

**Job No:** 03

**Job Name:** QR Code and Barcode generator and decoding

**Objective:** Create QR codes and barcodes in Python, save them as pictures, and then read and extract data from them.

**Algorithm:**

**1. Generate QR Code:**

- Initialize a QR code object with specified parameters such as version, error correction level, box size, and border.
- Add the data to be encoded to the QR code object.
- Generate the QR code image using the specified parameters.

**2. Generate Barcode:**

- Initialize a barcode object (EAN-13 format) with the desired value.
- Generate the barcode image.

**3. Save Images:**

- Save the generated QR code and barcode images to the local filesystem.

**4. Decode QR Code and Barcode:**

- Load the saved QR code and barcode images.
- Use the **pyzbar** library to decode the images and extract the encoded data.

**5. Print Results:**

- Print the decoded data from the QR code and barcode.

**Program:**

**Generating QR Code:**

```
import qrcode
```

```
qr = qrcode.QRCode(  
    version=1,  
    error_correction=qrcode.constants.ERROR_CORRECT_L,  
    box_size=10,  
    border=4,  
)  
qr.add_data("Name: Mahfuz Ahmed Rafi\nRoll: 751921\nSemester:  
3rd(Morning)\nDept: CST")  
qr.make(fit=True)
```

```
img = qr.make_image(fill_color="black", back_color="white")
img.save("qrcode.png")
```

### **Decoding QR Code:**

```
from pyzbar.pyzbar import decode
from PIL import Image
```

```
img = Image.open('qrcode.png')
result = decode(img)
for i in result:
    print(i.data.decode("utf-8"))
```

### **Generating Barcode:**

```
import barcode
from barcode.writer import ImageWriter

ean = barcode.get('ean13', '1502274722751921', writer=ImageWriter())
filename = ean.save('barcode')
print(f"Barcode saved as: {filename}")
```

### **Decoding Barcode:**

```
from pyzbar.pyzbar import decode
from PIL import Image

# Load the barcode image
barcode_image = Image.open("barcode.png")

# Decode the barcode
decoded_objects = decode(barcode_image)

# Print decoded barcode value
if decoded_objects:
    barcode_value = decoded_objects[0].data.decode('utf-8')
    print("Decoded barcode value:", barcode_value)
else:
    print("No barcode detected.")
```

## **Output:**

### **Generating QR Code:**



### **Decoding QR Code:**

Name: Mahfuz Ahmed Rafi

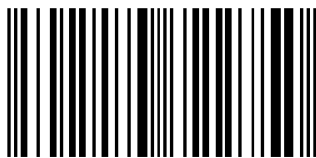
Roll: 751921

Semester: 3rd(Morning)

Dept: CST

### **Generating Barcode:**

Barcode saved as: barcode.png



1502274722750

### **Decoding Barcode:**

Decoded barcode value: 1502274722750