



Bahria University

Discovering Knowledge

BES-103

CRITICAL THINKING

Department Of Computer Science

Submitted to: Miss Komal Fatima

Submitted by: Esha Ashfaq

Enrollment: 02-235232-002

Program: BS (IT)

Semester: Spring-2025



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ASSIGNMENT 01

Marks: 05

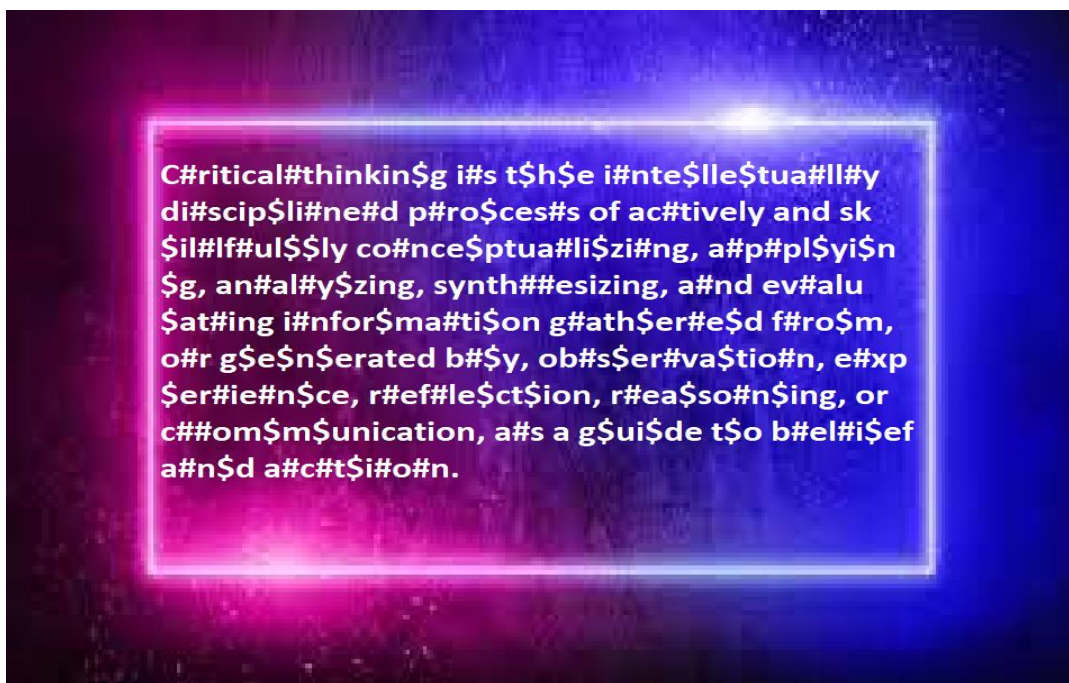
Question No.1: [CLO1, PLO1, C2]

As a critical thinker you need to **infer** an Image containing jumbled Text. You need to show an approach to decrypt the Text. Your solution must cover the following:

- Extraction of Text from Image.
- The Final Text must be clearly written/readable.

The steps involved in your approach must be detailed with proper OUTPUT and screenshot of actual code with your name and enrollment number printed on output screen as well.

P.S. There can be more than one solution. Use programming language of your own choice.





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Code:

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <title>Image Text Extractor</title>
7   <script src="https://cdnjs.cloudflare.com/ajax/libs/tesseract.js/4.0.2/tesseract.min.js"></script>
8   <style>
9     body {
10       font-family: Arial, sans-serif;
11
12       background-color: #191919;
13       background-size: cover;
14       text-align: center;
15       color: white;
16     }
17     .container {
18       background: #000000;
19       padding: 20px;
20       border-radius: 10px;
21       width: 60%;
22       margin: auto;
23       margin-top: 50px;
24       box-shadow: 0px 0px 10px #333333;
25     }
26     h1 {
27       font-size: 24px;
28     }
29     input, button {
30       margin: 10px;
```

```
       background: #333333;
       color: white;
       border: none;
       cursor: pointer;
       border-radius: 5px;
     }
     button:hover {
       background: #444444;
     }
     .output {
       margin-top: 20px;
       text-align: left;
       background: #000000;
       color: black;
       padding: 15px;
       border-radius: 5px;
     }
   </style>
</head>
<body>
  <div class="container">
    <h1>Image Text Extractor & Formatter</h1>
    <input type="file" id="imageInput" accept="image/*">
    <button onclick="extractText()">Extract & Format</button>
    <div class="output">
      <h2>Original Extracted Text:</h2>
      <p id="unarrangedText"></p>
      <h2>Formatted Text:</h2>
      <p id="correctedText"></p>
```



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```
function extractText() {
  let imageInput = document.getElementById('imageInput').files[0];
  if (!imageInput) {
    alert("Please upload an image first!");
    return;
  }

  Tesseract.recognize(
    imageInput,
    'eng',
    { logger: m => console.log(m) }
  ).then(({ data: { text } }) => {
    let extractedText = text.replace(/^[^a-zA-Z\s]/g, ""); // Remove symbols
    let words = extractedText.split(/\s+/).map(word => correctSpelling(word.toLowerCase()));

    let formattedText = words
      .map((word, index) => index === 0 ? capitalize(word) : word)
      .join(" ");

    let userInfo = `Name: Esha Ashfaq\nRoll No: 02-235232-002\nSubject: Critical Thinking\nClass: BS IT 4 A`;

    document.getElementById('unarrangedText').innerText = extractedText;
    document.getElementById('correctedText').innerText = userInfo + formattedText;
  });
}

function correctSpelling(word) {
  const dictionary = {
    "tshe": "the",
    // ... other corrections ...
  };
}
```

```
  "intelleutaiy": "intellectual",
  "disciplineid": "disciplined",
  "proscs": "process",
  "sillfulsy": "skillfully",
  "coincesptualtsziing": "conceptualizing",
  "appliesing": "applying",
  "analyzsing": "analyzing",
  "syntheszing": "synthesizing",
  "evalu": "evaluate",
  "sating": "stating",
  "infor smatison": "information",
  "gathseresd": "gathered",
  "frosm": "from",
  "otr": "or",
  "gsesnserated": "generated",
  "bsy": "by",
  "observastiion": "observation",
  "exp sertieinsce": "experience",
  "rifeitlesctsiion": "reflection",
  "rifeasonisng": "reasoning",
  "chomsmsunication": "communication",
  "gsuisde": "guide",
  "tso": "to",
  "belisef": "belief",
  "aticitsiton": "action"
};
return dictionary[word] || word;
}
```

```
function capitalize(word) {
  return word.charAt(0).toUpperCase() + word.slice(1);
}
</script>

</body>
</html>
```



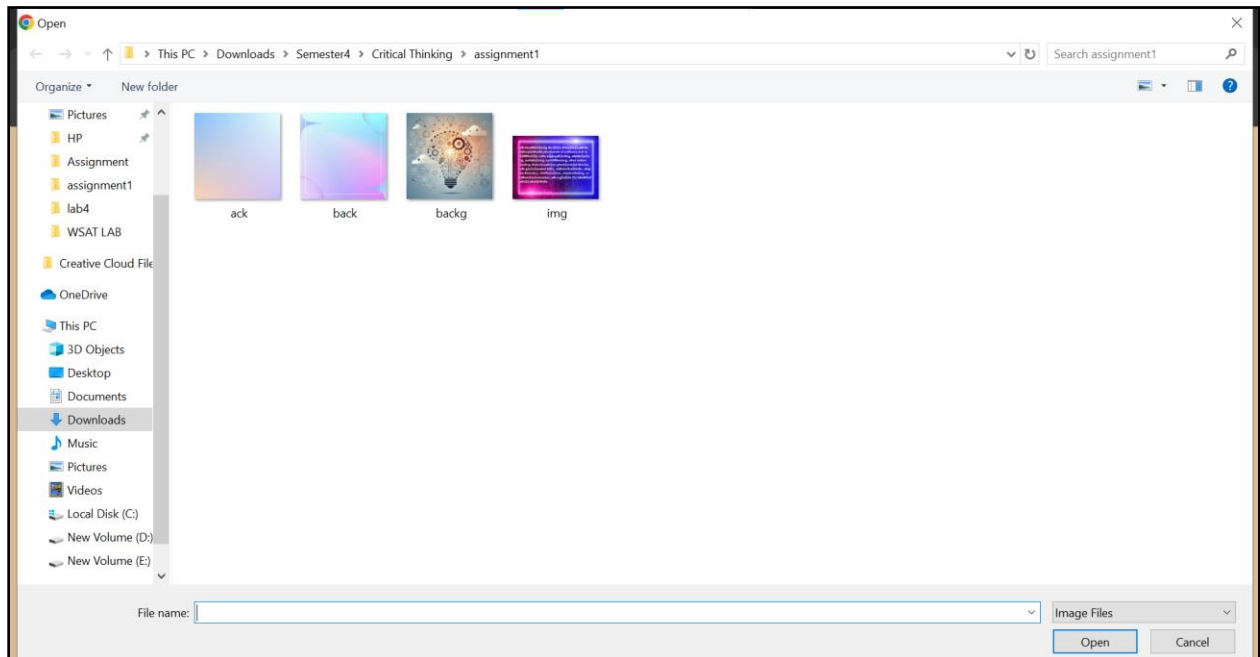
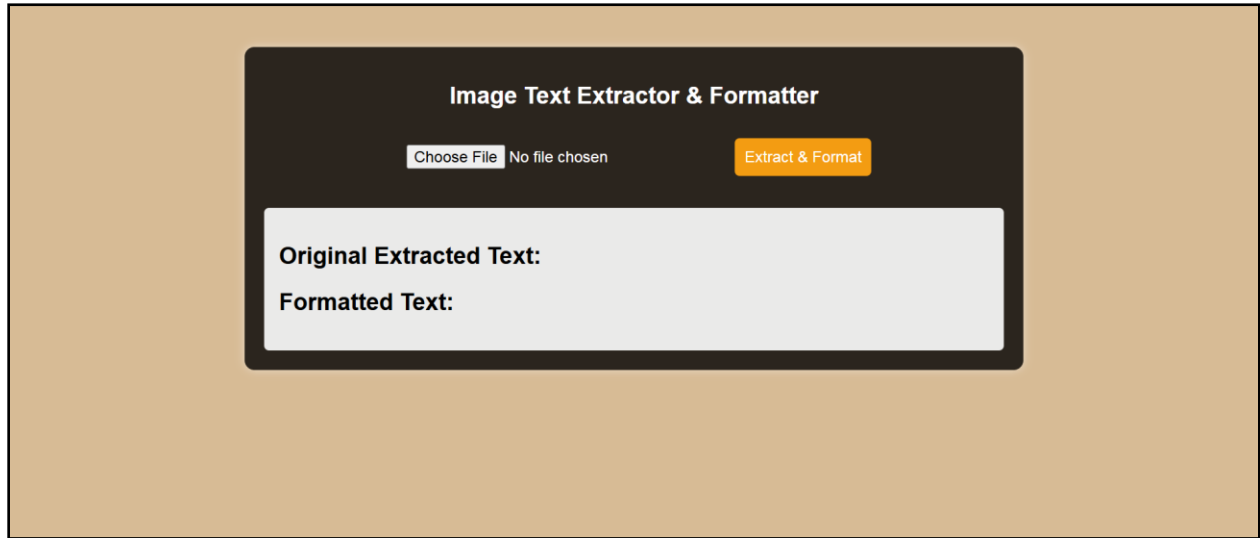
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Submitted by: Esha Ashfaq

Output:





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Image Text Extractor & Formatter

Choose File

Extract & Format

Original Extracted Text:

ChriticalthinkinSg is tShSe intelletualy
discipSlineid proScsess of actively and sk
SillfulSly coinceSptuatiSziing applSyiSn
Sg analySzing synthesizing and evalu
Sating inforSmatiSon gathSereSd froSm
otr gSeSnSerated bSy obsServaStioin exp
SertieinSce rifeftileSctSion rifeasonSing or
cHomSmSunication as a gSuiSde tSo beliSef
and aticitSiton

Original Extracted Text:

ChriticalthinkinSg is tShSe intelletualy
discipSlineid proScsess of actively and sk
SillfulSly coinceSptuatiSziing applSyiSn
Sg analySzing synthesizing and evalu
Sating inforSmatiSon gathSereSd froSm
otr gSeSnSerated bSy obsServaStioin exp
SertieinSce rifeftileSctSion rifeasonSing or
cHomSmSunication as a gSuiSde tSo beliSef
and aticitSiton

Formatted Text:

Name: Esha Ashfaq
Roll No: 02-235232-002
Subject: Critical Thinking
Class: BS IT 4 A

Chriticalthinkinsg is tshse intelletuaily discipSlineid proscsess of actively and sk sillfulsly
coinceSptuatIsziing applsyisn sg analySzing synthesizing and evaluate stating inforSmation gathered
from or generated by obsservatioin exp sertieinsce rifeftilesctSion rifeasonsing or communication as
a guide to belief and action