



SCHOOL OF COMPUTING

SESSION 2020/2021 SEMESTER 2

SECV2213 - FUNDAMENTAL OF COMPUTER GRAPHICS

SECTION 01

ASSIGNMENT 3 - 3D Modelling

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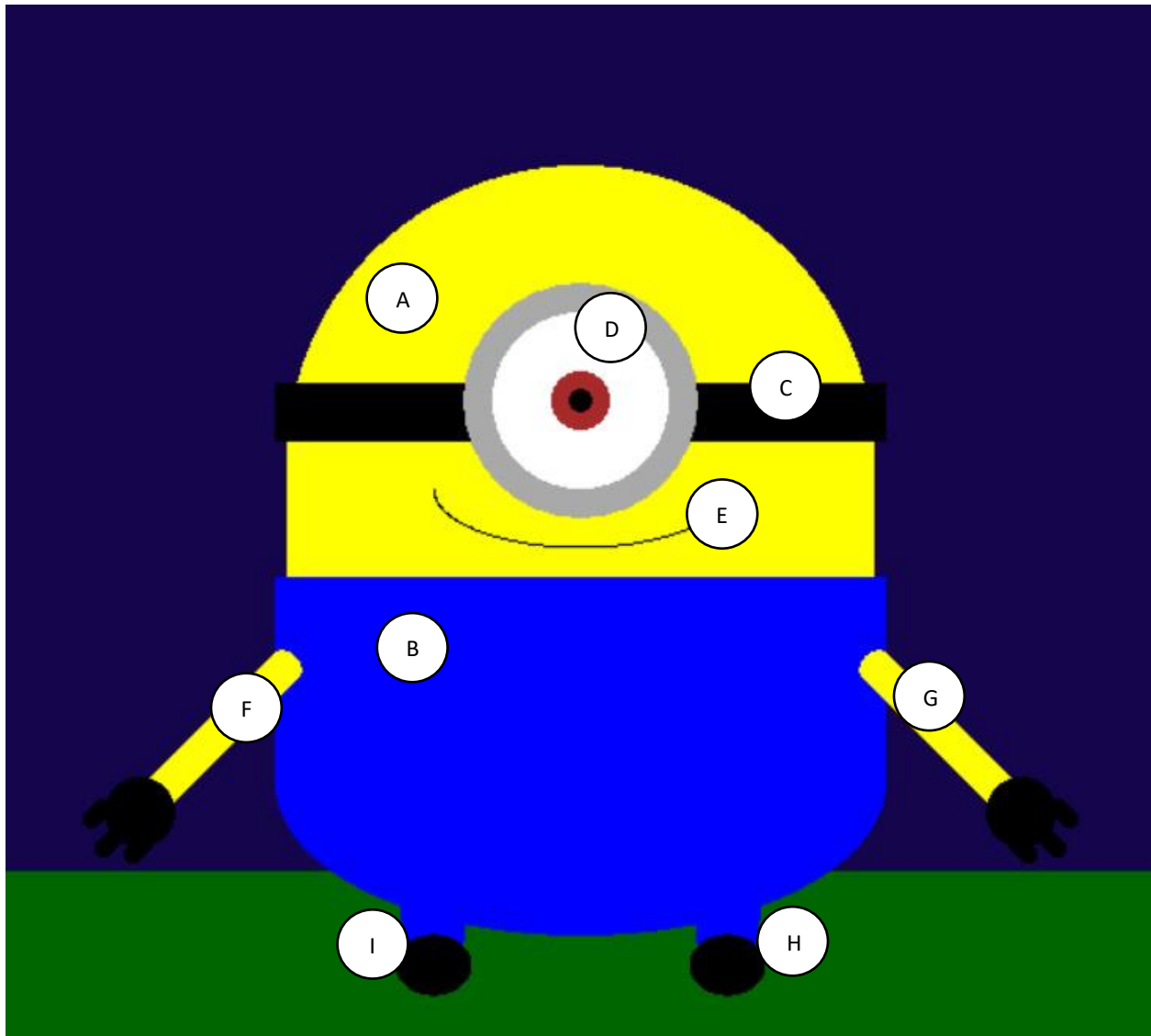
LECTURER'S NAME: DR GOH EG SU

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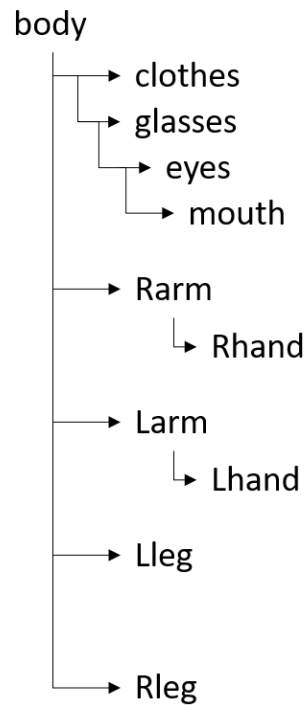
Moveable (Minion-Assignment3.cpp)

Output



A:	body	F:	Rarm
B:	clothes	G:	Larm
C:	glasses	H:	Lleg
D:	eyes	I:	Rleg
E:	mouth		

Hierarchy diagram



3D Transformation

Motion	Pivot point	Description
Wave hand (Left)	Larm rotate at (0.5f, -0.15f, 0.0f) Lhand rotate at (0.75f, -0.4f, 0.35f)	The parent node of left arm is (0.5f, -0.15f, 0.0f). When pressing 'l' or 'L', left arm rotates if the angle of rotation is less than 45°. Under left arm, the hand waves if angle less than 90° at point (0.75f, -0.4f, 0.35f).
Wave hand (Right)	Rarm rotate at (-0.5f, -0.15f, 0.0f) Rhand rotate at (-0.75f, -0.4f, 0.35f)	The parent node of right arm is (-0.5f, -0.15f, 0.0f). When pressing 'r' or 'R', right arm rotates if the angle of rotation less than 45°. Under right arm, the hand waves if angle more than 90° at pivot point (-0.75f, -0.4f, 0.35f)

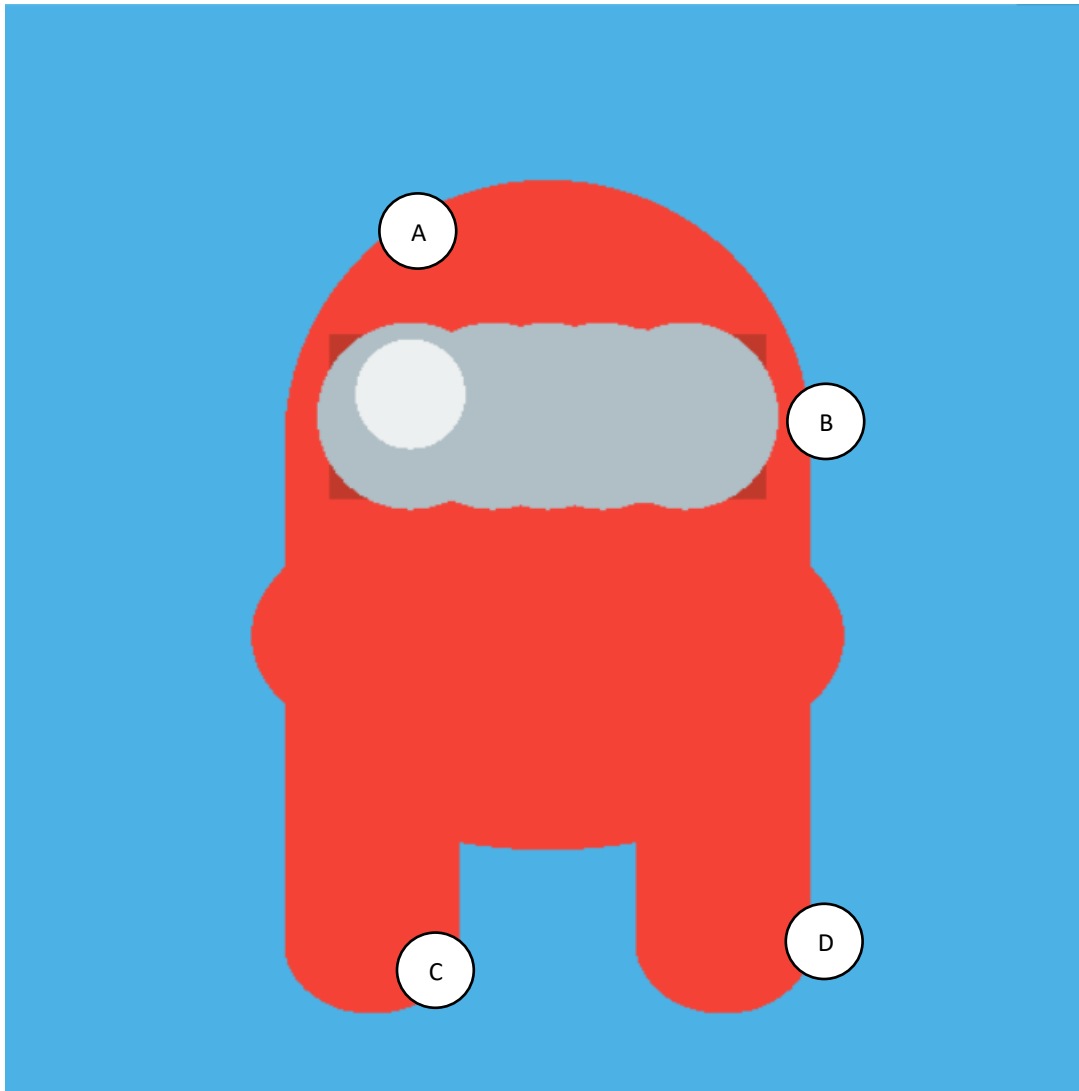
Sit	Lleg rotate at $(0.25f, -0.53f, 0.0f)$ Rleg rotate at $(-0.25f, -0.53f, 0.0f)$	The parent node of left leg and right leg are $(0.25f, -0.53f, 0.0f)$ and $(-0.25f, 0.53f, 0.0f)$ respectively. When pressing 'S', legs bend if the angle of rotation less than 180° .
Stand	Lleg rotate at $(0.25f, -0.53f, 0.0f)$ Rleg rotate at $(-0.25f, -0.53f, 0.0f)$	The parent node of left leg and right leg are $(0.25f, -0.53f, 0.0f)$ and $(-0.25f, 0.53f, 0.0f)$ respectively. When pressing 's', legs bend if the angle of rotation more than 0° .

Video link

<https://youtu.be/zWtx8ICGEXY>

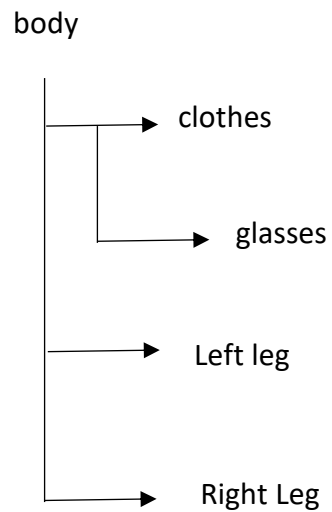
Static (Assignment 3 – Among us.cpp)

Output



A:	body
B:	glasses
C:	Left leg
D:	Right Leg

Hierarchy diagram



3D Transformation

Part	Pivot point	Description
Glasses	<code>glTranslatef(0.0, 0.25, 0.0);</code> <code>gluSphere(eye1, 0.17, 100,</code>	Spec1, Spec2 and Spec3 represent the glass ball in front the glasses. Specmiddle1, Specmiddle2 and Specmiddle3 represent the glass ball in the middle of the glasses. The value of gluSphere is the same but we change the glTranslate for each function
Glasses Shine	<code>glTranslatef(-0.25, 0.29, 0.35);</code> <code>gluSphere(shine, 0.10, 93, 20);</code>	This Specshine is the shining at the glass ball but we change the value of gluSphere and also glTranslate
Leg (Left and Right	<code>glTranslatef(0.32, -0.40, 0.8);</code> <code>glRotatef(90.0f,1.0f,0.0f, 0.0f);</code> <code>gluCylinder(LLeg1, 0.159, 0.159, 0.3, 20, 20);</code>	LLeg and RLeg is the leg after the body and we use the the same value of gluCylinder and glTranslatef but differet glRotatef to distinguish position both feet