**Subject-Advanced Embedded Programming**

**Subject code-CAT-851**

**Question 1. Create a web application based on .NET framework/Android (Based on Specialization Opted by student) App based on following Theme.**

* 1. You can choose one hardware from Raspberry pi and Arduino.
  2. Circuit Diagram is required with clearly visibility of wiring that you have implemented for making the connections.
  3. You should implement any cloud service to send the data from App to Gateway for controlling the sensors.

Live Status of All mentioned Equipment should be clearly visible whether it is ON or OFF with color code green for ON red for OFF.

#! /usr/bin/env python

# -\*- coding: utf-8 -\*-

#

# GUI module generated by PAGE version 5.0.3

# in conjunction with Tcl version 8.6

# Apr 02, 2020 08:02:31 PM IST platform: Windows NT

import sys

try:

import Tkinter as tk

except ImportError:

import tkinter as tk

try:

import ttk

py3 = False

except ImportError:

import tkinter.ttk as ttk

py3 = True

import unknown\_support

def vp\_start\_gui():

'''Starting point when module is the main routine.'''

global val, w, root

root = tk.Tk()

unknown\_support.set\_Tk\_var()

top = Toplevel1 (root)

unknown\_support.init(root, top)

root.mainloop()

w = None

def create\_Toplevel1(rt, \*args, \*\*kwargs):

'''Starting point when module is imported by another module.

Correct form of call: 'create\_Toplevel1(root, \*args, \*\*kwargs)' .'''

global w, w\_win, root

#rt = root

root = rt

w = tk.Toplevel (root)

unknown\_support.set\_Tk\_var()

top = Toplevel1 (w)

unknown\_support.init(w, top, \*args, \*\*kwargs)

return (w, top)

def destroy\_Toplevel1():

global w

w.destroy()

w = None

class Toplevel1:

def \_\_init\_\_(self, top=None):

'''This class configures and populates the toplevel window.

top is the toplevel containing window.'''

\_bgcolor = '#d9d9d9' # X11 color: 'gray85'

\_fgcolor = '#000000' # X11 color: 'black'

\_compcolor = '#d9d9d9' # X11 color: 'gray85'

\_ana1color = '#d9d9d9' # X11 color: 'gray85'

\_ana2color = '#ececec' # Closest X11 color: 'gray92'

top.geometry("984x714+523+107")

top.minsize(148, 1)

top.maxsize(1924, 1055)

top.resizable(1, 1)

top.title("New Toplevel")

top.configure(background="#d9d9d9")

self.Labelframe1 = tk.LabelFrame(top)

self.Labelframe1.place(relx=0.022, rely=0.011, relheight=0.298

, relwidth=0.437)

self.Labelframe1.configure(relief='groove')

self.Labelframe1.configure(foreground="black")

self.Labelframe1.configure(text='''Bedroom''')

self.Labelframe1.configure(background="#d9d9d9")

self.Label1 = tk.Label(self.Labelframe1)

self.Label1.place(relx=0.023, rely=0.131, height=18, width=42

, bordermode='ignore')

self.Label1.configure(background="#d9d9d9")

self.Label1.configure(disabledforeground="#a3a3a3")

self.Label1.configure(foreground="#000000")

self.Label1.configure(text='''Fan 1''')

self.Label2 = tk.Label(self.Labelframe1)

self.Label2.place(relx=0.023, rely=0.263, height=18, width=42

, bordermode='ignore')

self.Label2.configure(background="#d9d9d9")

self.Label2.configure(disabledforeground="#a3a3a3")

self.Label2.configure(foreground="#000000")

self.Label2.configure(text='''Fan 2''')

self.Label3 = tk.Label(self.Labelframe1)

self.Label3.place(relx=0.023, rely=0.399, height=18, width=81

, bordermode='ignore')

self.Label3.configure(background="#d9d9d9")

self.Label3.configure(disabledforeground="#a3a3a3")

self.Label3.configure(foreground="#000000")

self.Label3.configure(text='''Tubelight 1''')

self.Label4 = tk.Label(self.Labelframe1)

self.Label4.place(relx=0.023, rely=0.531, height=18, width=81

, bordermode='ignore')

self.Label4.configure(background="#d9d9d9")

self.Label4.configure(disabledforeground="#a3a3a3")

self.Label4.configure(foreground="#000000")

self.Label4.configure(text='''Tubelight 2''')

self.Label5 = tk.Label(self.Labelframe1)

self.Label5.place(relx=0.023, rely=0.662, height=18, width=102

, bordermode='ignore')

self.Label5.configure(background="#d9d9d9")

self.Label5.configure(disabledforeground="#a3a3a3")

self.Label5.configure(foreground="#000000")

self.Label5.configure(text='''Air Conditioner''')

self.Label6 = tk.Label(self.Labelframe1)

self.Label6.place(relx=0.023, rely=0.798, height=17, width=142

, bordermode='ignore')

self.Label6.configure(background="#d9d9d9")

self.Label6.configure(disabledforeground="#a3a3a3")

self.Label6.configure(foreground="#000000")

self.Label6.configure(text='''Current Temperature:''')

self.temp\_indicator = tk.Label(self.Labelframe1)

self.temp\_indicator.place(relx=0.395, rely=0.793, height=19, width=102

, bordermode='ignore')

self.temp\_indicator.configure(background="#d9d9d9")

self.temp\_indicator.configure(borderwidth="4")

self.temp\_indicator.configure(disabledforeground="#a3a3a3")

self.temp\_indicator.configure(foreground="#000000")

self.temp\_indicator.configure(textvariable=unknown\_support.temp)

self.Button1 = tk.Button(self.Labelframe1)

self.Button1.place(relx=0.186, rely=0.131, height=23, width=22

, bordermode='ignore')

self.Button1.configure(activebackground="#37df0d")

self.Button1.configure(activeforeground="#000000")

self.Button1.configure(background="#ff0f0f")

self.Button1.configure(disabledforeground="#a3a3a3")

self.Button1.configure(foreground="#000000")

self.Button1.configure(highlightbackground="#d9d9d9")

self.Button1.configure(highlightcolor="black")

self.Button1.configure(pady="0")

self.Button1\_4 = tk.Button(self.Labelframe1)

self.Button1\_4.place(relx=0.279, rely=0.399, height=23, width=22

, bordermode='ignore')

self.Button1\_4.configure(activebackground="#37df0d")

self.Button1\_4.configure(activeforeground="#000000")

self.Button1\_4.configure(background="#ff0f0f")

self.Button1\_4.configure(disabledforeground="#a3a3a3")

self.Button1\_4.configure(foreground="#000000")

self.Button1\_4.configure(highlightbackground="#d9d9d9")

self.Button1\_4.configure(highlightcolor="black")

self.Button1\_4.configure(pady="0")

self.Button1\_5 = tk.Button(self.Labelframe1)

self.Button1\_5.place(relx=0.186, rely=0.254, height=23, width=22

, bordermode='ignore')

self.Button1\_5.configure(activebackground="#37df0d")

self.Button1\_5.configure(activeforeground="#000000")

self.Button1\_5.configure(background="#ff0f0f")

self.Button1\_5.configure(disabledforeground="#a3a3a3")

self.Button1\_5.configure(foreground="#000000")

self.Button1\_5.configure(highlightbackground="#d9d9d9")

self.Button1\_5.configure(highlightcolor="black")

self.Button1\_5.configure(pady="0")

self.Button1\_6 = tk.Button(self.Labelframe1)

self.Button1\_6.place(relx=0.279, rely=0.54, height=23, width=22

, bordermode='ignore')

self.Button1\_6.configure(activebackground="#37df0d")

self.Button1\_6.configure(activeforeground="#000000")

self.Button1\_6.configure(background="#ff0f0f")

self.Button1\_6.configure(disabledforeground="#a3a3a3")

self.Button1\_6.configure(foreground="#000000")

self.Button1\_6.configure(highlightbackground="#d9d9d9")

self.Button1\_6.configure(highlightcolor="black")

self.Button1\_6.configure(pady="0")

self.Button1\_6 = tk.Button(self.Labelframe1)

self.Button1\_6.place(relx=0.349, rely=0.648, height=23, width=22

, bordermode='ignore')

self.Button1\_6.configure(activebackground="#37df0d")

self.Button1\_6.configure(activeforeground="#000000")

self.Button1\_6.configure(background="#ff0f0f")

self.Button1\_6.configure(disabledforeground="#a3a3a3")

self.Button1\_6.configure(foreground="#000000")

self.Button1\_6.configure(highlightbackground="#d9d9d9")

self.Button1\_6.configure(highlightcolor="black")

self.Button1\_6.configure(pady="0")

self.Labelframe1\_8 = tk.LabelFrame(top)

self.Labelframe1\_8.place(relx=0.478, rely=0.013, relheight=0.203

, relwidth=0.437)

self.Labelframe1\_8.configure(relief='groove')

self.Labelframe1\_8.configure(foreground="black")

self.Labelframe1\_8.configure(text='''Kitchen''')

self.Labelframe1\_8.configure(background="#d9d9d9")

self.Labelframe1\_8.configure(cursor="fleur")

self.Labelframe1\_8.configure(highlightbackground="#d9d9d9")

self.Labelframe1\_8.configure(highlightcolor="black")

self.Label1\_9 = tk.Label(self.Labelframe1\_8)

self.Label1\_9.place(relx=0.023, rely=0.138, height=28, width=42

, bordermode='ignore')

self.Label1\_9.configure(activebackground="#f9f9f9")

self.Label1\_9.configure(activeforeground="black")

self.Label1\_9.configure(background="#d9d9d9")

self.Label1\_9.configure(disabledforeground="#a3a3a3")

self.Label1\_9.configure(foreground="#000000")

self.Label1\_9.configure(highlightbackground="#d9d9d9")

self.Label1\_9.configure(highlightcolor="black")

self.Label1\_9.configure(text='''Fan 1''')

self.Label3\_11 = tk.Label(self.Labelframe1\_8)

self.Label3\_11.place(relx=0.023, rely=0.407, height=29, width=81

, bordermode='ignore')

self.Label3\_11.configure(activebackground="#f9f9f9")

self.Label3\_11.configure(activeforeground="black")

self.Label3\_11.configure(background="#d9d9d9")

self.Label3\_11.configure(disabledforeground="#a3a3a3")

self.Label3\_11.configure(foreground="#000000")

self.Label3\_11.configure(highlightbackground="#d9d9d9")

self.Label3\_11.configure(highlightcolor="black")

self.Label3\_11.configure(text='''Tubelight 1''')

self.Label5\_13 = tk.Label(self.Labelframe1\_8)

self.Label5\_13.place(relx=0.023, rely=0.759, height=12, width=112

, bordermode='ignore')

self.Label5\_13.configure(activebackground="#f9f9f9")

self.Label5\_13.configure(activeforeground="black")

self.Label5\_13.configure(background="#d9d9d9")

self.Label5\_13.configure(disabledforeground="#a3a3a3")

self.Label5\_13.configure(foreground="#000000")

self.Label5\_13.configure(highlightbackground="#d9d9d9")

self.Label5\_13.configure(highlightcolor="black")

self.Label5\_13.configure(text='''Induction Stove''')

self.Button1\_16 = tk.Button(self.Labelframe1\_8)

self.Button1\_16.place(relx=0.186, rely=0.172, height=23, width=22

, bordermode='ignore')

self.Button1\_16.configure(activebackground="#37df0d")

self.Button1\_16.configure(activeforeground="#000000")

self.Button1\_16.configure(background="#ff0f0f")

self.Button1\_16.configure(cursor="fleur")

self.Button1\_16.configure(disabledforeground="#a3a3a3")

self.Button1\_16.configure(foreground="#000000")

self.Button1\_16.configure(highlightbackground="#d9d9d9")

self.Button1\_16.configure(highlightcolor="black")

self.Button1\_16.configure(pady="0")

self.Button1\_5 = tk.Button(self.Labelframe1\_8)

self.Button1\_5.place(relx=0.302, rely=0.407, height=23, width=22

, bordermode='ignore')

self.Button1\_5.configure(activebackground="#37df0d")

self.Button1\_5.configure(activeforeground="#000000")

self.Button1\_5.configure(background="#ff0f0f")

self.Button1\_5.configure(disabledforeground="#a3a3a3")

self.Button1\_5.configure(foreground="#000000")

self.Button1\_5.configure(highlightbackground="#d9d9d9")

self.Button1\_5.configure(highlightcolor="black")

self.Button1\_5.configure(pady="0")

self.Button1\_7 = tk.Button(self.Labelframe1\_8)

self.Button1\_7.place(relx=0.372, rely=0.703, height=23, width=22

, bordermode='ignore')

self.Button1\_7.configure(activebackground="#37df0d")

self.Button1\_7.configure(activeforeground="#000000")

self.Button1\_7.configure(background="#ff0f0f")

self.Button1\_7.configure(disabledforeground="#a3a3a3")

self.Button1\_7.configure(foreground="#000000")

self.Button1\_7.configure(highlightbackground="#d9d9d9")

self.Button1\_7.configure(highlightcolor="black")

self.Button1\_7.configure(pady="0")

self.Labelframe1\_8 = tk.LabelFrame(top)

self.Labelframe1\_8.place(relx=0.02, rely=0.324, relheight=0.276

, relwidth=0.437)

self.Labelframe1\_8.configure(relief='groove')

self.Labelframe1\_8.configure(foreground="black")

self.Labelframe1\_8.configure(text='''Dining Room''')

self.Labelframe1\_8.configure(background="#d9d9d9")

self.Labelframe1\_8.configure(highlightbackground="#d9d9d9")

self.Labelframe1\_8.configure(highlightcolor="black")

self.Label1\_9 = tk.Label(self.Labelframe1\_8)

self.Label1\_9.place(relx=0.023, rely=0.132, height=17, width=42

, bordermode='ignore')

self.Label1\_9.configure(activebackground="#f9f9f9")

self.Label1\_9.configure(activeforeground="black")

self.Label1\_9.configure(background="#d9d9d9")

self.Label1\_9.configure(disabledforeground="#a3a3a3")

self.Label1\_9.configure(foreground="#000000")

self.Label1\_9.configure(highlightbackground="#d9d9d9")

self.Label1\_9.configure(highlightcolor="black")

self.Label1\_9.configure(text='''Fan 1''')

self.Label2\_10 = tk.Label(self.Labelframe1\_8)

self.Label2\_10.place(relx=0.023, rely=0.264, height=17, width=42

, bordermode='ignore')

self.Label2\_10.configure(activebackground="#f9f9f9")

self.Label2\_10.configure(activeforeground="black")

self.Label2\_10.configure(background="#d9d9d9")

self.Label2\_10.configure(disabledforeground="#a3a3a3")

self.Label2\_10.configure(foreground="#000000")

self.Label2\_10.configure(highlightbackground="#d9d9d9")

self.Label2\_10.configure(highlightcolor="black")

self.Label2\_10.configure(text='''Fan 2''')

self.Label3\_11 = tk.Label(self.Labelframe1\_8)

self.Label3\_11.place(relx=0.023, rely=0.396, height=17, width=81

, bordermode='ignore')

self.Label3\_11.configure(activebackground="#f9f9f9")

self.Label3\_11.configure(activeforeground="black")

self.Label3\_11.configure(background="#d9d9d9")

self.Label3\_11.configure(disabledforeground="#a3a3a3")

self.Label3\_11.configure(foreground="#000000")

self.Label3\_11.configure(highlightbackground="#d9d9d9")

self.Label3\_11.configure(highlightcolor="black")

self.Label3\_11.configure(text='''Tubelight 1''')

self.Label4\_12 = tk.Label(self.Labelframe1\_8)

self.Label4\_12.place(relx=0.023, rely=0.533, height=16, width=81

, bordermode='ignore')

self.Label4\_12.configure(activebackground="#f9f9f9")

self.Label4\_12.configure(activeforeground="black")

self.Label4\_12.configure(background="#d9d9d9")

self.Label4\_12.configure(disabledforeground="#a3a3a3")

self.Label4\_12.configure(foreground="#000000")

self.Label4\_12.configure(highlightbackground="#d9d9d9")

self.Label4\_12.configure(highlightcolor="black")

self.Label4\_12.configure(text='''Tubelight 2''')

self.Label5\_13 = tk.Label(self.Labelframe1\_8)

self.Label5\_13.place(relx=0.023, rely=0.665, height=17, width=72

, bordermode='ignore')

self.Label5\_13.configure(activebackground="#f9f9f9")

self.Label5\_13.configure(activeforeground="black")

self.Label5\_13.configure(background="#d9d9d9")

self.Label5\_13.configure(disabledforeground="#a3a3a3")

self.Label5\_13.configure(foreground="#000000")

self.Label5\_13.configure(highlightbackground="#d9d9d9")

self.Label5\_13.configure(highlightcolor="black")

self.Label5\_13.configure(text='''Television''')

self.Button1\_16 = tk.Button(self.Labelframe1\_8)

self.Button1\_16.place(relx=0.186, rely=0.132, height=23, width=22

, bordermode='ignore')

self.Button1\_16.configure(activebackground="#37df0d")

self.Button1\_16.configure(activeforeground="#000000")

self.Button1\_16.configure(background="#ff0f0f")

self.Button1\_16.configure(disabledforeground="#a3a3a3")

self.Button1\_16.configure(foreground="#000000")

self.Button1\_16.configure(highlightbackground="#d9d9d9")

self.Button1\_16.configure(highlightcolor="black")

self.Button1\_16.configure(pady="0")

self.Button1\_5 = tk.Button(self.Labelframe1\_8)

self.Button1\_5.place(relx=0.279, rely=0.401, height=23, width=22

, bordermode='ignore')

self.Button1\_5.configure(activebackground="#37df0d")

self.Button1\_5.configure(activeforeground="#000000")

self.Button1\_5.configure(background="#ff0f0f")

self.Button1\_5.configure(disabledforeground="#a3a3a3")

self.Button1\_5.configure(foreground="#000000")

self.Button1\_5.configure(highlightbackground="#d9d9d9")

self.Button1\_5.configure(highlightcolor="black")

self.Button1\_5.configure(pady="0")

self.Button1\_6 = tk.Button(self.Labelframe1\_8)

self.Button1\_6.place(relx=0.186, rely=0.254, height=23, width=22

, bordermode='ignore')

self.Button1\_6.configure(activebackground="#37df0d")

self.Button1\_6.configure(activeforeground="#000000")

self.Button1\_6.configure(background="#ff0f0f")

self.Button1\_6.configure(disabledforeground="#a3a3a3")

self.Button1\_6.configure(foreground="#000000")

self.Button1\_6.configure(highlightbackground="#d9d9d9")

self.Button1\_6.configure(highlightcolor="black")

self.Button1\_6.configure(pady="0")

self.Button1\_7 = tk.Button(self.Labelframe1\_8)

self.Button1\_7.place(relx=0.279, rely=0.543, height=23, width=22

, bordermode='ignore')

self.Button1\_7.configure(activebackground="#37df0d")

self.Button1\_7.configure(activeforeground="#000000")

self.Button1\_7.configure(background="#ff0f0f")

self.Button1\_7.configure(disabledforeground="#a3a3a3")

self.Button1\_7.configure(foreground="#000000")

self.Button1\_7.configure(highlightbackground="#d9d9d9")

self.Button1\_7.configure(highlightcolor="black")

self.Button1\_7.configure(pady="0")

self.Button1\_7 = tk.Button(self.Labelframe1\_8)

self.Button1\_7.place(relx=0.233, rely=0.675, height=23, width=22

, bordermode='ignore')

self.Button1\_7.configure(activebackground="#37df0d")

self.Button1\_7.configure(activeforeground="#000000")

self.Button1\_7.configure(background="#ff0f0f")

self.Button1\_7.configure(disabledforeground="#a3a3a3")

self.Button1\_7.configure(foreground="#000000")

self.Button1\_7.configure(highlightbackground="#d9d9d9")

self.Button1\_7.configure(highlightcolor="black")

self.Button1\_7.configure(pady="0")

self.Labelframe1\_9 = tk.LabelFrame(top)

self.Labelframe1\_9.place(relx=0.478, rely=0.227, relheight=0.204

, relwidth=0.437)

self.Labelframe1\_9.configure(relief='groove')

self.Labelframe1\_9.configure(foreground="black")

self.Labelframe1\_9.configure(text='''Washroom''')

self.Labelframe1\_9.configure(background="#d9d9d9")

self.Labelframe1\_9.configure(highlightbackground="#d9d9d9")

self.Labelframe1\_9.configure(highlightcolor="black")

self.Label1\_10 = tk.Label(self.Labelframe1\_9)

self.Label1\_10.place(relx=0.023, rely=0.116, height=29, width=92

, bordermode='ignore')

self.Label1\_10.configure(activebackground="#f9f9f9")

self.Label1\_10.configure(activeforeground="black")

self.Label1\_10.configure(background="#d9d9d9")

self.Label1\_10.configure(disabledforeground="#a3a3a3")

self.Label1\_10.configure(foreground="#000000")

self.Label1\_10.configure(highlightbackground="#d9d9d9")

self.Label1\_10.configure(highlightcolor="black")

self.Label1\_10.configure(text='''Water Geyser''')

self.Label3\_12 = tk.Label(self.Labelframe1\_9)

self.Label3\_12.place(relx=0.023, rely=0.411, height=29, width=41

, bordermode='ignore')

self.Label3\_12.configure(activebackground="#f9f9f9")

self.Label3\_12.configure(activeforeground="black")

self.Label3\_12.configure(background="#d9d9d9")

self.Label3\_12.configure(disabledforeground="#a3a3a3")

self.Label3\_12.configure(foreground="#000000")

self.Label3\_12.configure(highlightbackground="#d9d9d9")

self.Label3\_12.configure(highlightcolor="black")

self.Label3\_12.configure(text='''Light''')

self.Label5\_14 = tk.Label(self.Labelframe1\_9)

self.Label5\_14.place(relx=0.023, rely=0.699, height=21, width=112

, bordermode='ignore')

self.Label5\_14.configure(activebackground="#f9f9f9")

self.Label5\_14.configure(activeforeground="black")

self.Label5\_14.configure(background="#d9d9d9")

self.Label5\_14.configure(cursor="fleur")

self.Label5\_14.configure(disabledforeground="#a3a3a3")

self.Label5\_14.configure(foreground="#000000")

self.Label5\_14.configure(highlightbackground="#d9d9d9")

self.Label5\_14.configure(highlightcolor="black")

self.Label5\_14.configure(text='''Water Tank Level''')

self.Button1\_15 = tk.Button(self.Labelframe1\_9)

self.Button1\_15.place(relx=0.302, rely=0.178, height=23, width=22

, bordermode='ignore')

self.Button1\_15.configure(activebackground="#37df0d")

self.Button1\_15.configure(activeforeground="#000000")

self.Button1\_15.configure(background="#ff0f0f")

self.Button1\_15.configure(disabledforeground="#a3a3a3")

self.Button1\_15.configure(foreground="#000000")

self.Button1\_15.configure(highlightbackground="#d9d9d9")

self.Button1\_15.configure(highlightcolor="black")

self.Button1\_15.configure(pady="0")

self.Button1\_6 = tk.Button(self.Labelframe1\_9)

self.Button1\_6.place(relx=0.186, rely=0.411, height=23, width=22

, bordermode='ignore')

self.Button1\_6.configure(activebackground="#37df0d")

self.Button1\_6.configure(activeforeground="#000000")

self.Button1\_6.configure(background="#ff0f0f")

self.Button1\_6.configure(disabledforeground="#a3a3a3")

self.Button1\_6.configure(foreground="#000000")

self.Button1\_6.configure(highlightbackground="#d9d9d9")

self.Button1\_6.configure(highlightcolor="black")

self.Button1\_6.configure(pady="0")

self.Water\_level = tk.Label(self.Labelframe1\_9)

self.Water\_level.place(relx=0.349, rely=0.699, height=18, width=102

, bordermode='ignore')

self.Water\_level.configure(activebackground="#f9f9f9")

self.Water\_level.configure(activeforeground="black")

self.Water\_level.configure(background="#d9d9d9")

self.Water\_level.configure(borderwidth="4")

self.Water\_level.configure(disabledforeground="#a3a3a3")

self.Water\_level.configure(foreground="#000000")

self.Water\_level.configure(highlightbackground="#d9d9d9")

self.Water\_level.configure(highlightcolor="black")

self.Water\_level.configure(textvariable=unknown\_support.temp)

if \_\_name\_\_ == '\_\_main\_\_':

vp\_start\_gui()

**OUTPUT: -**

