Eng samer task from 42018085 hamza Mustafa nafady

Q1 : computation character code in RLE

Solution

using System;

class GFG

{

public class RunLength\_Encoding

{

public static void printRLE(String str)

{

int n = str.Length;

for (int i = 0; i < n; i++)

{

// Count occurrences of current character

int count = 1;

while (i < n - 1 && str[i] == str[i + 1])

{

count++;

i++;

}

// Print character and its count

Console.Write(str[i]);

Console.Write(count);

}

}

public static void Main(String[] args)

{

String str = "wwwwaaadexxxxxxywww";

printRLE(str);

}

}

}

Q2: index image code

Solution

public static void AdjustImage(ImageAttributes imageAttributes, Image image)

{

Rectangle rect = new Rectangle(0, 0, image.Width, image.Height);

Graphics g = Graphics.FromImage(image);

g.InterpolationMode = InterpolationMode.HighQualityBicubic;

g.DrawImage(image, rect, 0, 0, image.Width, image.Height, GraphicsUnit.Pixel, imageAttributes);

g.Dispose();

}

Q3: huffman decoding and encoding

Solution

Encode function

public static void GenerateCode(Node parentNode, string code)

{

if (parentNode != null)

{

GenerateCode(parentNode.leftChild, code + "0");

if (parentNode.leftChild == null && parentNode.rightChild == null)

Console.WriteLine(parentNode.data + "{" + code + "}");

System.IO.File.AppendAllText("E:\\test.txt", code);

GenerateCode(parentNode.rightChild, code + "1");

}

}

Solution for decode

public static void DecodeData(Node parentNode, Node currentNode, int pointer, string input)

{

if (input.Length == pointer)

{

if (currentNode.leftChild == null && currentNode.rightChild == null)

{

Console.WriteLine(currentNode.data);

}

return;

}

else

{

if (currentNode.leftChild == null && currentNode.rightChild == null)

{

Console.WriteLine(currentNode.data);

DecodeData(parentNode, parentNode, pointer, input);

}

else

{

if (input.Substring(pointer, 1) == "0")

{

DecodeData(parentNode, currentNode.leftChild, ++pointer, input);

}

else

{

DecodeData(parentNode, currentNode.rightChild, ++pointer, input);

}

}

}

}