



UNIVERSITY OF  
**SINDH**

**Assignment**  
**Of**  
**Human Computer**  
**Interaction(HCI)**  
**Assignment(1,2,3)**

**Submitted By:**  
**Mubashir Ali S/O**  
**Mansoor Ali**  
**(2k20/ITE/73)Group(A)**

**Submitted To:**  
**Sir.Dil Nawaz Hakro**  
**Professor Dept:**  
**Information Technology**

## **Assignment #1**

### **Read problem solving and emotion theory's write it in own words**

#### **Problem Solving Theory:**

Problem-solving theory refers to a framework or set of principles that guides the process of solving problems effectively. It involves a systematic and analytical approach to understanding, defining, and resolving problems in various domains, such as psychology, education, and management. Problem-solving theories provide models, strategies, and techniques to enhance problem-solving skills and achieve optimal solutions.

- There are several prominent models of problem solving, but most share the following basic steps:
- 1. **Problem Identification:** This involves recognizing that a problem exists and defining it clearly.
- 2. **Problem Analysis:** Once the problem has been identified, the next step is to analyze it to understand its underlying causes and factors.
- 3. **Solution Generation:** This involves generating possible solutions or strategies to address the problem.
- 4. **Solution Evaluation:** The possible solutions are evaluated against a set of criteria, such as feasibility, effectiveness, and potential risks and benefits.
- 5. **Solution Implementation:** The best solution is selected and implemented, typically through a plan of action.

#### **Article to Identify Problem Solving Theory:**

##### **"The Role of Emotions in Problem-Solving" by Joseph F. Forgas**

In "The Role of Emotions in Problem-Solving," Joseph F. Forgas discusses the importance of emotions in the problem-solving process. He argues that emotions serve several functions in problem-solving, including providing motivation, facilitating cognitive processing, and promoting creativity.

#### **Problem-Solving theory(write in your own words)**

According to Forgas, positive emotions such as happiness and enthusiasm can increase motivation and cognitive flexibility, leading to more effective problem-solving. On the other hand, negative emotions such as anxiety and frustration can impair problem-solving by limiting cognitive processing and reducing creativity.

Forgas also suggests that emotions can influence problem-solving through their impact on decision-making. Emotions can bias our judgments, affect our willingness to take risks, and influence our preferences for certain solutions. Overall, Forgas highlights the importance of being aware of

one's emotional state when attempting to solve problems. By understanding how emotions impact the problem-solving process, individuals can better manage their emotional states to promote effective problem-solving outcomes.

### **Emotion Theory:**

Emotion theory is a field of study that explores the nature, function, and expression of human emotions. It seeks to understand how emotions are experienced, how they influence behavior, and how they are expressed through facial expressions, body language, and communication.

#### **Article to Identify Emotion Theory:**

##### **"The Social Functions of Emotions" by Joseph P. Forgas**

In "The Social Functions of Emotions," Joseph P. Forgas discusses how emotions serve important social functions and how they influence social behavior. This article is based on the social-functional emotion theory, which emphasizes the importance of emotions in serving adaptive social functions.

#### **Emotion Theory (write in your own words)**

According to this theory, emotions have evolved to help individuals adapt to social situations and to communicate their internal states to others. Emotions provide valuable information about the current situation, such as the presence of danger, opportunity, or social norm violations. They also regulate social behavior by motivating individuals to approach or avoid certain situations and by guiding social interactions.

Forgas argues that emotions play a key role in social communication, relationship maintenance, and social influence. For example, emotions can help individuals convey important information about their feelings, needs, and intentions to others, which can help establish and maintain social bonds. Emotions can also help individuals regulate their own behavior and the behavior of others by signaling the appropriate norms and expectations for social interaction.

Furthermore, Forgas notes that emotions can be influenced by social context and social norms. The way individuals express and regulate their emotions is shaped by cultural and social factors, such as gender, social status, and group norms. As a result, emotions are not solely an individual experience but are also influenced by social factors. Overall, "The Social Functions of Emotions" provides a comprehensive overview of how emotions serve important social functions and how they influence social behavior. By examining emotions through the lens of social-functional emotion theory, this article highlights the crucial role that emotions play in our social lives.

## **Assignment #2**

### **(Calculate the raw size of images taken from different devices)**

#### **Introduction:**

"Raw size" can refer to different things depending on the context, but in general, it means the unprocessed, uncompressed or un-formatted size of something.

**For example**, when talking about digital data, the raw size may refer to the amount of data in its original, unprocessed form before any compression or encoding has been applied. This could include the raw size of a digital image file, a video file, or a database file.

Similarly, in manufacturing, raw size may refer to the size of a material or component before any processing or shaping has been done. For example, the raw size of a piece of metal before it is cut or molded into a specific shape.

Overall, "raw size" refers to the initial, unaltered size or dimensions of something before it has been transformed or modified in any way.

The raw size of images taken from different devices can vary depending on several factors such as the resolution of the image, the compression algorithm used, and the file format. Here are some common image sizes for different devices.

#### **Digital files:**

To calculate the raw size of a digital file, you need to determine the total number of bytes that make up the file. One way to do this is to check the properties of the file on your computer, which should show you the file size in bytes. Alternatively, you can use a file size calculator tool, which will give you the size in bytes, kilobytes, megabytes, or other units.

#### **Images:**

To calculate the raw size of a digital image, you need to know the resolution of the image, which is the number of pixels it contains. You then multiply the width of the image in pixels by the height of the image in pixels to get the total number of pixels. Finally, you multiply the total number of pixels by the number of bits per pixel to get the total number of bits. To convert this to bytes, you divide by 8.

### **Calculate Raw Size Of Images:**

The formula to calculate the Raw Size of an image is as follows:

$$\text{RAW Size} = \text{No Of Pixels} \times \text{Bit Depth} / 8 / 1024 / 1024 = \text{File Size in (MB)}$$

#### **For Example:**

##### **From DsLR 600D:**

$$\text{RAW Size} = 960 \times 639 \times 24 / 8 / 1024 / 1024 = 1.76 \text{ (MB)}$$

##### **From I Phone 7 plus:**

$$\text{RAW Size} = 960 \times 1280 \times 24 / 8 / 1024 / 1024 = 3.52 \text{ (MB)}$$

##### **From Vivo:**

$$\text{RAW Size} = 4700 \times 3133 \times 24 / 8 / 1024 / 1024 = 42.1 \text{ (MB)}$$

##### **From Samsung Galaxy A10:**

$$\text{RAW Size} = 2448 \times 3264 \times 24 / 8 / 1024 / 1024 = 22.86 \text{ (MB)}$$

##### **From Itel 6510:**

$$\text{RAW Size} = 1280 \times 720 \times 24 / 8 / 1024 / 1024 = 2.64 \text{ (MB)}$$

#### **Note:**

The file size of an image can also vary depending on the compression level used for JPEG files. Higher compression levels result in smaller file sizes, but can also result in a loss of image quality. RAW files are typically larger and uncompressed, but retain more image information.

### **Assignment #3**

**(List out speech recognition software (e.g ms word) screen record short video while using speech recognition software.**

There are many speech recognition software available, some of the most popular ones are:

- ✓ **Microsoft Word** - allows users to dictate and transcribe text using their voice.
- ✓ **Dragon Naturally-Speaking** - a popular speech recognition software that can be used for dictation, transcription, and even for controlling your computer through voice commands.

- ✓ **Google Docs Voice Typing** - allows users to dictate text in Google Docs using their voice.
- ✓ **Apple Dictation** a speech recognition software available on Apple devices that allows users to dictate and transcribe text.
- ✓ **SpeechTexter** - an online speech recognition tool that transcribes text in real-time.

As for screen recording while using speech recognition software, there are several screen recording software available, some of which include:

- ✓ **OBS Studio** - a free and open-source software for screen recording and live streaming.
- ✓ **Camtasia** - a popular screen recording software that allows users to create professional-quality videos.
- ✓ **Screencast-O-Matic** - an online screen recording tool that allows users to record their screen and webcam simultaneously.
- ✓ **Loom** - a video recording software that allows users to record their screen, webcam, or both.
- ✓ **Bandicam** - a screen recording software that allows users to record high-quality videos with minimal lag and high compression rate.

To create a short video while using speech recognition software, you can simply open the speech recognition software and start dictating your text while simultaneously recording your screen using any of the above-listed screen recording software.

**Here is the link Of Google Drive:**

**Video of Speech Recognition:**

[https://drive.google.com/file/d/1-ak\\_FlyYfWnR9FDfeF\\_lky-UPZfVfCw3/view?usp=share\\_link](https://drive.google.com/file/d/1-ak_FlyYfWnR9FDfeF_lky-UPZfVfCw3/view?usp=share_link)

***The End***