CS5245 Vision & Graphics for Special Effects

A Day in School

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Content

- Introduction
- Storyline
- Effect Explanation
- Making-of Video
- Output Video

Scene Outline

- 3 scenes

- 1st scene: Actors interacting normally
- 2nd scene : Objects motion immobilised
- 3rd scene : Objects resume motion

Main Effect

Immobilise moving ball & actor moves the suspended ball. Motion resumes with a different reaction.

Techniques

- Compositing
- Keying
- Masking
- Time remapping

Storyline

Storyline

- A late night in the classroom
- Xavier was busying debugging software bugs
- His good friend Gary came into the scene with a smiley ball in his hand
- Gary was jesting at Xavier for being stress up
- Xavier oblivious to Gary’s entree
- Gary sat down and threw the ball at Xavier

Storyline

- Gary intended to hit Xavier’s head with the smiley ball
- His aim was very good and the ball was heading down toward the unknowing Xavier
- The ball was following the intended trajectory
- Suddenly, the ball stops in the mid air

Storyline

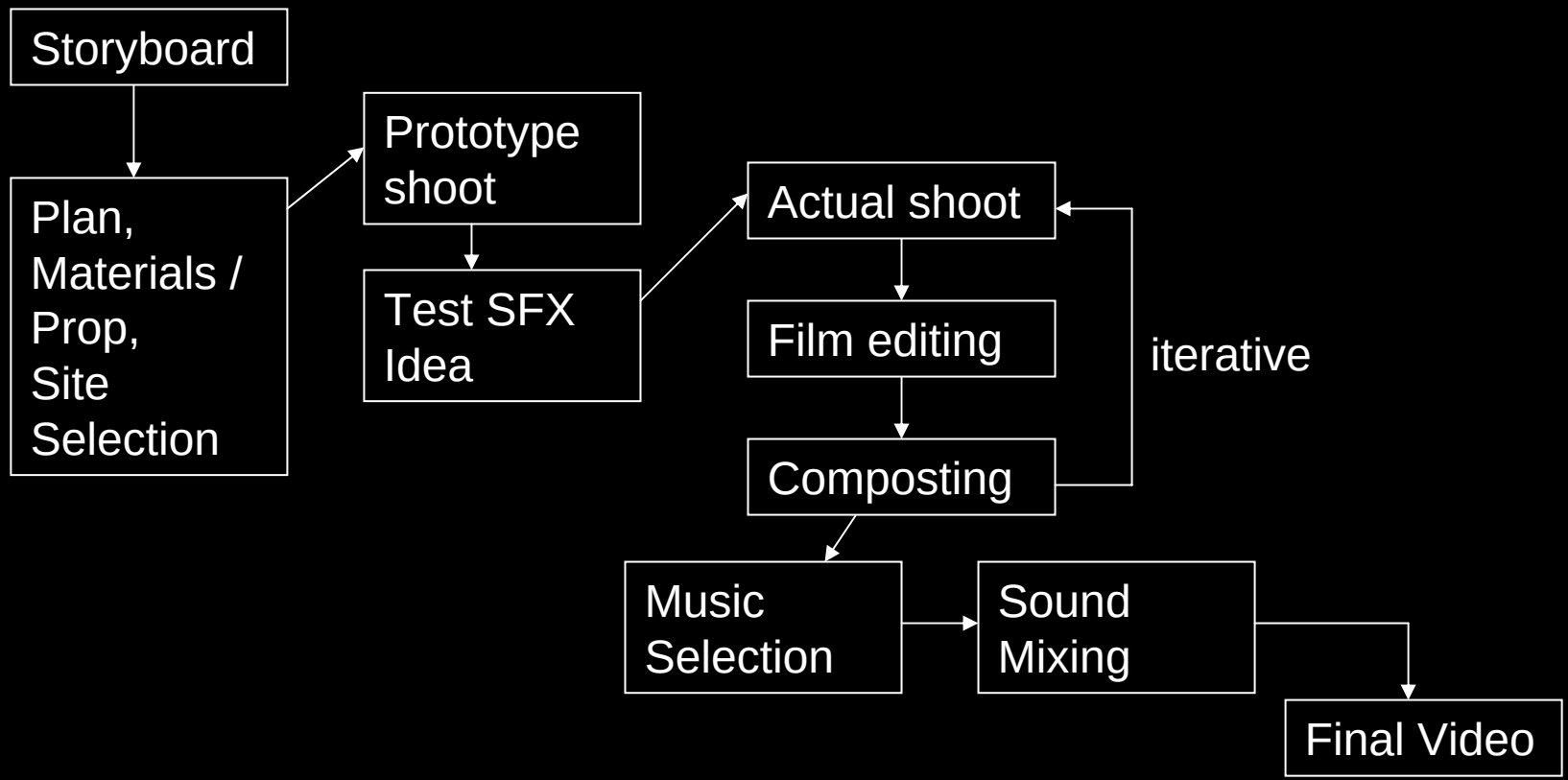
- Apparently Gary wasn’t aware that Xavier had the ability to immoblise objects within 3m radius
- At this instance, a person walked into the scene
- He looked like the split-image of Xavier
- He peruse the situation and looked at the ball that was hanging in the mid air and Gary

Storyline

- Gary was shocked at this sight and realized that he had been immobilised by him too and he could only move his mouth
- He plug the ball from mid air and shifted it towards Gary and place the ball above Gary’s head
- Letting go of the ball, he left the scene with the ball hanging in the mid air
- Suddenly, the motion resume and the ball landed on Gary’s head and taking him completely by surprise

Effect Explanation

Production Process



Planning

- Prop (Sunglasses, Smiley ball)
- Site layout
- Wide shot is used at eye level is used to give headroom space for actors & leave walking space strategically
- Actors enter the scene from right & left
- Walk from left to right across the room

Leave 2 chairs
for the Actors

Remove chairs
at front row

Props placed
strategically

headroom for walking space

Wide shot is used at eye level

Avoid Frontal Angle

- The camera angle is intentionally tilted at an oblique angle to present a sense of depth

Lighting

- Choose an indoor shooting environment rather than an outdoor environment so that lighting will be constant throughout
  - important consideration to do re-shoot

- High-Key lighting is used, room is brightly lit

High-Key lighting

oblique angle presents a sense of depth

Continuous Camera Action

- Take video in one shot sequence
- Ensure camera angle and perspective remain constant throughout the video
- Prevent misalignment error during compositing

Shoot in one sequence - same camera angle and perspective

No misalignment during compositing

Transition

- Hands, body posture & position remains constant during the transition of the frame with & without the ball
- Trim away the actual placement of ball frames
- Smooth transition between frames

Plan Transition Shots

Edit away this frame

Keying

- Observe and take shoots of ball over blue screen (make use of blue wall)
- Motion blur for ball in motion
- Able to see a full single ball only at the maximum height turning point
- Ensure relative size of ball is preserved (stay the same) during compositing

Motion blur
for ball in motion

see a full single
ball at maximum
height

Difference Keying

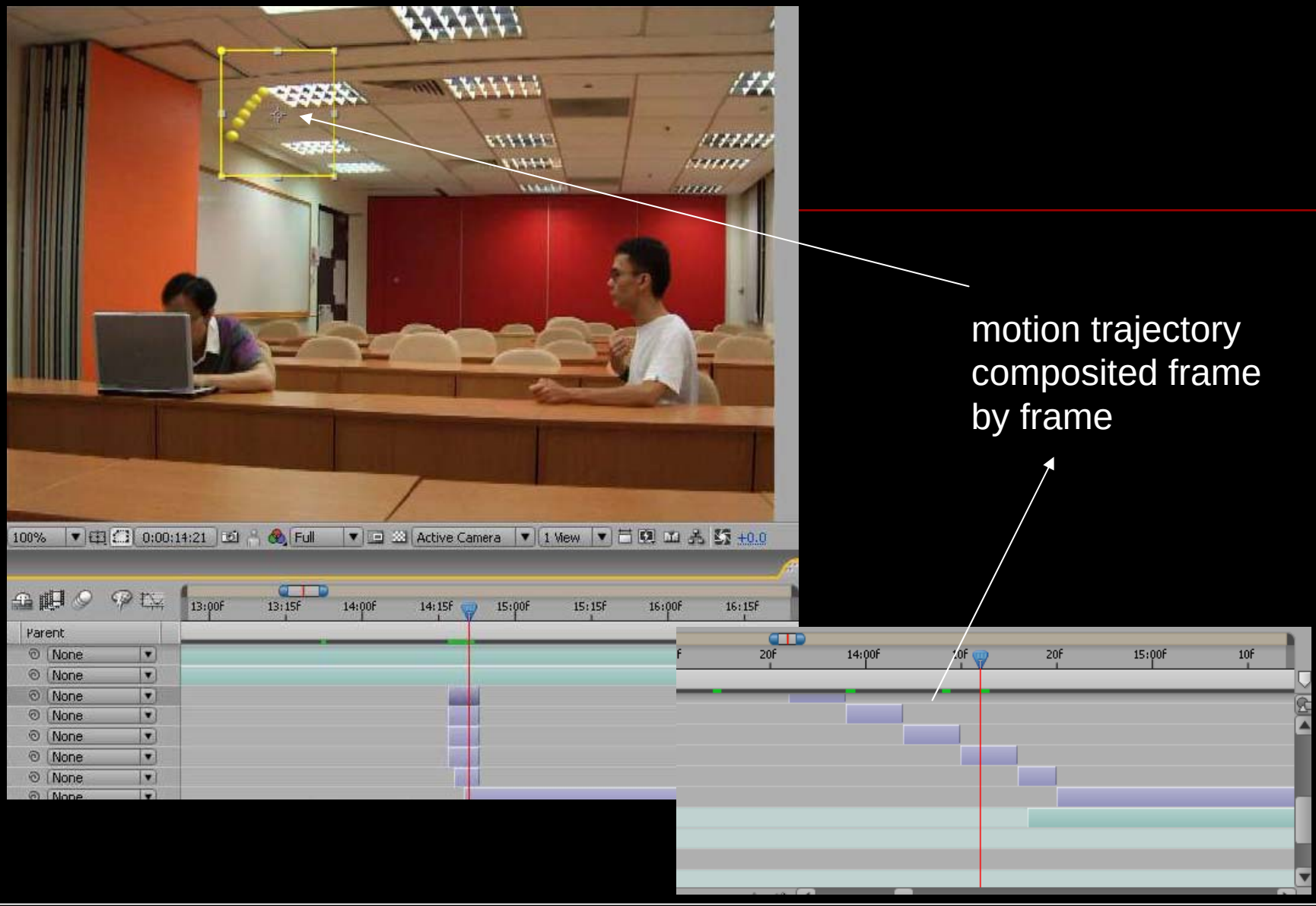
- Chroma keying leaves undesired blue spill
- Difference keying used as blue screen not 100% perfect due to reflection of lights
- Apply *Directional Blur* 17° *length* 3.0

  ~ remove crisp effect for visual realism


Adobe After Effects - Prototype60.aep *
File Edit Composition Layer Effect Animation View Window Help
Workspace: Standard
Project
Effect Controls: ball_small.jpg
DSCF0073 * ball_small.jpg
Color Difference Key Reset About...
Animation Presets: None
Preview
View Final Output
Key Color
Color Matching Accura Faster
Partial A In Black 0
Partial A In White 255
Partial A Gamma 1.0
Partial A Out Black 0
Partial A Out White 255
Partial B In Black 0
Partial B In White 255
Partial B Gamma 1.0
Partial B Out Black 0
Partial B Out White 255
Matte In Black 0
Matte In White 255
Matte Gamma 0.0
Composition: DSCF0073
100% 0:00:13:25 Full Active Camera 1 View +0.0
Info Audio
R :
G :
B :
A : 0
X : -20
Y : 281
[ball_small.jpg]
Duration: 0:00:00:06
In: 0:00:13:28, Out: 0:00:14:03
Time Controls
RAM Preview Options
Frame Rate Skip Resolution
(30) 0 Half
From Current Time Full Screen
fects & Presets Character
Times New Roman
Regular
36 px Auto
100 % 100 %
0 px 0 %
DSCF0073 Render Queue
0:00:13:25 (30.00 fps)
13:00f 10f 20f 14:00f 10f 20f
Layer Name Parent
2 [DSCF0073.AVI] None
3 [ball_small.jpg] None
Masks
Effects
Color Difference Key Reset
Directional Blur Reset
Direction 0x +17.0°
Blur Length 3.0
Toggle Switches / Modes
Paragraph
0 px

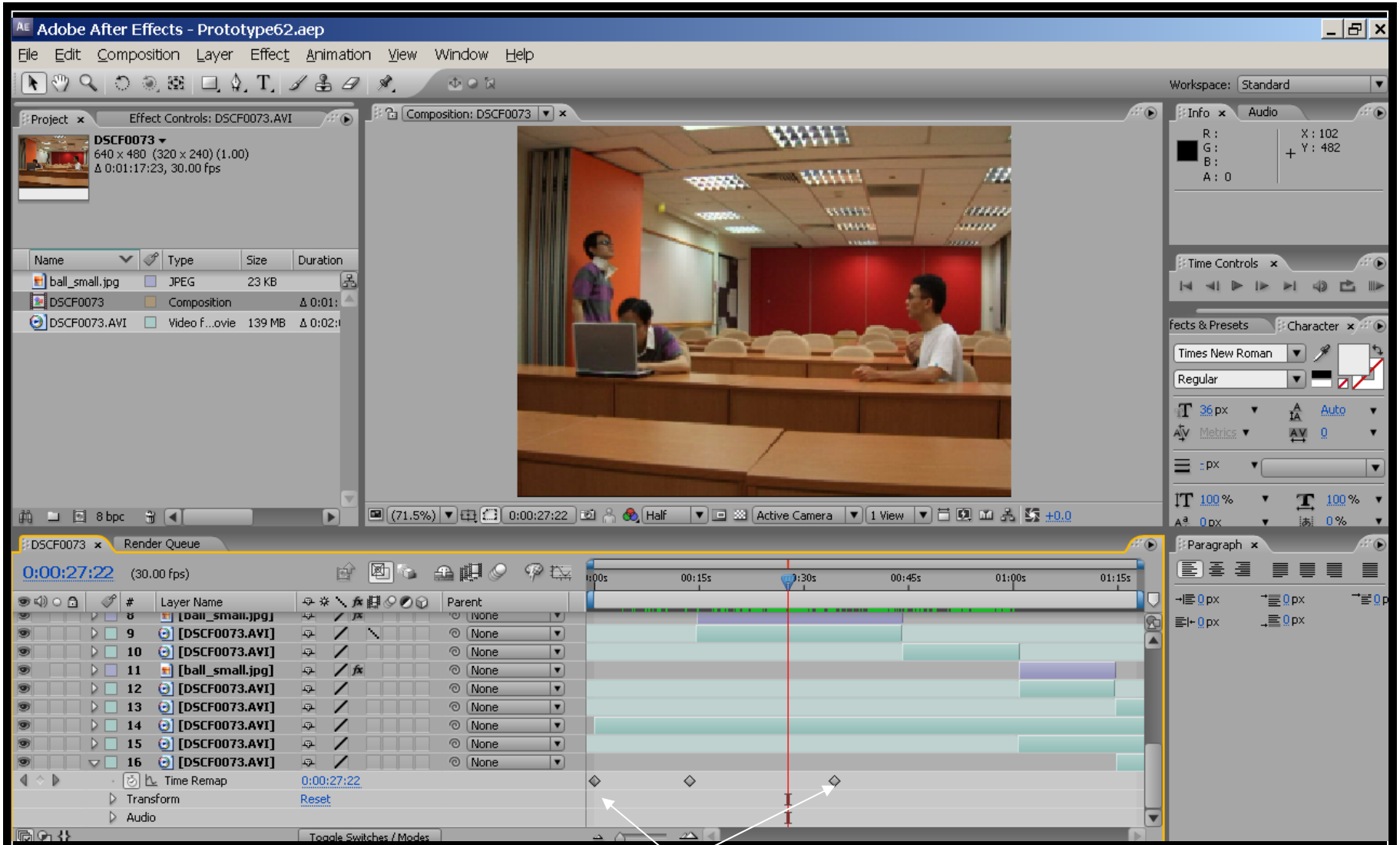
Ball motion & transition to freeze

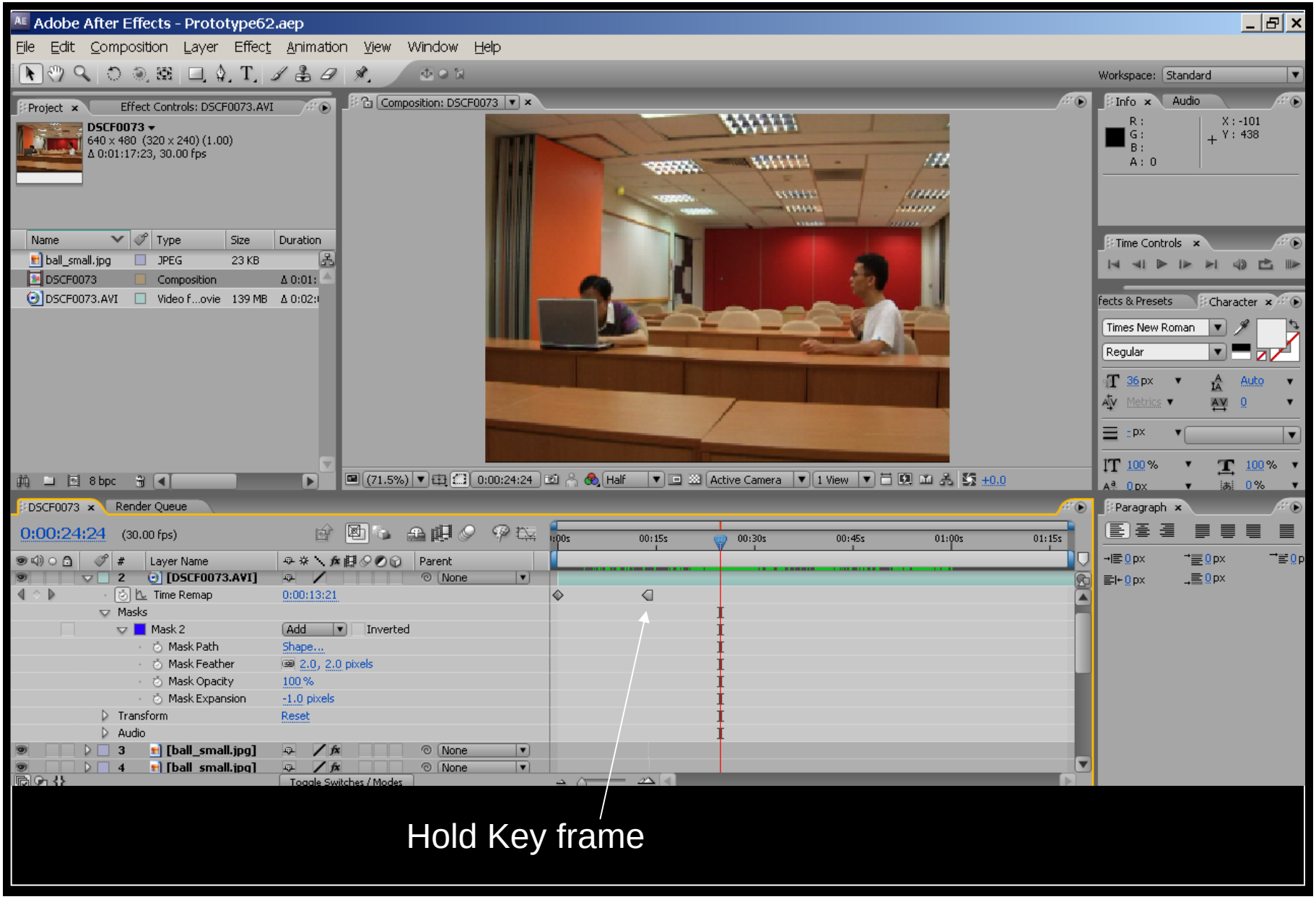
- The motion trajectory is composited frame by frame during the precursor to object immobilisation
- The effect is to portray the transition of the ball moving and slowing down to a complete halt


motion trajectory
composited frame
by frame
100%
0:00:14:21
Full
Active Camera
1 View
+0.0
13:00F
13:15F
14:00F
14:15F
15:00F
15:15F
16:00F
16:15F
Parent
None
None
None
None
None
None
None
None
20F
14:00F
20F
15:00F
10F

Time Remap

- Set Key frame
  - Select the frames to start & end
- Hold Key frame
  - Set / toggle the key frame to hold


Adobe After Effects - Prototype62.aep
File Edit Composition Layer Effect Animation View Window Help
Workspace: Standard
Project
Effect Controls: DSCF0073.AVI
DSCF0073
640 x 480 (320 x 240) (1.00)
Δ 0:01:17:23, 30.00 fps
Name Type Size Duration
ball_small.jpg JPEG 23 KB
DSCF0073 Composition
DSCF0073.AVI Video f...ovie 139 MB
Composition: DSCF0073
Info
Audio
R :
G :
B :
A : 0
X : 102
Y : 482
Time Controls
Character
Times New Roman
Regular
Paragraph
DSCF0073
Render Queue
0:00:27:22
(30.00 fps)
Layer Name
Parent
[DSCF0073.AVI]
[ball_small.jpg]
Time Remap
0:00:27:22
Transform
Reset
Audio
Toggle Switches / Modes
Time Remap
Set Key frame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DSCF0073
640 x 480 (320 x 240) (1.00)
Δ 0:01:17:23, 30.00 fps
Name Type Size Duration
ball_small.jpg JPEG 23 KB
DSCF0073 Composition Δ 0:01:
DSCF0073.AVI Video f...ovie 139 MB Δ 0:02:
8 bpc
Composition: DSCF0073
(71.5%) 0:00:24:24 Half Active Camera 1 View +0.0
Info
Audio
R :
G :
B :
A : 0
X : -101
Y : 438
Time Controls
fects & Presets
Character
Times New Roman
Regular
36 px
Auto
Metrics
0
100 %
100 %
0 %
Paragraph
DSCF0073
Render Queue
0:00:24:24 (30.00 fps)
00:00s 00:15s 00:30s 00:45s 01:00s 01:15s
Layer Name Parent
2 [DSCF0073.AVI] None
Time Remap 0:00:13:21
Masks
Mask 2 Add Inverted
Mask Path Shape...
Mask Feather 2.0, 2.0 pixels
Mask Opacity 100 %
Mask Expansion -1.0 pixels
Transform Reset
Audio
3 [ball_small.jpg] None
4 [ball_small.jpg] None
Toggle Switches / Modes
Hold Key frame

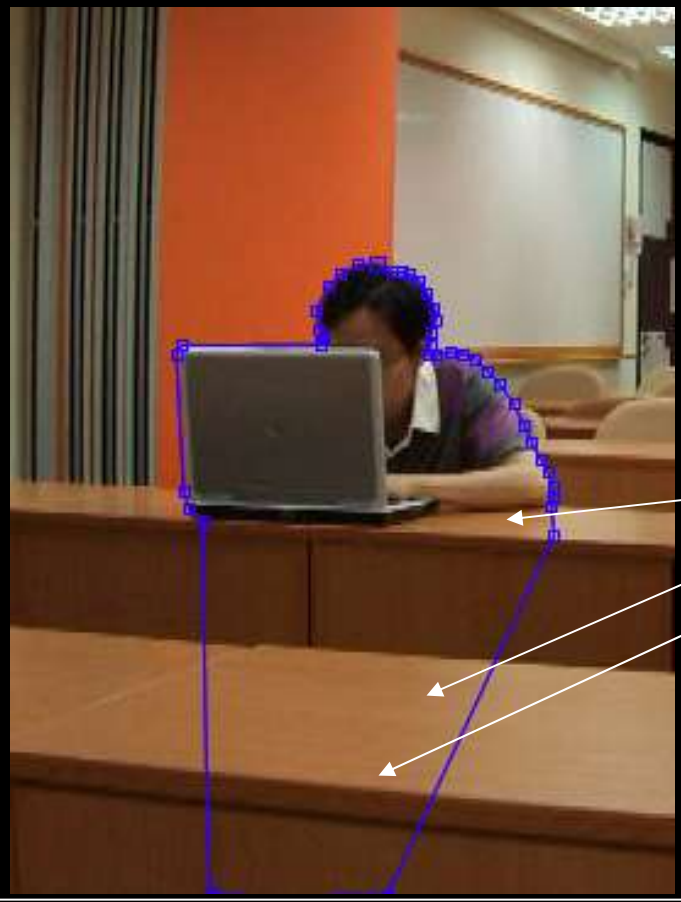
Temporarily set opacity to 50 % for foreground to help compositing

Masking

Draw mask
carefully

When shadow & reflection not masked properly

Masking



Masking

- Enhanced Visual Realism

  by

- Add mask feather to give depth, and remove crisp outline after masking
- Mask feather : 2.0 pixels
- Mask Expansion : -0.971 pixels (edge thinning)

Crisp edge outline
– no depth, not 3D

Mask feather 2.0 pixels–
improves Visual Realism

Considerations

- Maintain the distance of the ball from the camera during compositing
- Use natural blue screen in the tutorial room
- Transition planning
- Consider ball with blur motion
- Re-take the shots 73 times (Lighting)
- Masking/Edge blending for visual realism

End