

Introduction to Computer Graphics

Programming Project 2

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OpenGL Mech Program User Guide:

Movement Controls:

❖ Forward/Backward:

- - Press 'q' to advance the right shoulder.
- - Press 'a' to retract the right shoulder.
- - Press 'w' to advance the left shoulder.
- - Press 's' to retract the left shoulder.

❖ Outward/Inward:

- - Press 'z' to extend the right arm outward.
- - Press 'x' to retract the right arm inward.
- - Press 'Z' to extend the left arm outward.
- - Press 'X' to retract the left arm inward.

Arm Control Functions:

❖ Shoulder Rotation:

- - Press 'q' and 'a' to rotate the right shoulder.
- - Press 'w' and 's' to rotate the left shoulder.
- - Press '1' and '2' for additional shoulder rotations.

❖ Elbow Movement:

- - Press 'A' to increase the right elbow angle.
- - Press 'Q' to decrease the right elbow angle.
- - Press 'S' to increase the left elbow angle.
- - Press 'W' to decrease the left elbow angle.

❖ Lateral Movement:

- - Press 'Z' and 'z' to raise and lower the right arm laterally.
- - Press 'X' and 'x' to raise and lower the left arm laterally.

Leg Control Functions:

❖ Leg Movement:

- - Press 'y' and 'u' to raise and lower the right leg.
- - Press 'h' and 'j' to raise and lower the left leg.
- - Press 'Y' and 'U' to move the right leg outward and inward.
- - Press 'H' and 'J' to move the left leg outward and inward.

❖ Foot and Ankle Control:

- - Press 'n' and 'm' to control the toes of the right foot.
- - Press 'N' and 'M' to control the toes of the left foot.
- - Press 'k' and 'l' to control the ankle of the right foot.
- - Press 'K' and 'L' to control the ankle of the left foot.

Torso Control Functions:**❖ Rotation:**

- - Press 'd' to rotate the torso to the right.
- - Press 'g' to rotate the torso to the left.

❖ Tilt:

- - Press 'r' to tilt the torso forward.
- - Press 'f' to tilt the torso backward.

View Position Functions:**❖ View Rotation:**

- - Use the arrow keys (right, left, up, down) to rotate the view.

Light Source Position Functions:**❖ Light Rotation:**

- - Press 'p' to turn the light source right.
- - Press 'i' to turn the light source left.
- - Press 'o' to move the light source forward.
- - Press '9' to move the light source backward.

Miscellaneous Functions:**❖ Fire Cannon:**

- - Press 'Page Up' to fire the cannon.

❖ Animation:

- - Press '1' to start the walking animation.
- - Press '2' to stop the walking animation.

❖ Wireframe Toggle:

- - Press '3' to toggle between wireframe and solid view.

❖ Quit:

- - Press '4' to exit the program.