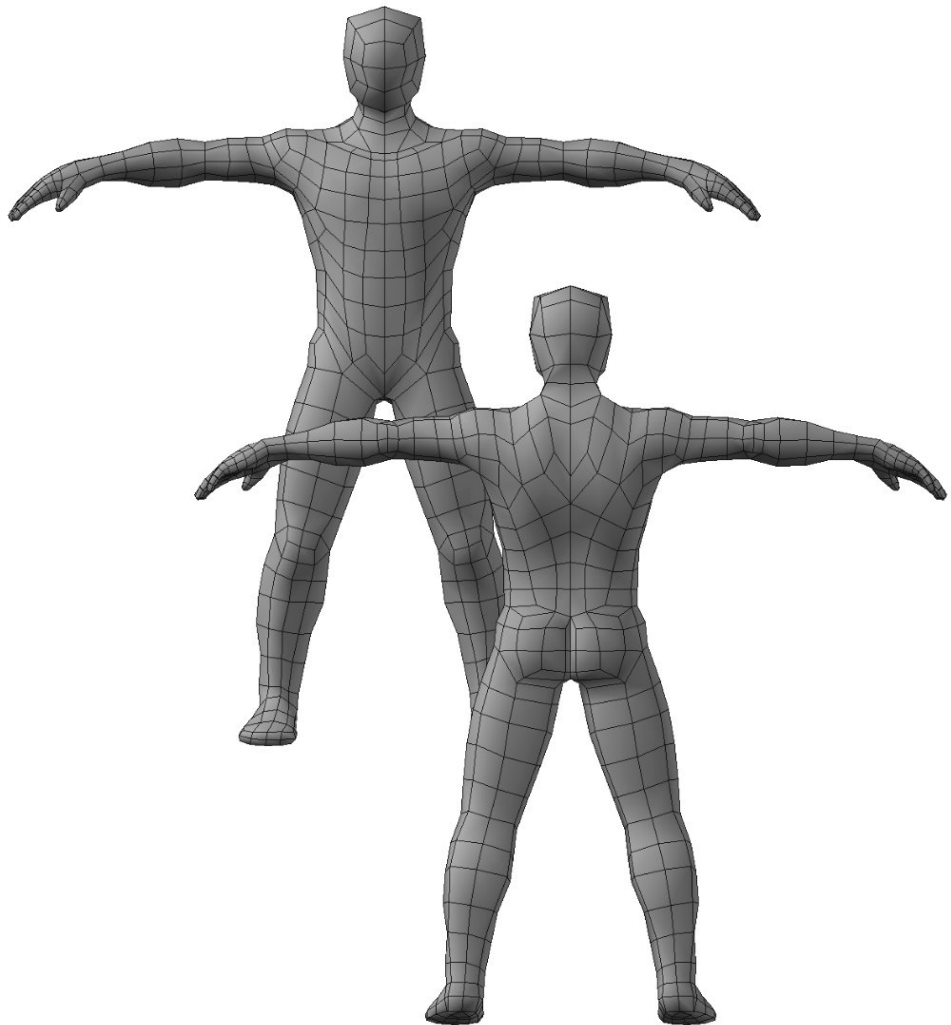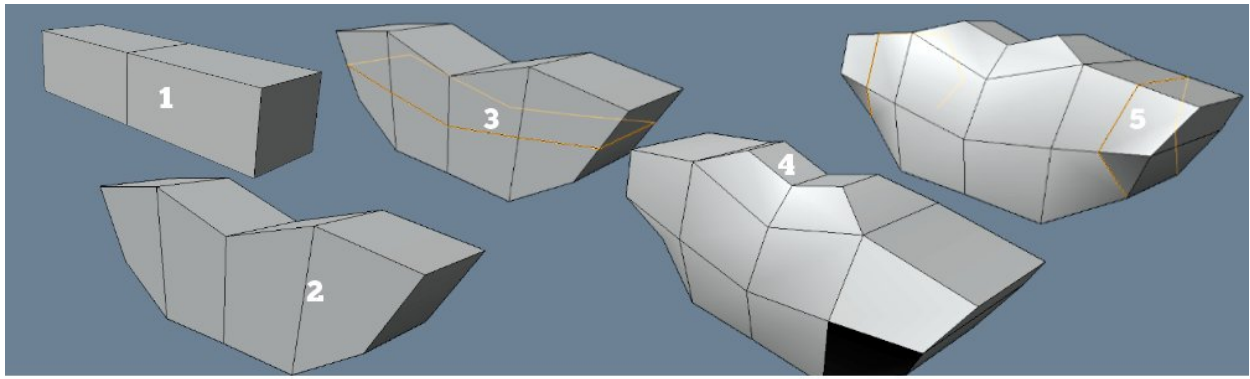
Background

Tutorial is based on research and personal experience on what type of mesh works well in animation. You can read following background articles, if you like.
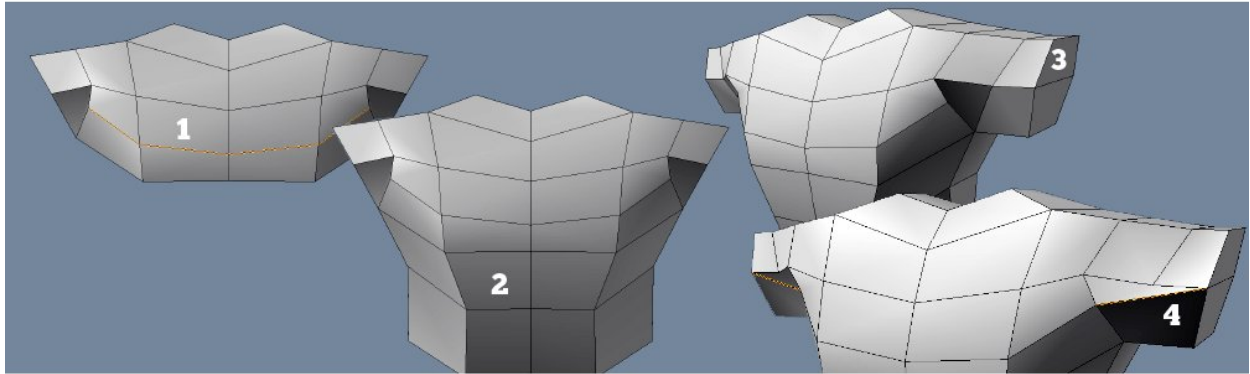http://www.cgmascot.com/design/surface-flow-matters/
http://www.cgmascot.com/design/modeling-for-animation-body/
http://www.cgmascot.com/design/modeling-animation-test/

1.box   2.extrude to shape shoulders   3.cut around for more square polys   4.bevel start of the neck
5.cut around both ends

1.cut to make all quads again(front and back)   2.bevel the torso out in 2 steps   3.extrude shoulder or arm
beginning out once   4. turn lower edge like shown(front only)
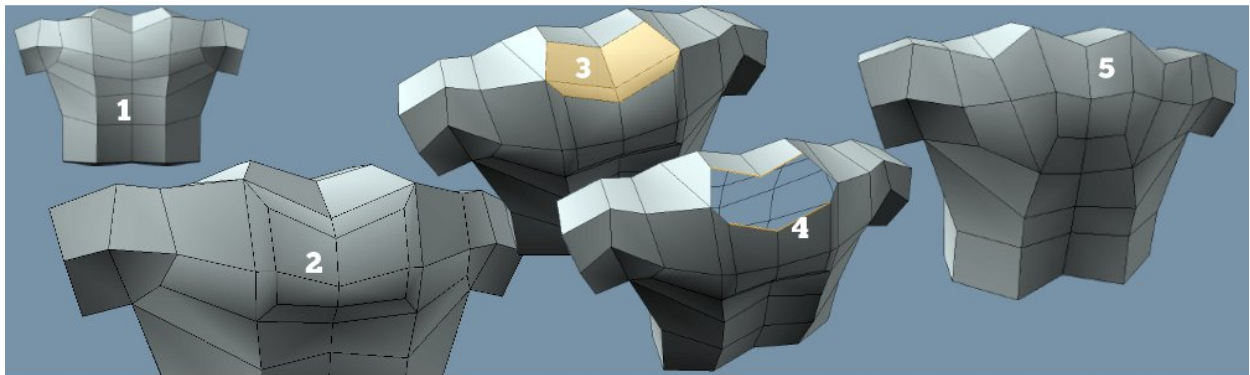
1.moving to back   2.bevel the 4 quads below the neck to begin back-muscles   3.select and delete
polys between neck and the new polys   4.weld these edges together to connect(5) neck and with back muscles
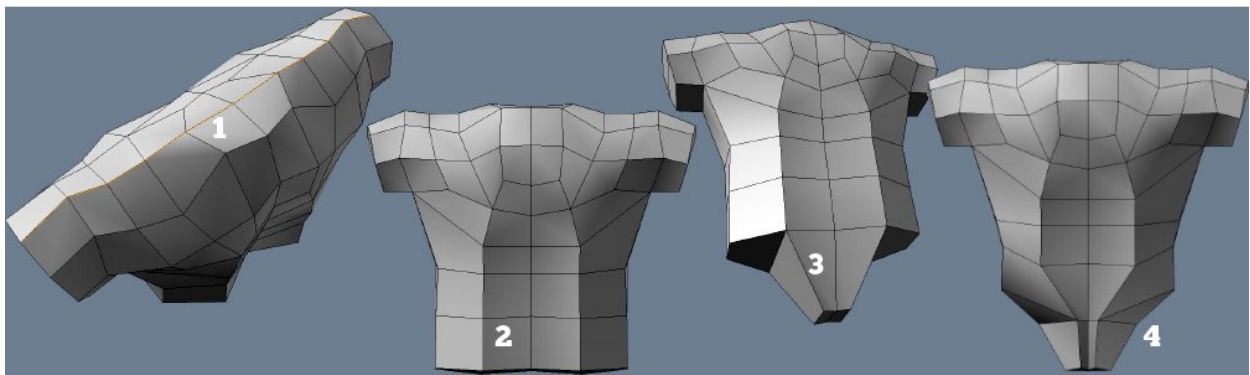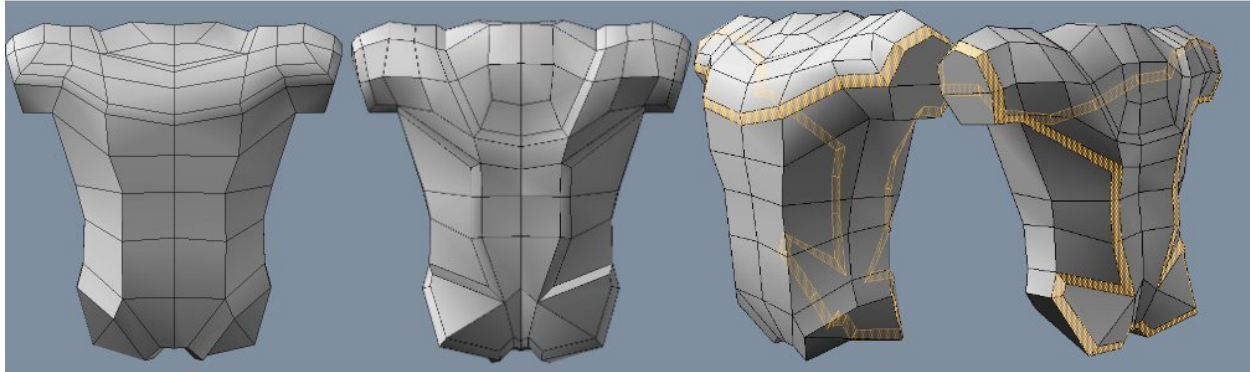

1.cut over the top horisontally   2.extrude torso out once more   3.bevel start of the hips 4.and shape it
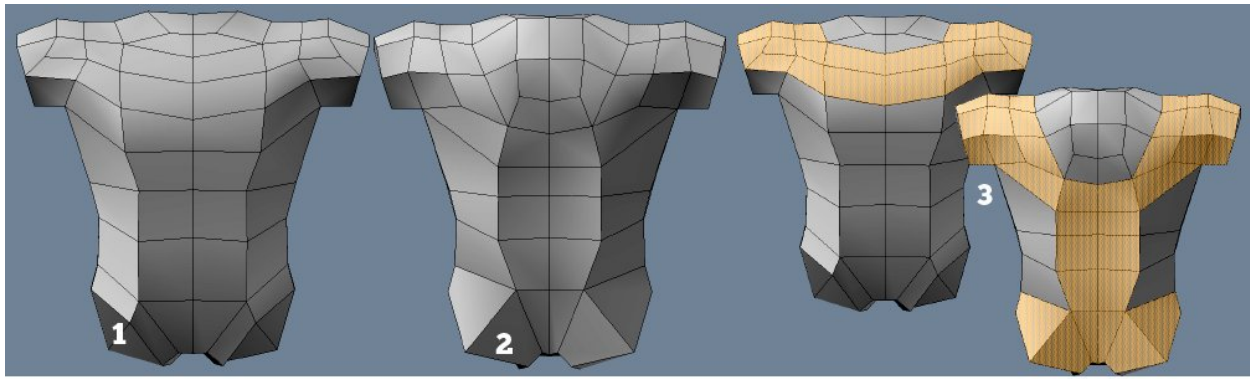
1.bevel leg start and shape it(2)   3.make shown selections around the mesh. These are used to bevel out important edgeloops


here is the beveled result – if we loop select the new polys, it draws a long continous loop. This is used to both define and control the subdivision and deformation of chest, shoulder,back and bottom muscles/masses
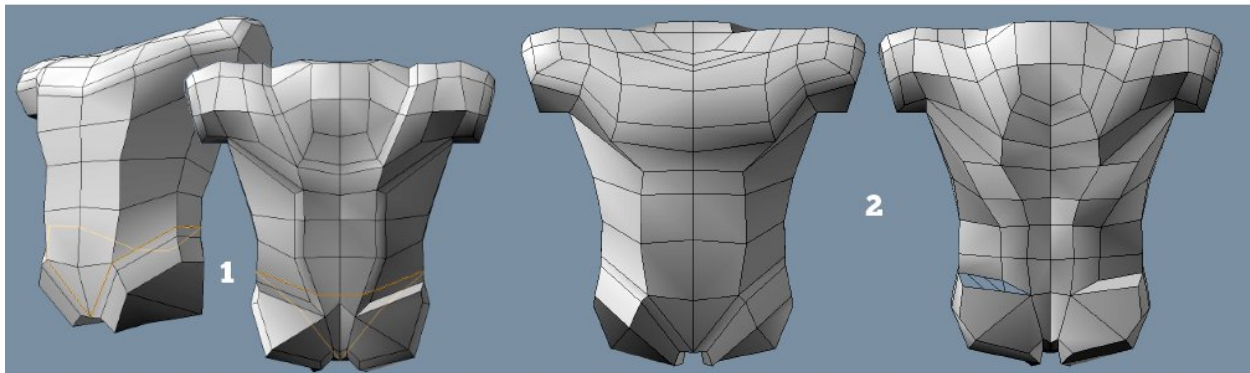
1.cut and edge around the legs and back   2. shape the mesh a bit futher, push points and polys around. You can be creative - no need to make the same proportions or character I'm making
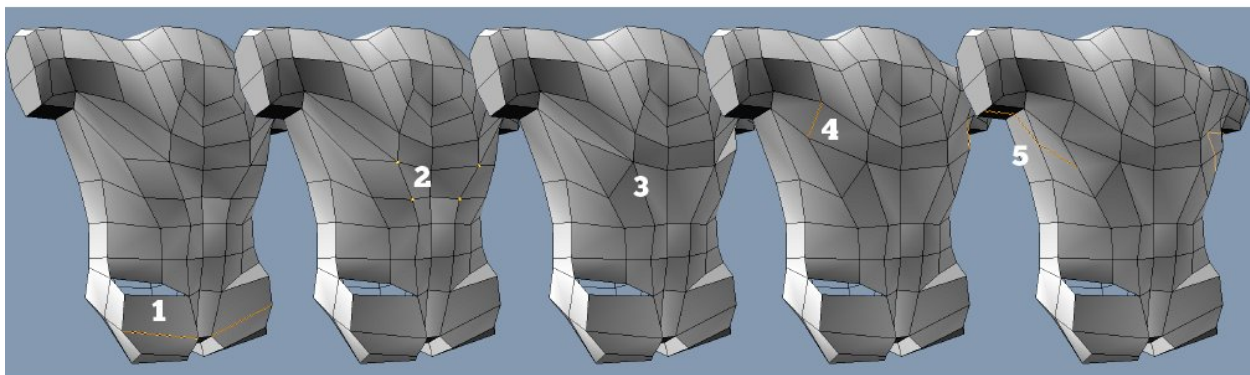
1.turn the edges on buttocs   2.select these verts and weld them(3)   4.turn that edge like shown   5.and cut from the new triangle to the side and below the arm
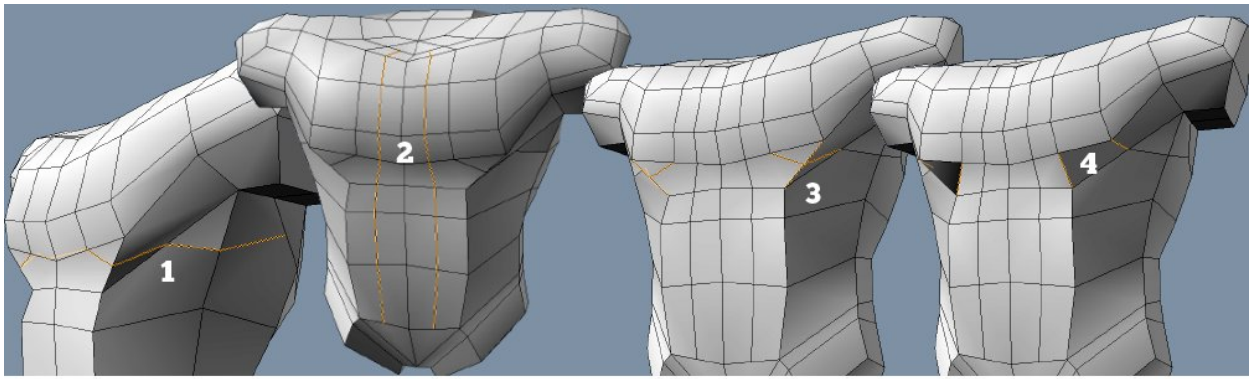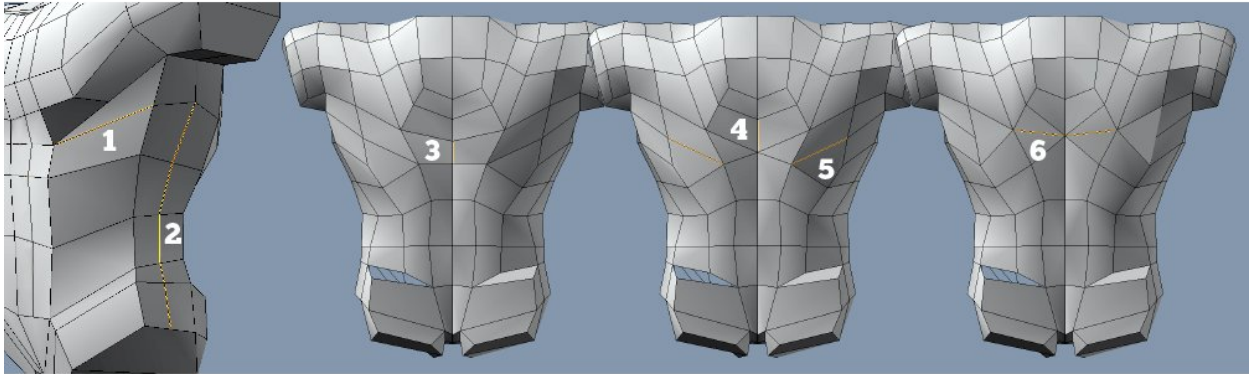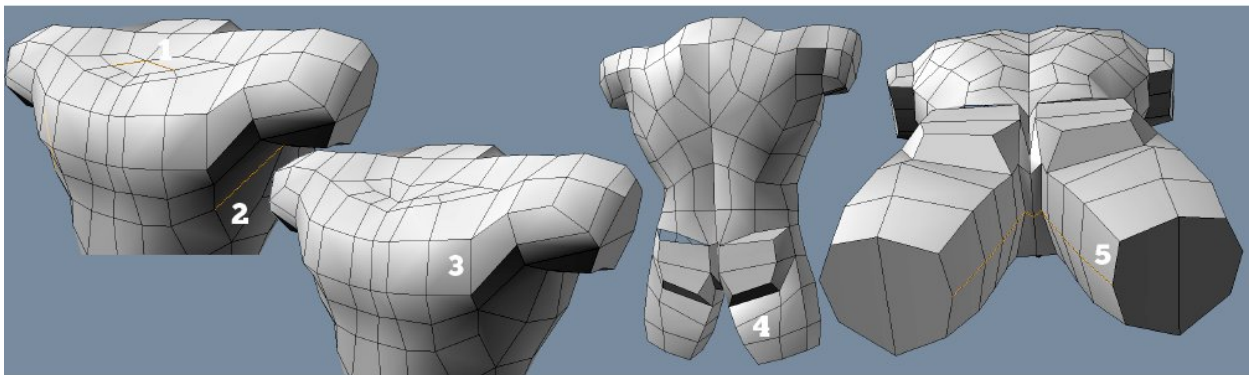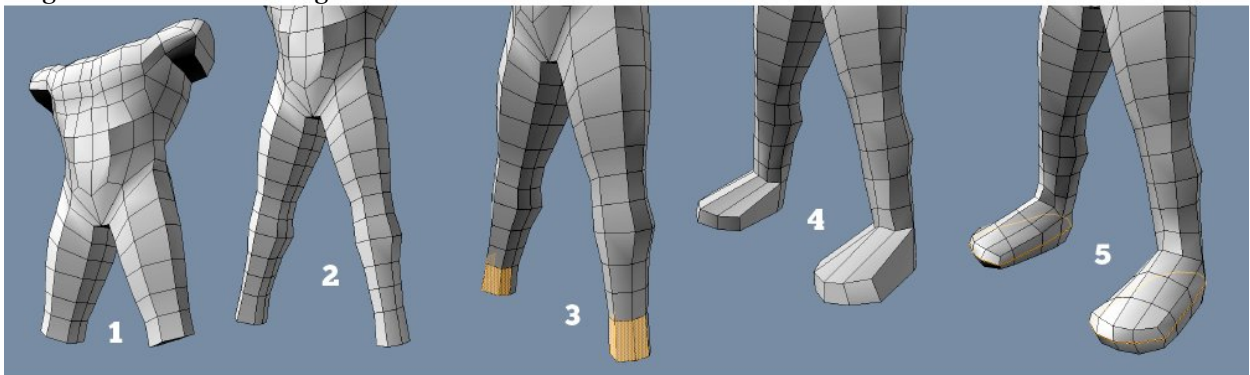
1.cut from chest to side   2.and from neck to stomach   3.remove these edges   4.adding these instead


1.turn the edge like so and cut(2) from under the arm down to the hip   3.collapse this edge and this(4) too
     5.turn this edge   6.and remove this edge


1.turn this edge and this(2) too, result being this(3)   4.bevel the legs out in 3 steps   and add an edge
running on the inside of the leg

1.beveling the legs out again,2 steps(knee area)   2.andthen 4 steps more all the way down to heel 3.select 4 front
polys and pull them out to start the foot   5.shape the foot with 3 cuts around it, 1 on the side, 2 on lenght
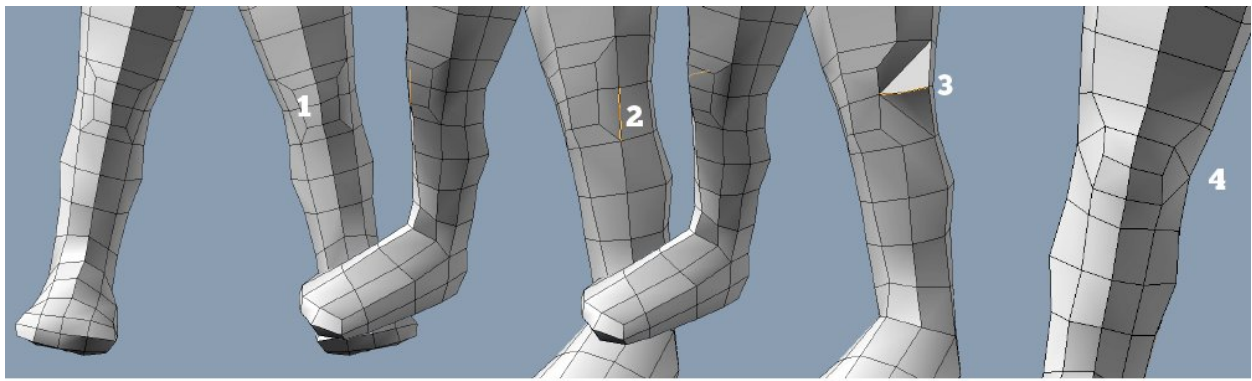
1.bevel 4 polys out to begin the knee   2.select the edge on the outside of the knee area and turn it and the edge above to get this(3) – and remove shown middle edge   4.repeat on both sides of the knee to get this
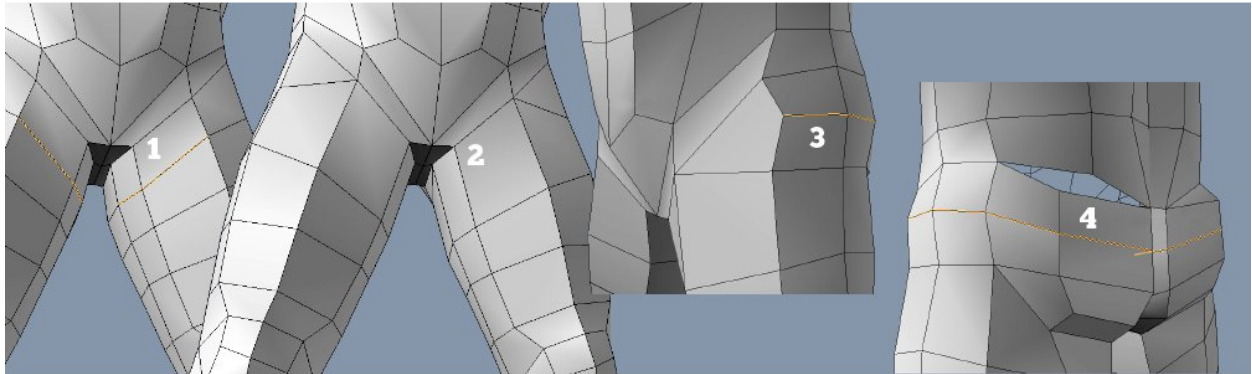
1.select these edges and weld them up to the crotch(2)   3.start a new edge(making the triangle a quad) and draw it around the hips
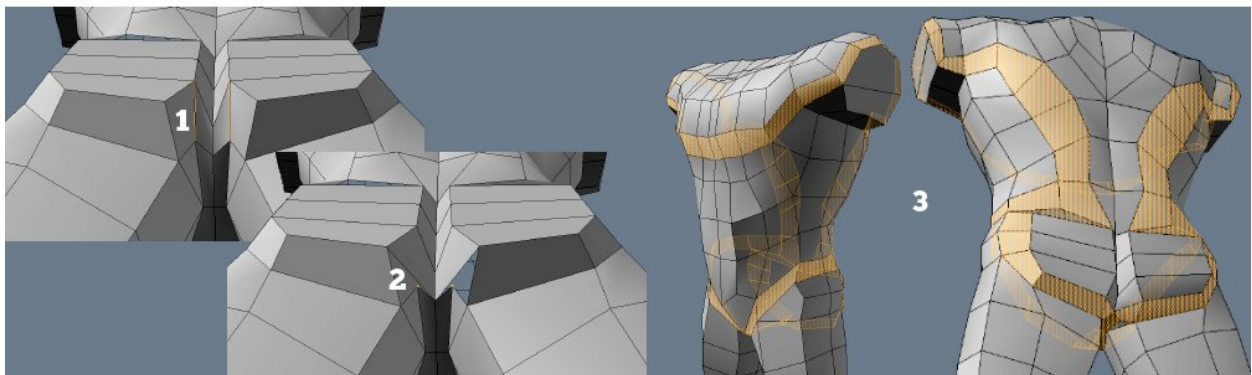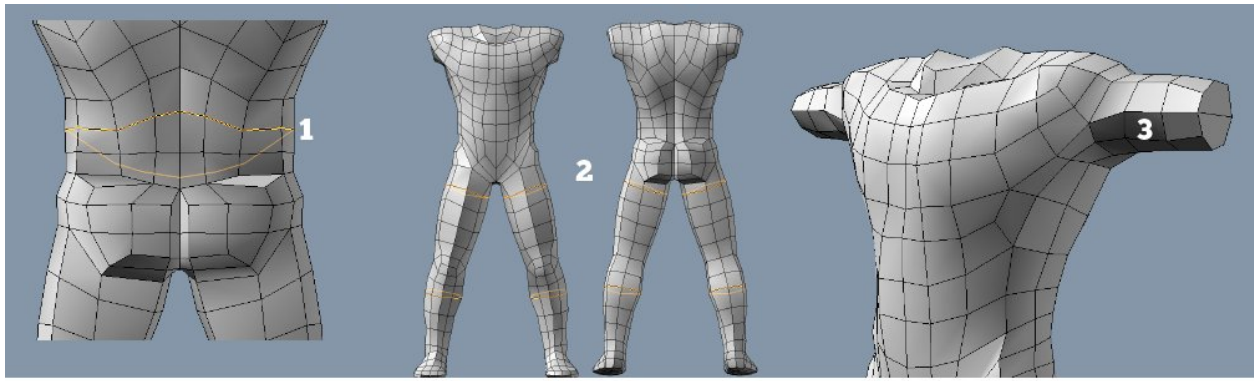

1.on the inside of the bottom turn this edge to get this(2), where move the shown verts to make the messed up polygons planar again   3.now the edgeloop is directed to go around like so
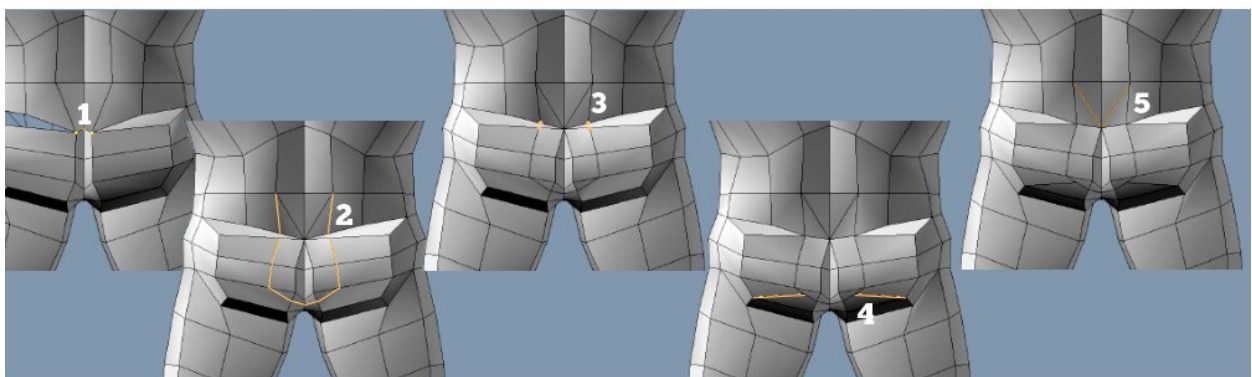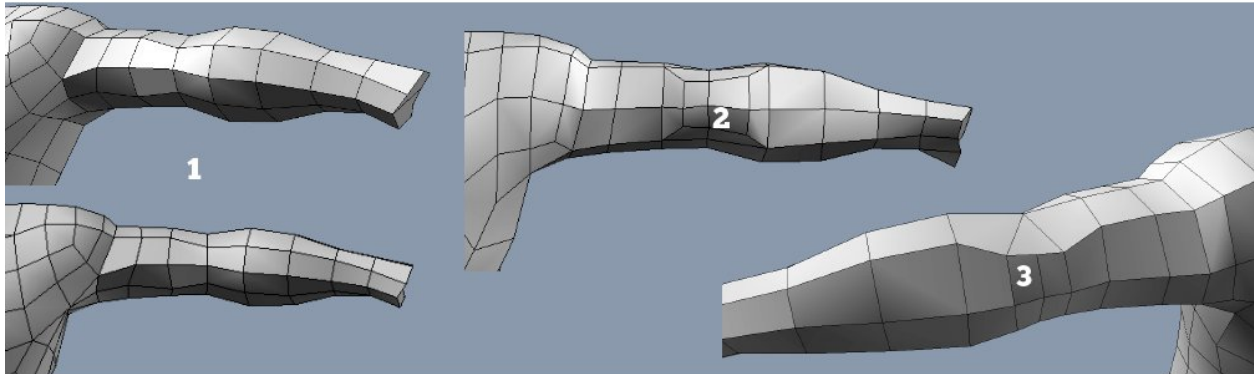

1.connect these verts   2.and draw edges like so   3.connect these verts as well   4.add edge to make the triangle to a quad   5.and remove these edges – after some shaping the bottom is done
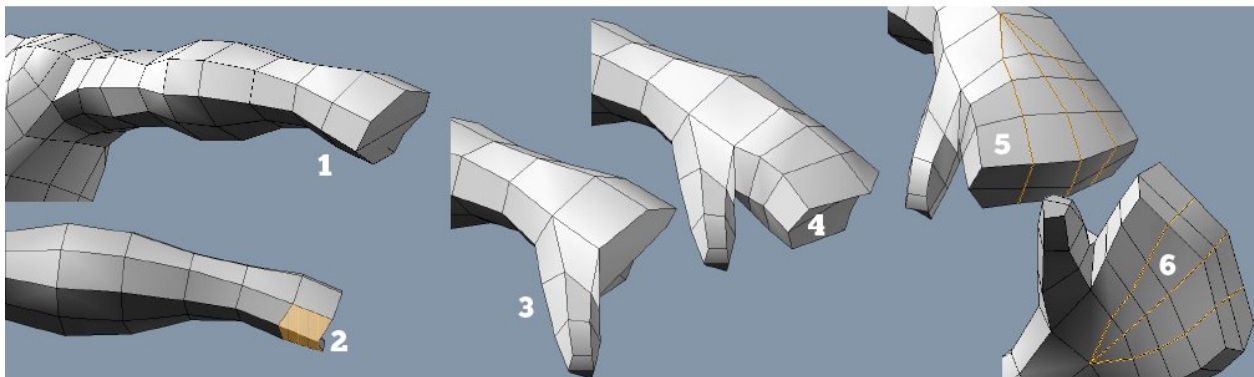
1.add a edgeloop to get move square polys   2.here is where I shaped my 'dwarf' to more heroic human shape and added 2 needed loops(as polys were stretching)   3.pull out the arm, 3 steps


1.continue bringing out the arm, 4 steps with shaping it all the while   2.on the back of the arm bevel in the beginning of the elbow   3.then, like you did the knee, do same with elbow

1.pull one more bt of the arm, the hand now, actually   2.select these polys and bevel out the thumb(3) in 3 steps   4.bevel the palm with 3 steps   5.cut the hand like so to make places for the fingers
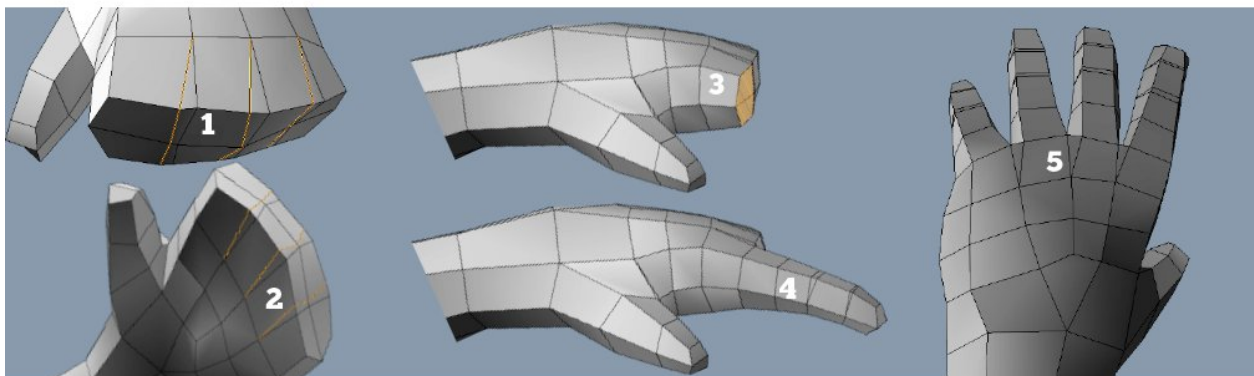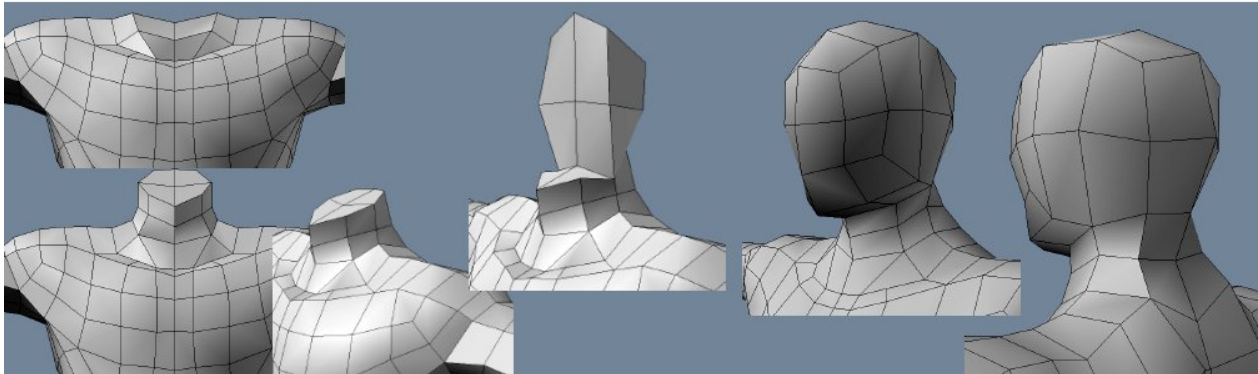

1 and 2.cut a bit more to make space that will be between the fingers   3.and then bevel and shape the finger – notice the cuts I added for joints(4)   5.do other fingers the same way

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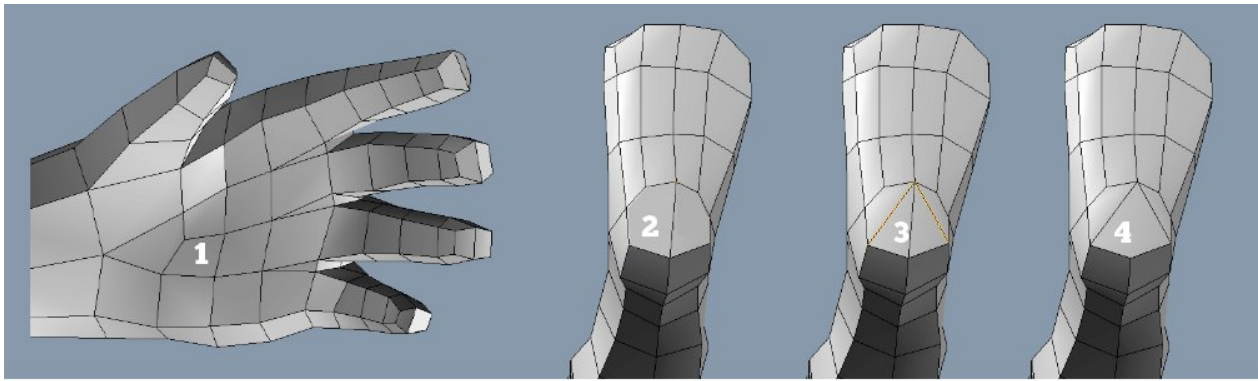
1.the hand just to be clear   2.going back to foot, should look like this   3.add these edges and remove the middle one(4) – happy quads again

And this is how I built the temporary head. I'm not explaining this as the head is a placeholder. You can find tons of tutorials for modeling a head on the internet. I will probably make one too, later.

If you for some reason want to use this head and if you will be doing sculpting, better add a few more cuts around the head. You need more polygons there before ever beginning subdividing and sculpting.

I hope you found this tutorial helpful. Like it or hate it - I'd love the feedback. For that and more tutorials, tips and articles check out
http://www.cgmascot.com