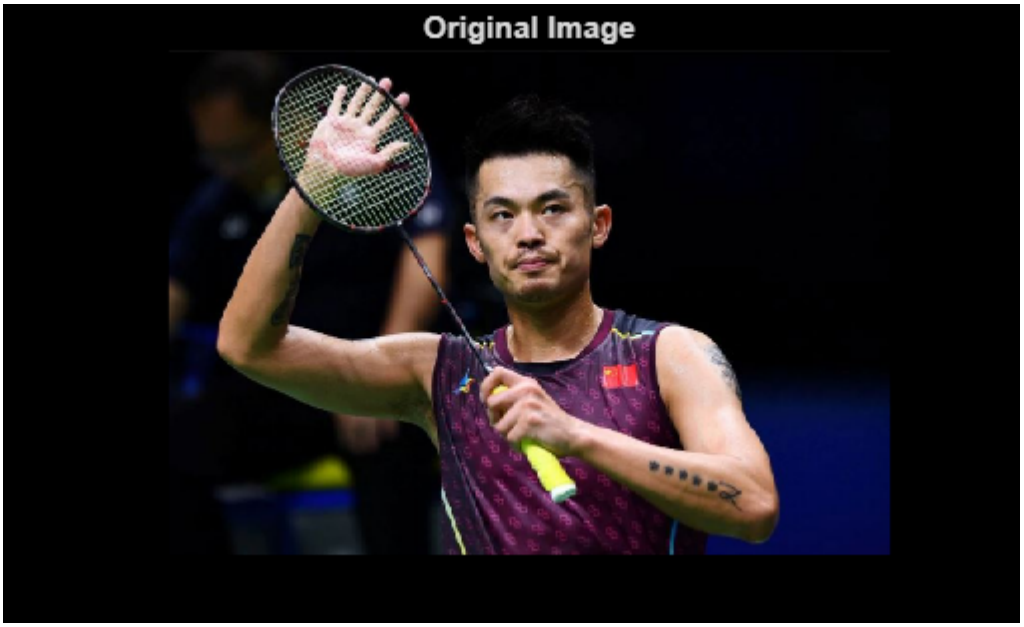
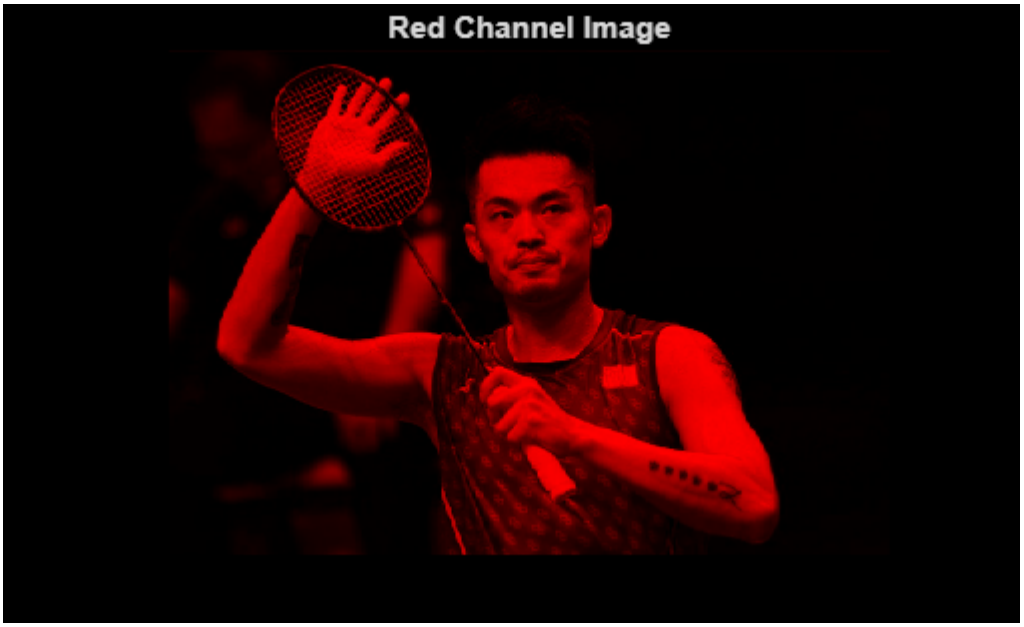
```
% Fundamental Operations for Image Processing in MATLAB
% Date: 14/01/2026

clc;
clear;
close all;

% Creating an 8x8 random matrix
B = uint8(randi([0 255], 8, 8));
disp('Random 8x8 Matrix:');
disp(B);

% Read input image
I = imread("Lin-Dan.jpg");
figure;
imshow(I);
title('Original Image');

% Convert RGB image to grayscale
Ig = rgb2gray(I);
figure;
imshow(Ig);
title('Grayscale Image');

% Extract Red Channel only
I_red = I;
I_red(:,:,2) = 0;   % Remove Green channel
I_red(:,:,3) = 0;   % Remove Blue channel
figure;
imshow(I_red);
title('Red Channel Image');

% Convert grayscale image to uint8 explicitly
Ig_uint8 = uint8(Ig);

% Binary image using thresholding with uint8
threshold = uint8(130);
Img = Ig_uint8 > threshold;

figure;
imshow(Img);
title('Binary Image using uint8 Thresholding');
```

```
Random 8x8 Matrix:
   154    82    87    48   165   155   215    81
    99   200   155    73   173   115   213    30
   234   120    49    23   162   117    65   240
     0     9   189   147   241   169   157   165
   118    45    62   174    53   197   149   122
   108   184   234   139   181    89   138   163
   117   121    68   108    60   169   222   139
   197    39   195   164    30   106    67   165
```


Original Image


Grayscale Image



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