

A.3 WorkoutUOW-18

A.3.1 Textual instructions

The textual instructions of the actions are given as follows.

- **Standing clamshells**
 - Begin in standing position with arms beside body.
 - Place your hands on your waist.
 - Raise the left knee in the front of body approximately 45 degrees and place your left foot on the inside of your weight-bearing knee (right knee).
 - Keeping your foot in contact with this knee, rotate your flexed leg out to the side using your hip muscles and hold for 5 seconds.
 - Return to starting position.
- **Balance**
 - Begin in standing position with arms beside body.
 - Place and press the sole of the left foot on the inner right calf.
 - Press your palms together in prayer position at your chest, with your thumbs resting on your sternum.
 - Inhale as you extend your arms overhead, reaching your fingertips to the sky.
 - Return to starting position.
- **Leg cycles**
 - Begin in standing position with arms beside body.
 - Place and press the sole of the left foot on the inner right calf.
 - Raise the left leg to the front of the body, keeping it straight.
 - Rotate this leg to the left side and then back to starting position.
 - Raise the right leg to the front of the body, keeping it straight.
 - Rotate this leg to the right side and then back to starting position.
 - Return to starting position.
- **Toe touch kick**
 - Begin in standing position with arms beside body.

- Raise the left leg to the front of the body while simultaneously bending forward at the waist, extending the right arm forward, and reaching with the right hand toward the left foot.
 - Return to the starting position.
 - Raise the right leg to the front of the body while simultaneously bending forward at the waist, extending the left arm forward, and reaching with the left hand toward the right foot.
 - Return to starting position.
- **High knee**
 - Skip in place by hopping on the right leg while bringing the left knee up to waist level.
 - Switch legs (hopping on the left leg while bringing the right knee up to waist level).
 - Repeat the previous two steps for two times.
 - Return to starting position.
- **Prisoner squat**
 - Begin in standing position with arms beside body.
 - Raise your hands and place them behind your head.
 - Keeping your hands behind the head, bend your knees until thighs are parallel to the ground.
 - Return to starting position.
- **Left lunge with right kick**
 - Begin in standing position with arms beside body.
 - Step your right foot out to the side while bringing clasped hands in front of your chest.
 - Bend your left knee until the thigh is parallel to the floor while keeping your right leg is straight.
 - Engaging your abdominals and pushing your weight into you left heel, slowly stand up on your left leg and raise your right leg.
 - Return to starting position.
- **Right lunge with knee up**
 - Begin in standing position with arms beside body.

- Step your left foot out to the side while bringing clasped hands in front of your chest.
 - Bend your right knee until the thigh is parallel to the floor while keeping your left leg is straight.
 - Press through your right heel to stand, immediately raising you right knee.
 - Return to starting position.
- Side to side lunge with bar
 - Begin in standing position with arms beside body.
 - Assume holding a barbell across your traps and shoulders, take a large step to the side using the left foot.
 - Bend your left knee until the thigh is parallel to the floor while keeping your right leg is straight. Push through the left heel to stand and return to the pose in the first step.
 - Bend your right knee until the thigh is parallel to the floor while keeping your left leg is straight.
 - Return to starting position.
- Squat with left kick
 - Begin in standing position with arms beside body.
 - Bend your knees until thighs are parallel to the floor while bringing your clasped hands in front of your chest.
 - Push through your heels to stand up on your right leg, immediately raising you left leg out to the side.
 - Return to starting position.
- 90 degrees raise
 - Begin in standing position with arms beside body.
 - Raise your right arm up in front of your shoulder and your left arm up to the side of your shoulder (your arms should be fully extended at about a 90 degrees angle).
 - Lower both arms down by your sides and return to neutral position.
 - Switch sides to repeat through raising left arm up in the front and right arm up to the side.
 - Return to starting position.

- **Reverse curl and side press**
 - Begin in standing position with arms beside body.
 - With your palms facing down, bend both elbows and curl weights in close to your sides. Note: your hands are at your shoulder height.
 - Extend arms out to your sides at shoulder height, palms still facing down.
 - Return to starting position.
- **Standing L raise**
 - Begin in standing position with arms beside body.
 - Raise your arms out to shoulder height, bending your elbows 90 degree.
 - Without moving your elbows, rotate your forearms up until they are vertical to the floor.
 - Return to starting position.
- **Sitting L raise**
 - Begin in standing position with arms beside body.
 - Bend your knees until thighs are parallel to the floor.
 - Keeping your knees bend, raise your arms out to shoulder height and bend your elbows 90 degree.
 - Without moving your elbows and knees, rotate your forearms up until they are vertical to the floor.
 - Return to starting position.
- **Bend over row**
 - Begin in standing position with arms beside body.
 - Slightly bend your knees, immediately bending your trunk forward (about 45 degrees), and raising your arms to chest height while keeping your palms facing down.
 - Pull your elbows up straight out to the sides from your shoulders.
 - Return to starting position.
- **Bent over lateral raise**
 - Begin in standing position with arms beside body.

- Slightly bend your knees, immediately bending your trunk forward (about 45 degrees), and raising your arms to chest height while keeping your palms facing down.
- Raise your arms out to your shoulder height, keeping arms straight.
- Return to starting position.
- **Standing triceps extension**
 - Begin in standing position with arms beside body.
 - Raise your arms up above your head and straighten your elbows until your arms are vertical to the floor.
 - Bend your elbows to lower your hands behind your head.
 - Return to starting position.
- **Side to side bend strength**
 - Begin in standing position with arms beside body.
 - Raise your arms up above your head and straighten your elbows until your arms are vertical to the floor.
 - Bend the trunk to the left, keeping the elbows straight.
 - Rotate the trunk to the right, keeping the elbows straight.
 - Return to starting position.

A.3.2 Semantic poses based on whole body

Semantic poses based on the whole body are shown in Table A.5 and their linguistic descriptions are described as follows.

- 1: Arms are beside legs.
- 2: Thighs are at an angle to the shins.
- 3: Hands are on the head.
- 4: Upper arms are at shoulder height on the side of the body while forearms are at 90 degrees to upper arms on the side of the body.
- 5: Hands are at waist.
- 6: Forward raised left knee is with thigh at almost 90 degrees to the shin. Hands are at waist.
- 7: Side raised left knee is with thigh at almost 90 degrees to the shin. Hands are at waist.
- 8: Side raised left knee is with thigh at almost 90 degrees to the shin.

- 9: Side raised left knee is with thigh at almost 90 degrees to the shin with clasped hands in the chest.
- 10: Side raised left knee is with thigh at almost 90 degrees to the shin. Outstretched arms are overhead.
- 11: Raised and outstretched left leg is in front of the body. Hands are at waist.
- 12: Raised and outstretched left leg is on the left of the body. Hands are at waist.
- 13: Raised and outstretched right leg is in front of the body. Hands are at waist.
- 14: Raised and outstretched right leg is on the right of the body. Hands are at waist.
- 15: Raised and outstretched left leg is in front of the body. Horizontally outstretched right arm is in front of the body.
- 16: Raised and outstretched right leg is in front of the body. Horizontally outstretched left arm is in front of the body.
- 17: Forward raised left knee is with thigh at almost 90 degrees to the shin.
- 18: Forward raised right knee is with thigh at almost 90 degrees to the shin.
- 19: Thighs are at almost 90 angle to the shins with hands on the head.
- 20: Separate legs are much wider than shoulder with clasped hands close to the chest.
- 21: The left thigh is at almost 90 degrees to the corresponding shin while the right leg is stretched and clasped hands are close to the chest.
- 22: Raised and outstretched right leg is in front of the body with clasped hands in the chest.
- 23: The right thigh is at almost 90 degrees to the corresponding shin while the left leg is stretched and clasped hand are close to the chest.
- 24: Forward raised right knee is with thigh at almost 90 degrees to the shin with clasped hands close to the chest.
- 25: Separate legs are much wider than shoulder with hands beside the corresponding shoulder.
- 26: The left thigh is at almost 90 degrees to the corresponding shin with hands beside the corresponding shoulder.
- 27: The right thigh is at almost 90 degrees to the corresponding shin with hands beside the corresponding shoulder.
- 28: Thighs are at almost 90 degrees to the shins with clasped hands close to the chest.
- 29: Raised and outstretched left leg is in front of the body with clasped hands close to the chest.
- 30: Horizontally outstretched right arm is in front of the body while left arm is on the left.
- 31: Horizontally outstretched left arm is in front of the body while right arm is on the right.
- 32: Horizontally outstretched arms are on the side of body.
- 33: Upper arms are at shoulder height on the side of the body while forearms are at 90 degrees to upper arms in the front of the body.

Table A.5: Semantic poses based on whole body used in WorkoutUOW-18 dataset.

Exercises	Semantic poses id
Standing clamshells	1, 5, 6, 7, 1
Balance	1, 8, 9, 10, 1
Leg cycles	1, 5, 11, 12, 13, 14, 1
Toe touch kick	1, 15, 16, 1
High knee	17, 18, 17, 18
Prisoner squat	1, 3, 19, 1
Left lunge with right kick	1, 20, 21, 22, 1
Right lunge with knee up	1, 20, 23, 24, 1
Side to side lunge with bar	1, 25, 26, 27, 1
Squat with left kick	1, 28, 29, 1
90 raise	1, 30, 31, 1
Reverse curl and side press	1, 25, 32, 1
Standing L raise	1, 33, 4, 1
Sitting L raise	1, 2, 34, 35, 1
Bent over row	1, 36, 37, 1
Bent over lateral raise	1, 36, 38, 1
Triceps extension	1, 39, 3, 1
Side to side bend	1, 39, 40, 41, 1

- 34: Thighs are at almost 90 angle to the shins. Upper arms are at shoulder height on the side of the body while forearms are at 90 degrees to upper arms in the front of the body.
- 35: Thighs at almost 90 angle to the shins. Upper arms are at shoulder height on the side of the body while forearms are at 90 degrees to upper arms on the side of the body.
- 36: Trunk is at almost 45 degrees to floor while outstretched arms are in the front of the body.
- 37: Trunk is at almost 45 degrees to floor while outstretched arms are on the side of the body.
- 38: Trunk is at almost 45 degrees to floor. Upper arms are at shoulder height on the side of the body while forearms are at 90 degrees to upper arms in the front of the body.
- 39: Outstretched arms are overhead with clasped hands.
- 40: Trunk is bent obliquely to the left. Stretched arms are over the head.
- 41: Trunk is bent obliquely to the right. Stretched arms are over the head.

A.3.3 Semantic poses based on body parts

Semantic poses based on body parts and their temporal intervals are show in Table A.6 and their linguistic descriptions are described as follows.

to_1: Keep still.

- to_2: Trunk is at almost 45 degrees to floor.
- to_3: Trunk is bent obliquely to the left side.
- to_4: Trunk is bent obliquely to the right side.
- la_1: Beside the left leg.
- la_2: Place on the waist.
- la_3: Horizontally outstretched left arm is in front of the body.
- la_4: Outstretched left arm is above the shoulder.
- la_5: On the head.
- la_6: Left elbow is at shoulder level beside the head.
- la_7: Raise left hand sideways and put it at should height.
- la_8: Left hand is in front of the chest.
- la_9: Horizontally outstretched left arm is on the left side of the body.
- la_10: Upper left arm is at shoulder height on the side of the body while forearm is at 90 degrees to upper left arm in the front of the body.
- la_11: Outstretched left arm is above the shoulder and bend towards the left.
- la_12: Outstretched left arm is above the shoulder and bend towards the right.
- ra_1: Beside the right leg.
- ra_2: Place on the waist.
- ra_3: Horizontally outstretched right arm is in front of the body.
- ra_4: Outstretched right arm is above the shoulder.
- ra_5: On the head.
- ra_6: Right elbow is at shoulder level beside the head.
- ra_7: Raise right hand sideways and put it at should height.
- ra_8: Right hand is in front of the chest.
- ra_9: Horizontally outstretched right arm is on the right side of the body.
- ra_10: Upper right arm is at shoulder height on the side of the body while forearm is at 90 degrees to upper right arm in the front of the body.
- ra_11: Outstretched right arm is above the shoulder and bend towards the left.
- ra_12: Outstretched right arm is above the shoulder and bend towards the right.
- lg_1: Keep still.
- lg_2: Forward raised left knee is with thigh at almost 90 degrees to the shin.
- lg_3: Left foot is one step towards the left.
- lg_4: Outstretched left leg is on the left of the body with the foot on the floor and the leg is almost parallel to the floor.
- lg_5: Left thigh is at almost 90 degrees to the corresponding shin.
- lg_6: Side raised left knee is with thigh at almost 90 degrees to the shin.
- lg_7: Raised and outstretched left leg is in front of the body.
- lg_8: Raised and outstretched left leg is on the left of the body.
- rg_1: Keep still.
- rg_2: Forward raised right knee is with thigh at almost 90 degrees to the shin.
- rg_3: Right foot is one step towards the right.

rg_4: Outstretched right leg is on the right of the body with the foot on the floor and the leg is almost parallel to the floor.

rg_5: Right thigh is at almost 90 degrees to the corresponding shin.

rg_6: Raised and outstretched right leg is in front of the body.

rg_7: Raised and outstretched right leg is on the right of the body.

Table A.6: Semantic poses based on body parts used in WorkoutUOW-18 dataset.

Exercises	Semantic poses id	Temporal interval
Standing clamshells	to_1	[1,6]
	la_1,la_2,la_1	[1,2],[2,5],[5,6]
	ra_1,ra_2,ra_1	[1,2],[2,5],[5,6]
	lg_1,lg_2,lg_6,lg_1	[1,3],[3,4],[4,5],[5,6]
	rg_1	[1,6]
Balance	to_1	[1,6]
	la_1,la_8,la_4,la_1	[1,3],[3,4],[4,5],[5,6]
	ra_1,ra_8,ra_4,ra_1	[1,3],[3,4],[4,5],[5,6]
	lg_1,lg_6,lg_1	[1,2],[2,5],[5,6]
	rg_1	[1,6]
Leg cycles	to_1	[1,7]
	la_1,la_2,la_1	[1,2],[2,6],[6,7]
	ra_1,ra_2,ra_1	[1,2],[2,6],[6,7]
	lg_1,lg_7,lg_8,lg_1	[1,2],[2,3],[3,4],[4,7]
	rg_1,rg_6,rg_7,rg_1	[1,4],[4,5],[5,6],[6,7]
Toe touch kick	to_1	[1,5]
	la_1,la_3,la_1	[1,3],[3,4],[4,5]
	ra_1,ra_3,ra_1	[1,2],[2,3],[3,5]
	lg_1,lg_7,lg_1	[1,2],[2,3],[3,5]
	rg_1,rg_6,rg_1	[1,3],[3,4],[4,5]
High knee	to_1	[1,5]
	la_1	[1,5]
	ra_1	[1,5]
	lg_2,lg_1,lg_2,rg_1	[1,2],[2,3],[3,4],[4,5]
	rg_1,rg_2,rg_1,rg_2	[1,2],[2,3],[3,4],[4,5]
Prisoner squat	to_1	[1,5]
	la_1,la_5,la_1	[1,2],[2,4],[4,5]
	ra_1,ra_5,ra_1	[1,2],[2,4],[4,5]
	lg_1,lg_5,lg_1	[1,3],[3,4],[4,5]
	rg_1,rg_5,rg_1	[1,3],[3,4],[4,5]

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Exercises	Semantic poses id	Temporal interval
Left lunge with right kick	to_1,to_2,to_1	[1,3],[3,5],[5,7]
	la_1,la_8,la_1	[1,2],[2,6],[6,7]
	ra_1,ra_8,ra_1	[1,2],[2,6],[6,7]
	lg_1,lg_3,lg_5,lg_1	[1,3],[3,4],[4,5],[5,7]
	rg_1,rg_3,rg_4,rg_7,rg_1	[1,3],[3,4],[4,5],[5,6],[6,7]
Right lunge with knee up	to_1,to_2,to_1	[1,3],[3,5],[5,7]
	la_1,la_8,la_1	[1,2],[2,6],[6,7]
	ra_1,ra_8,ra_1	[1,2],[2,6],[6,7]
	lg_1,lg_3,lg_4,lg_1	[1,3],[3,4],[4,5],[5,7]
	rg_1,rg_3,rg_5,rg_2,rg_1	[1,3],[3,4],[4,5],[5,6],[6,7]
Side to side lunge with bar	to_1,to_2,to_1,to_2,to_1	[1,4],[4,5],[5,6],[6,7],[7,8]
	la_1,la_7,la_1	[1,2],[2,7],[7,8]
	ra_1,ra_7,ra_1	[1,2],[2,7],[7,8]
	lg_1,lg_3,lg_5,lg_3,lg_4,lg_1	[1,3],[3,4],[4,5],[5,6],[6,7],[7,8]
	rg_1,rg_3,rg_4,rg_3,rg_5,rg_1	[1,3],[3,4],[4,5],[5,6],[6,7],[7,8]
Squat with left kick	to_1	[1,6]
	la_1,la_8,la_1	[1,2],[2,5],[5,6]
	ra_1,ra_8,ra_1	[1,2],[2,5],[5,6]
	lg_1,lg_5,lg_8,lg_1	[1,3],[3,4],[4,5],[5,6]
	rg_1,rg_5,rg_1	[1,3],[3,4],[4,6]
90 raise	to_1	[1,6]
	la_1,la_9,la_1,la_3,la_1	[1,2],[2,3],[3,4],[4,5],[5,6]
	ra_1,ra_9,ra_1,ra_3,ra_1	[1,2],[2,3],[3,4],[4,5],[5,6]
	lg_1	[1,6]
	rg_1	[1,6]
Reverse curl & side press	to_1	[1,5]
	la_1,la_7,la_9,la_1	[1,2],[2,3],[3,4],[4,5]
	ra_1,ra_7,ra_9,ra_1	[1,2],[2,3],[3,4],[4,5]
	lg_1	[1,5]
	rg_1	[1,5]
Standing L raise	to_1	[1,5]
	la_1,la_10,la_6,la_1	[1,2],[2,3],[3,4],[4,5]
	ra_1,ra_10,ra_6,ra_1	[1,2],[2,3],[3,4],[4,5]
	lg_1	[1,5]
	rg_1	[1,5]
	to_1	[1,6]

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Sitting L raise

Table A.6 – Continued from previous page

Exercises	Semantic poses id	Temporal interval
	la_1,la_10,la_6,la_1	[1,3],[3,4],[4,5],[5,6]
	ra_1,ra_10,ra_6,ra_1	[1,3],[3,4],[4,5],[5,6]
	lg_1,lg_5,lg_1	[1,2],[2,5],[5,6]
	rg_1,rg_5,rg_1	[1,2],[2,5],[5,6]
Bent over row	to_1,to_2,to_1	[1,2],[2,4],[4,5]
	la_1,la_3,la_10,la_1	[1,2],[2,3],[3,4],[4,5]
	ra_1,ra_3,ra_10,ra_1	[1,2],[2,3],[3,4],[4,5]
	lg_1	[1,5]
	rg_1	[1,5]
Bent over lateral raise	to_1,to_2,to_1	[1,2],[2,4],[4,5]
	la_1,la_3,la_9,la_1	[1,2],[2,3],[3,4],[4,5]
	ra_1,ra_3,ra_9,ra_1	[1,2],[2,3],[3,4],[4,5]
	lg_1	[1,5]
	rg_1	[1,5]
Triceps extension	to_1	[1,5]
	la_1,la_4,la_5,la_1	[1,2],[2,3],[3,4],[4,5]
	ra_1,ra_4,ra_5,ra_1	[1,2],[2,3],[3,4],[4,5]
	lg_1	[1,5]
	rg_1	[1,5]
Side to side bend	to_1,to_3,to_1,to_4,to_1	[1,3],[3,4],[4,5],[5,6],[6,7]
	la_1,la_4,la_11,la_4,la_12,la_1	[1,2],[2,3],[3,4],[4,5],[5,6],[6,7]
	ra_1,ra_4,ra_11,ra_4,ra_12,ra_1	[1,2],[2,3],[3,4],[4,5],[5,6],[6,7]
	lg_1	[1,7]
	rg_1	[1,7]