

# Photography assignment

1

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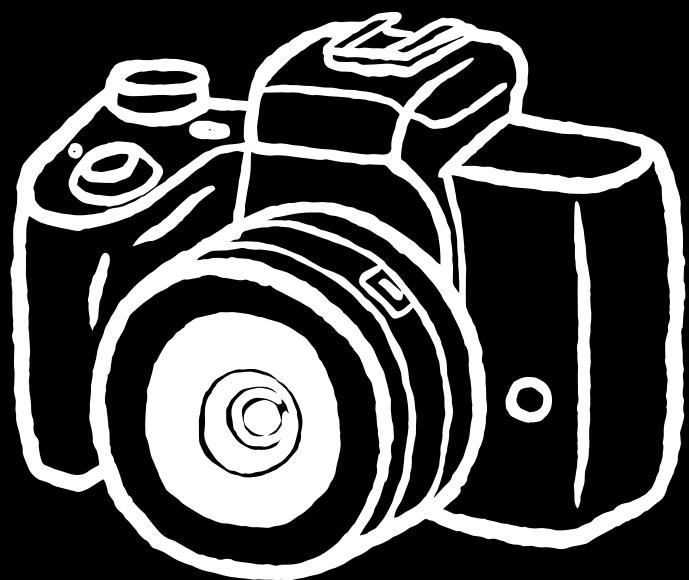
Branch: CSECS



## Introduction

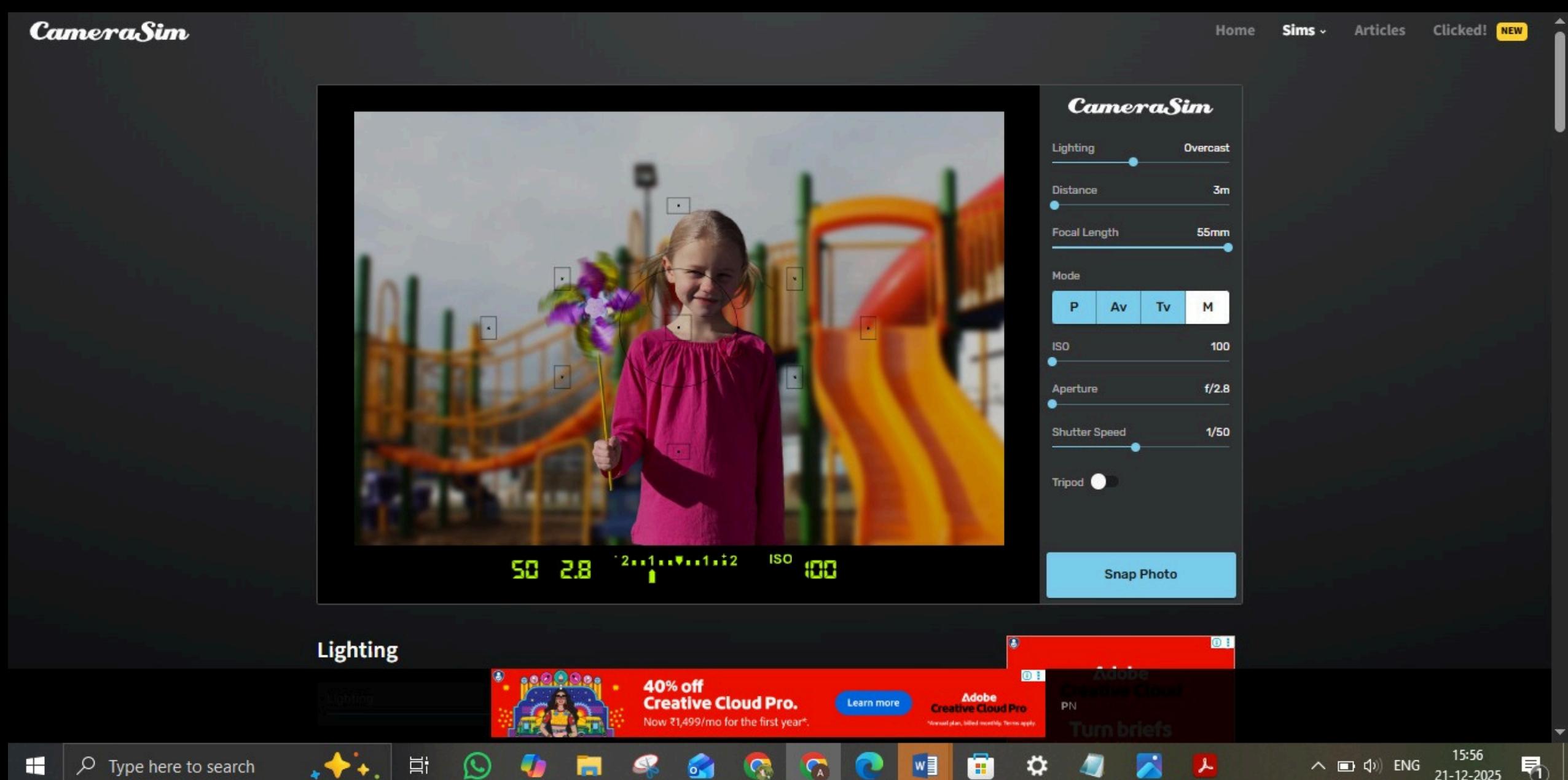
Photography is the art of capturing light to create an image. To get a clear and well-exposed photograph, it is important to understand how camera settings control the amount of light entering the camera. This assignment uses the CameraSim simulation to learn about the three main camera settings known as the exposure triangle: aperture, ISO, and shutter speed.

By changing each setting one at a time, this assignment shows how images become overexposed, underexposed, or perfectly exposed. It also helps in understanding how these settings affect depth of field, motion blur, and image clarity. The purpose of this activity is to build a basic understanding of camera controls and develop confidence in adjusting settings for better photographs in real-life situations.

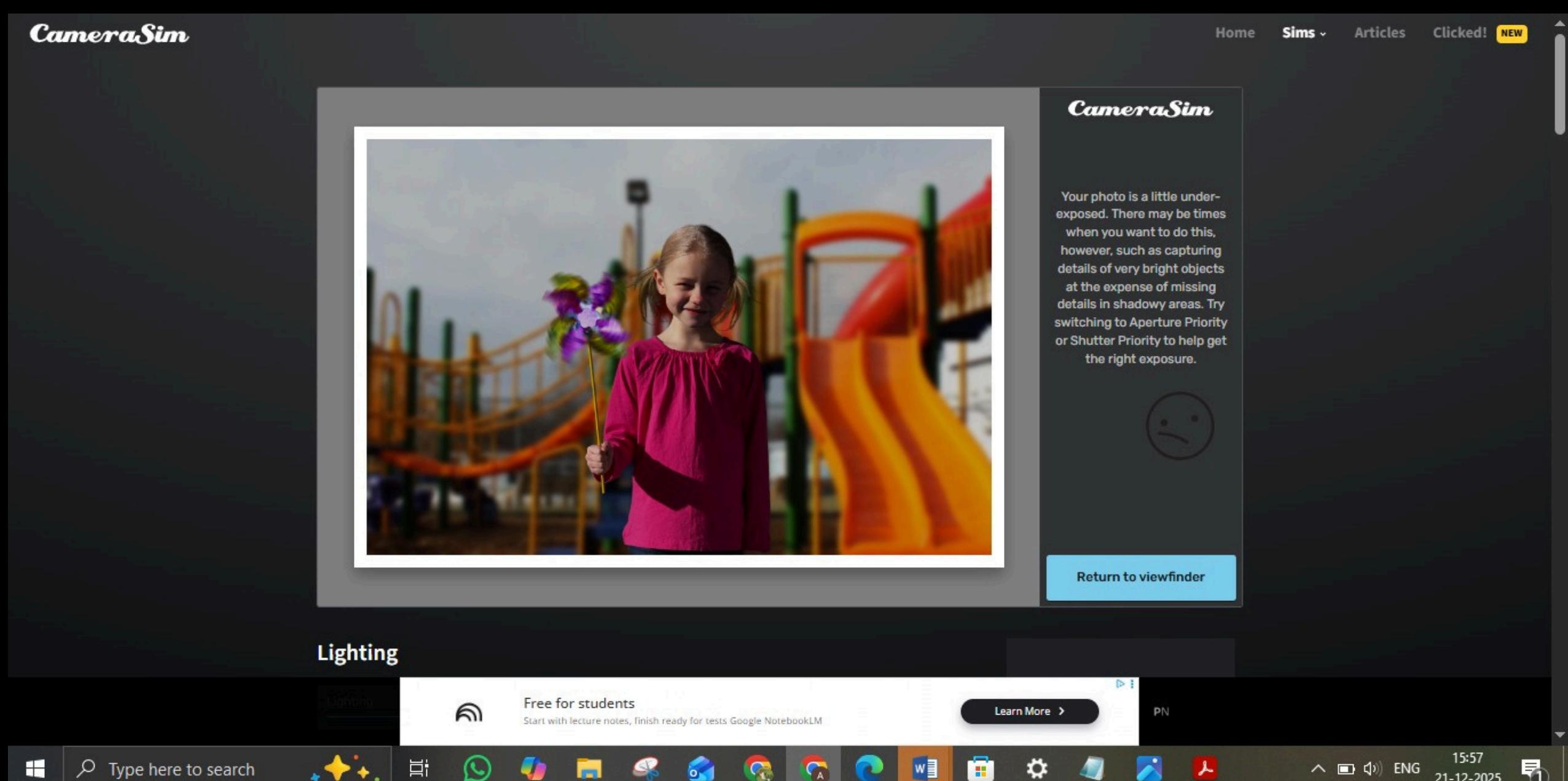


# ISO UNDER EXPOSED

# Before



## After



# ISO

## Under exposed

### Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 100

Aperture: f/2.8

Shutterspeed: 1/50

### Observations:-

1. Image looks dark
2. Details are unclear
3. Shadows are strong
4. Colors appear muted

### How the Exposure Changed

The sensor was not sensitive enough to capture sufficient light, resulting in underexposure.

### Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Unchanged.

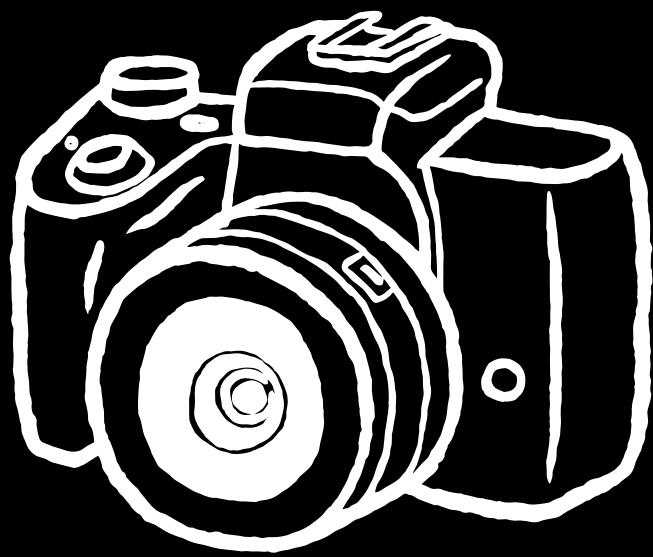
- Motion Blur: None.
- Image Clarity: Poor due to darkness.

### Challenges:-

The challenge was capturing enough brightness without changing aperture or shutter speed.

### My learning:-

I learned that ISO must be increased in low light to properly expose the image.



# ISO OVER EXPOSED

Before

**CameraSim**

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Lighting

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After

**CameraSim**

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Lighting

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# ISO

## Over exposed

### Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 400

Aperture: f/2.8

Shutterspeed: 1/50

### Observations:-

1. Image looks overly bright
2. Highlights are washed out
3. Colors lose richness
4. Slight grain visible

### How the Exposure Changed

Increasing the ISO made the sensor more sensitive to light, causing the image to become overexposed.

### Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Unchanged, as aperture remained constant.

Motion Blur: None.

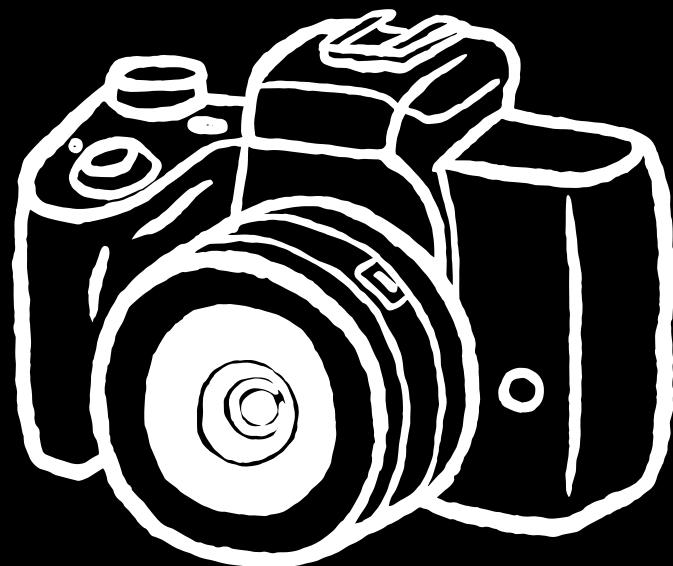
Image Clarity: Slight reduction due to brightness and visible noise.

### Challenges:-

1. Excessive brightness
2. Reduced image quality
3. Loss of highlight details

### My learning:-

1. Higher ISO increases brightness
2. Too high ISO causes overexposure
3. ISO should be low in bright light



# ISO

## CORRECTLY EXPOSED

Before

CameraSim

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Lighting Overcast

Distance 3m

Focal Length 55mm

Mode P Av Tv M

ISO 200

Aperture f/2.8

Shutter Speed 1/50

Tripod

Snap Photo

50 2.8 1/50 ISO 200

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15:58 21-12-2025

After

CameraSim

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Lighting

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16:01 21-12-2025

A fine image. Nice blurry background. If you get closer to your subject, the background will be even blurrier.

Return to viewfinder

# ISO

## Correctly exposed

### Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 200

Aperture: f/2.8

Shutterspeed: 1/50

### Observations:-

1. Proper brightness
2. Details are visible
3. Minimal noise
4. Natural-looking colors

### How the Exposure Changed

The increased ISO provided enough sensitivity to achieve proper exposure without over-brightening.

### Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Balanced.

Motion Blur: None.

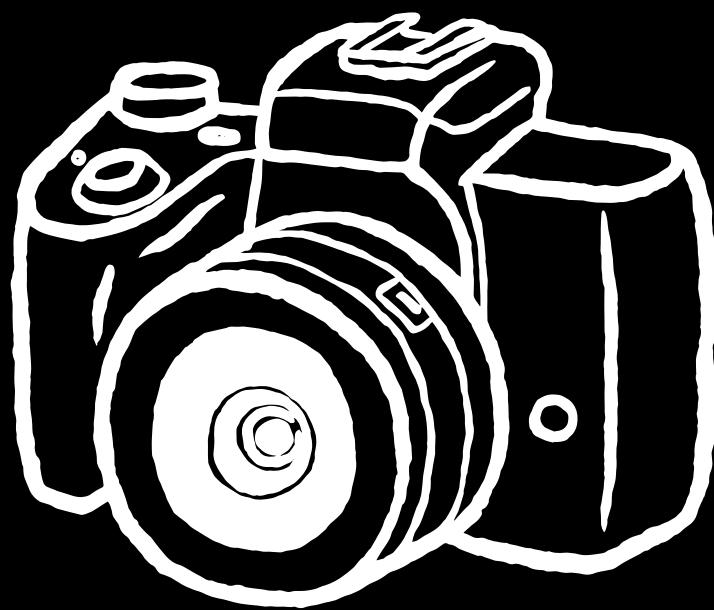
Image Clarity: Good, with minimal noise.

### Challenges:-

1. Balancing ISO and noise
2. Avoiding grain

### My learning:-

1. Moderate ISO gives balanced exposure
2. Correct ISO improves image clarity
3. ISO affects brightness and noise



# Aperture UNDER EXPOSED

Before

CameraSim

Lighting      Overcast

Distance: 3m      Focal Length: 55mm

Mode: P      Av      Tv      M

ISO: 200      Aperture: f/5.6

Shutter Speed: 1/50      Tripod: Off

Snap Photo

Book 7 days in advance and get up to 35% off at any Ascott Star Rewards (ASR) participating hotels and serviced residences worldwide. Book Now.

13:48 15-12-2025

After

CameraSim

Your photo is a little underexposed. There may be times when you want to do this, however, such as capturing details of very bright objects at the expense of missing details in shadowy areas. Try switching to Aperture Priority or Shutter Priority to help get the right exposure.

Return to viewfinder

Lighting

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13:48 15-12-2025

# Aperture

## Under exposed

### Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 200

Aperture: f/5.6

Shutterspeed: 1/50

### Observations:-

1. Image appears very dark
2. Subject details are not visible
3. Shadows dominate the frame
4. Colors look dull

### How the Exposure Changed

The narrow aperture restricted the amount of light entering the camera, leading to underexposure and a darker image.

### Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Large; most of the scene was in focus.

Motion Blur: None, as shutter speed was unchanged.

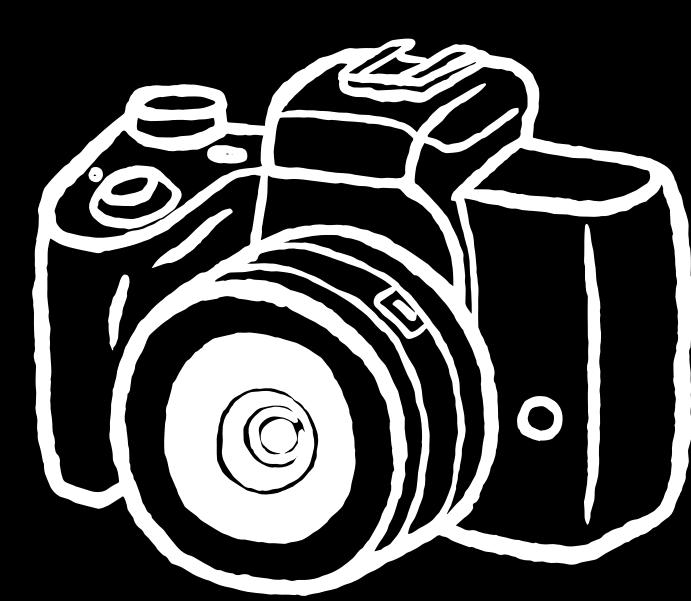
Image Clarity: Poor due to insufficient light.

### Challenges:-

1. Insufficient light reaching the sensor
2. Loss of subject clarity
3. Poor visibility

### My learning:-

1. Narrow aperture allows less light
2. Too small aperture causes underexposure
3. Aperture must be widened in low light



# Aperture OVER EXPOSED

Before

CameraSim

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Lighting: Overcast

Distance: 3m

Focal Length: 55mm

Mode: P Av Tv M

ISO: 200

Aperture: f/2.8

Shutter Speed: 1/50

Tripod: off

Snap Photo

50 2.8 ISO 200

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After

CameraSim

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Lighting

Your photo is slightly overexposed, but there may be times when you want to do this, such as bringing out shadowy details at the expense of losing details in your highlight areas. Try switching to Aperture Priority or Shutter Priority to help get the right exposure.

Return to viewfinder

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13:49 15-12-2025

# Aperture

## Over exposed

### Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 200

Aperture: f/2.8

Shutterspeed: 1/50

### Observations:-

The Image is too bright

Colours are being washed out

Fine details are lost

Highlights are blown out

### How the Exposure Changed

The wide aperture allowed a large amount of light to enter the camera sensor, which resulted in overexposure. The image appeared brighter than required, and highlights were blown out.

### Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Very shallow; background appeared blurred.

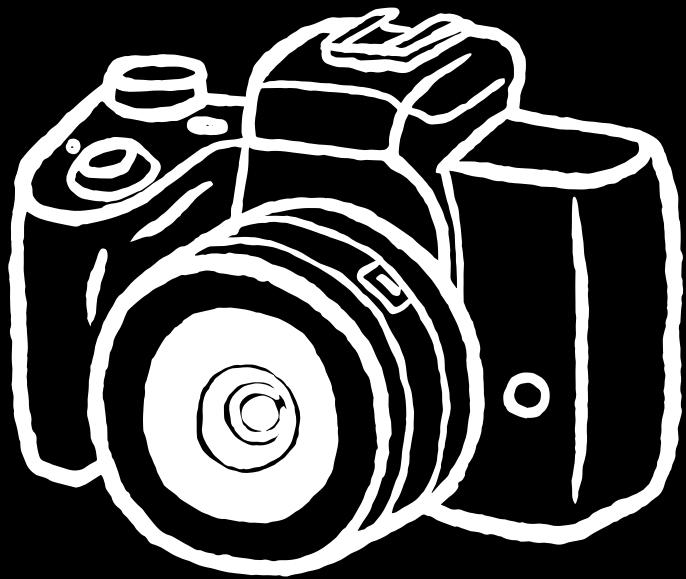
Motion Blur: Minimal, as shutter speed remained moderate. Image Clarity: Reduced due to loss of highlight details.

### Challenges:-

1. Overexposure due to wide aperture
2. Loss of texture and detail
3. Difficulty controlling incoming light

### My learning:-

1. Wide aperture lets in more light
2. Too wide an aperture causes overexposure
3. Aperture must be adjusted according to lighting



# Aperture

## CORRECTLY EXPOSED

Before

CameraSim

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Lighting

Overcast

Distance 3m

Focal Length 55mm

Mode P Av Tv M

ISO 200

Aperture f/4.0

Shutter Speed 1/50

Tripod

Snap Photo

50 4.0 1/50 1/50 ISO 200

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13:50 15-12-2025

After

CameraSim

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Good shot.

Return to viewfinder

Lighting

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13:51 15-12-2025

# Aperture

## Correctly exposed

### Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 200

Aperture: f/4.0

Shutterspeed: 1/50

### Observations:-

1. Image brightness is balanced
2. Details are sharp
3. Colors appear natural
4. Highlights and shadows are well controlled

### How the Exposure Changed

The balanced aperture allowed an appropriate amount of light, resulting in correct exposure.

### Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Balanced; subject sharp with slight background separation.

Motion Blur: None.

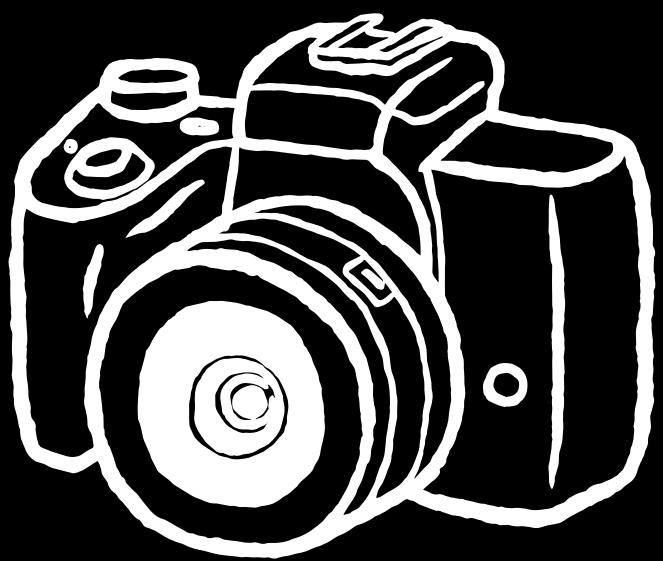
Image Clarity: High, with visible fine details.

### Challenges:-

1. Finding the correct aperture value
2. Maintaining balance between light and depth

### My learning:-

1. Medium aperture gives proper exposure
2. Correct aperture improves image quality
3. Aperture affects brightness and sharpness



# Shutterspeed UNDER EXPOSED

Before

**CameraSim**

Home Sims Articles Clicked! NEW

Lighting Overcast

Distance 3m

Focal Length 55mm

Mode P Av Tv M

ISO 100

Aperture f/2.8

Shutter Speed 1/100

Tripod

Snap Photo

100 2.8 1/100 ISO 100

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13:42 15-12-2025 ENG

After

**CameraSim**

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Lighting

Your photo is a little under-exposed. There may be times when you want to do this, however, such as capturing details of very bright objects at the expense of missing details in shadowy areas. Try switching to Aperture Priority or Shutter Priority to help get the right exposure.

Return to viewfinder

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13:43 15-12-2025 ENG

# Shutterspeed

## Under exposed

### Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 100

Aperture: f/2.8

Shutterspeed: 1/100

### Observations:-

1. Image looks dark
2. Subject appears sharp
3. Lack of brightness

### How the Exposure Changed

The fast shutter limited light intake, resulting in underexposure.

### Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Unchanged.

Motion Blur: None; motion was frozen.

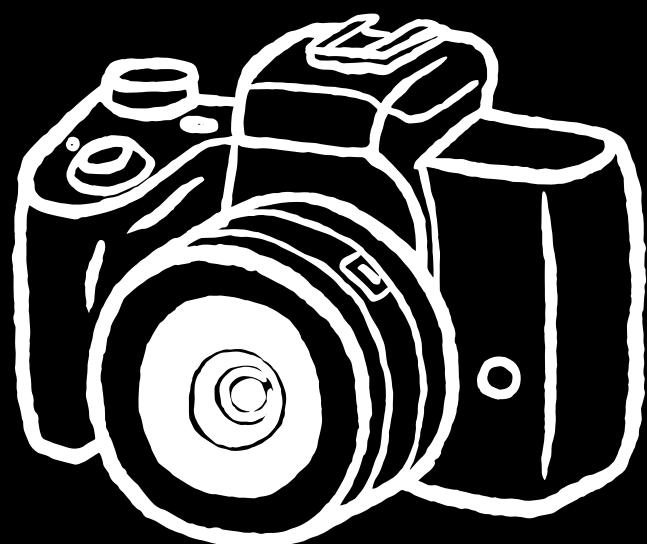
Image Clarity: Sharp but dark.

### Challenges:-

1. Very little light enters
2. Underexposure

### My learning:-

1. Fast shutter reduces light intake
2. Too fast shutter causes underexposure
3. Shutter speed should be slower in low light



# Shutterspeed

## OVER EXPOSED

Before

**CameraSim**

The screenshot shows a girl in a pink shirt standing in front of a playground. The camera settings are displayed on the right: Lighting (Overcast), Distance (3m), Focal Length (55mm), Mode (P), ISO (100), Aperture (f/2.8), Shutter Speed (1/25), and Tripod (off). At the bottom, the camera controls show 25, 2.8, 1/25, and ISO 100. A blue button labeled "Snap Photo" is visible.

**Lighting**

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After

**CameraSim**

The screenshot shows the same girl at the playground, but the camera settings have been adjusted: Shutter Speed is now set to 1/125. A message box on the right says: "Uh-oh. We've got a couple issues here. Try switching to Aperture Priority or Shutter Priority mode to help get the right settings. Don't forget to check the camera's light meter before snapping the photo." Below the message is a sad face emoji. A blue button labeled "Return to viewfinder" is at the bottom.

**Lighting**

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13:44 15-12-2025

# Shutterspeed

## Over exposed

### Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 100

Aperture: f/2.8

Shutterspeed: 1/25

### Observations:-

1. Image appears too bright
2. Motion blur may be present
3. Highlights are blown

## How the Exposure Changed

The slow shutter allowed light to hit the sensor for a longer time, causing overexposure.

## Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Balanced.

Motion Blur: None.

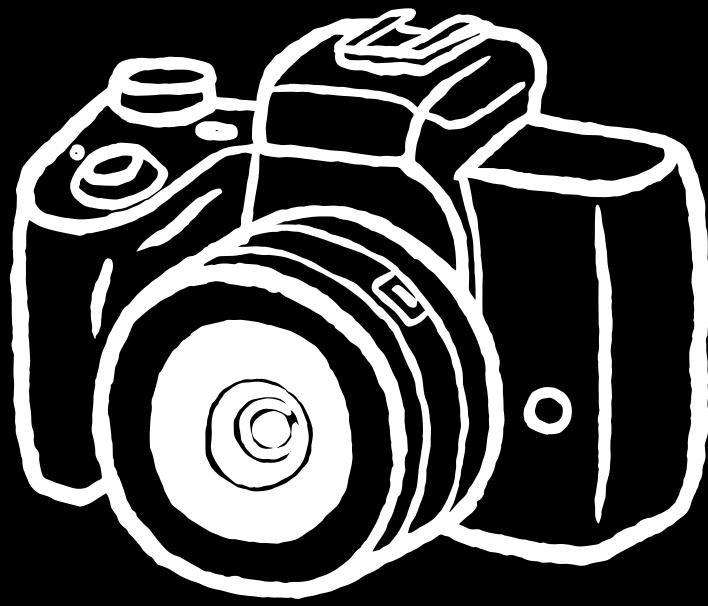
Image Clarity: Good, with minimal noise.

### Challenges:-

1. Excess light entering the camera
2. Loss of sharpness

### My learning:-

1. Slow shutter allows more light
2. Too slow shutter causes overexposure
3. Shutter speed must be increased in bright light



# Shutterspeed

## CORRECTLY EXPOSED

Before

The screenshot shows a girl in a pink shirt holding a flower at a playground. The camera settings are displayed on the right: Lighting (Overcast), Distance (3m), Focal Length (55mm), Mode (P), ISO (100), Aperture (f/2.8), Shutter Speed (1/50), and Tripod (off). At the bottom, the camera controls show: Shutter speed 50, Aperture 2.8, ISO 100, and a histogram indicating underexposure.

After

The screenshot shows the same girl at the playground, but the camera settings have been adjusted to achieve a correct exposure. The shutter speed is now set to 1/200, resulting in a sharp image with a blurred background. A message on the right says: "That's a keeper. Nice blurry background. If you get closer to your subject, the background will be even blurrier." Below the image is a blue button labeled "Return to viewfinder".

# Shutterspeed

Correctly exposed

## Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 100

Aperture: f/2.8

Shutterspeed: 1/50

## Observations:-

1. Proper exposure

2. Sharp image

3. Balanced lighting

## How the Exposure Changed

This shutter speed allowed sufficient light while maintaining sharpness, producing proper exposure.

## Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Balanced.

Motion Blur: None.

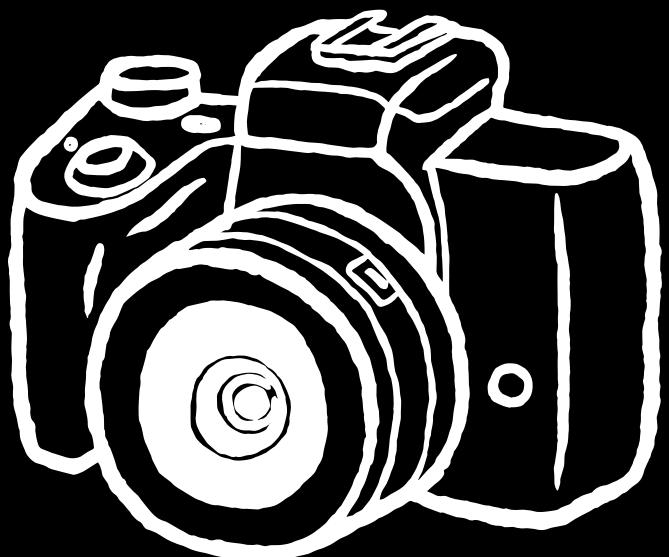
Image Clarity: High.

## Challenges:-

1. Maintaining sharpness and brightness

## My learning:-

1. Medium shutter speed balances light
2. Correct shutter freezes motion
3. Shutter speed controls exposure and motion



# Final Balanced exposure

Before

**CameraSim**

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Lighting Overcast

Distance 3m

Focal Length 55mm

Mode P Av Tv M

ISO 200

Aperture f/3.5

Shutter Speed 1/60

Tripod

Snap Photo

13:59 15-12-2025

After

**CameraSim**

Nice photo.

Return to viewfinder

Lighting

13:59 15-12-2025

# Final Balanced Exposure

## Settings:-

Lighting: Overcast

Distance: 3m

Focal Length: 55m

Mode: M

ISO: 200

Aperture: f/3.5

Shutterspeed: 1/60

## Observations:-

1. Image is well exposed
2. Details are sharp
3. Natural colors
4. Balanced highlights and shadows

## How the Exposure Changed

All three exposure parameters were balanced, resulting in an accurately exposed image.

## Effects on Depth of Field, Motion Blur, and Image Clarity

Depth of Field: Optimal.

Motion Blur: None.

Image Clarity: Excellent.

## Challenges:-

Finding correct settings for all three settings manually.

## My learning:-

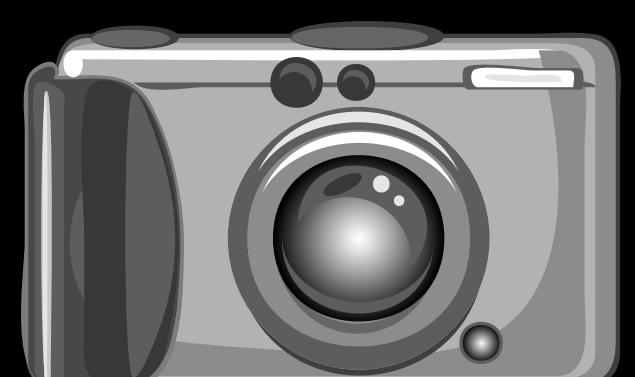
1. Exposure depends on aperture, ISO, and shutter speed
2. Proper balance gives best results
3. Manual control improves understanding of photography



# Conclusion

This CameraSim simulation provided a practical understanding of the exposure triangle aperture, ISO, and shutter speed and their interdependence. By analyzing overexposed, underexposed, and correctly exposed images, I was able to clearly observe how each parameter influences the amount of light reaching the sensor, as well as its effect on depth of field, motion blur, noise, and overall image clarity.

The exercise highlighted the challenges of balancing exposure while preserving detail and sharpness, especially under varying lighting conditions. Overall, this assignment strengthened my technical knowledge of camera controls and improved my ability to make informed exposure adjustments, which is essential for achieving consistent and high quality photographs in real world scenarios.



*Thank*

*you~*