SIX WEEKS SUMMER TRAINING REPORT

On

Water Efficiency Calculator

Submitted by

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Registration No: 11816103

Program Name: CAP 300

Under the Guidance of

INTERNSHALA TRAININGS

School of Computer Application

Lovely Professional University, Phagwara

1st June, 2019 To 13th July, 2019

DECLARATION

I hereby declare that I have completed my six weeks summer training at **INTERSHALA TRAINING** from 1st June, 2019 to 13th July, 2019 under the guidance of Sarvesh Agrawal. I hereby undertake that the project undertaken by me is the genuine work of mine.

Hikmatullah Nasiri
11816103

Date: 27th July,2019

Acknowledgment

I owe a deep sense of gratitude to all those who have helped me in the successful completion of my Project.

I am indebted to the INTERNSHALA TRAININGS for giving me constant support and cooperation. I am grateful to the Lovely Professional University for giving me this wonderful opportunity which might prove to be helpful. Also, I am grateful from all of my teachers they helped me and taught me how to use my knowledge in efficient way and I am proud of my lovely teachers. This project has definitely been a rich learning experience for me. And I would like to convey thanks to all those, especially my friends for their ready assistance, keen interest and valuable suggestions in a limited time-bound.

Last but not least, I am extremely grateful to my parents, the respondents and for their unconditional support and ready assistance.

Hikmatullah Nasiri

CERTIFICATE

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1. Introduction

Drinking water, also known as potable water, is water that is safe to drink or to use for food preparation. The amount of drinking water required to maintain good health varies, and depends on physical activity level, age, health-related issues, and environmental conditions.

The basic objective of the Water Efficiency Calculator project is to help people to find out how much water is efficient to drink. Water Efficiency Calculator is a Windows-based application that is designed to help users to determine how much the drinking water is effective and harmless or on the other side, how much it is harmful and dangerous for health. It also helps users to tell them whether they need Reverse Osmosis Water Purifiers or not. Water Efficiency Calculator also provides the facility to the users to manage the TDS (Total Dissolved Solids) level of their RO Water Purification system. It can also determine the efficiency Membrane filter of RO which is the costliest filter in the RO system. An automated water TDS level checking system makes things easier to the users.

2. Profile of the Problem

For the checking of TDS level of water, we have different tools to determine how much solid is dissolved in water. There are charts available on the internet like Drinking Water TDS Chart which shows Ideal water TDS level for drinking. The user must search manually through different websites and blogs to find out the water TDS level chart.

Not even a single organization created such a system to automatically determine the efficiency of water through water TDS level. There is a large gap for people to find out whether their home's Tap Water require RO Water Purifiers or not. Until and unless they become sick and Doctor recommends them RO Water Purifiers.

To fulfill this gap Water Efficiency Calculator is designed in such a way:

1. Check the Efficiency of user's Home's Tap Water whether RO Water Purifier is recommended or how much their water is efficient for drinking.
2. Check the Efficiency of user's RO Water Purifier how much their RO's are working efficiently. How much water TDS level should be adjusted? It should not be more than the specified level it causes different diseases and should not be less than that level the water lost its effectiveness due to losing requisite minerals.
3. Check the Efficiency Membrane of RO Water Purifier. RO's Membrane should be changed every two years in regular consumption of purified water. Sometimes the consumption of water increases so it should be checked whether is it working properly or not. It is the costliest filter in RO Water Purification system. If Membrane loses its efficiency, it must be replaced with a new one.

3. Existing System (If any)

There are varies of health website and blogs that contents Drinking Water TDS Charts the user must search for that manually on the internet. There are formulas for calculating efficiency of Membrane of RO Water. The user must take a piece of paper and pen to calculate the formula. Formally we can that, there is no such an automated system to do the tasks of Water Efficiency Calculator.

4. Problem Analysis

- Problem analysis is the process of understanding real-world problems and user's needs and proposing solutions to meet those needs.
- The goal of problem analysis is to gain a better understanding, before development begins, of the problem being solved.
- To identify the root cause, or the problem behind the problem, ask the people directly involved.
- Identifying the actors on the system is a key step in problem analysis.

The real-world problem was about the lack of an automated system to define the quality of drinking and lack of a tool whether the installed RO Water Purifier is efficient or not. People were in confusion whether to replace the Membrane of RO Water Purifier and when to replace the membrane.

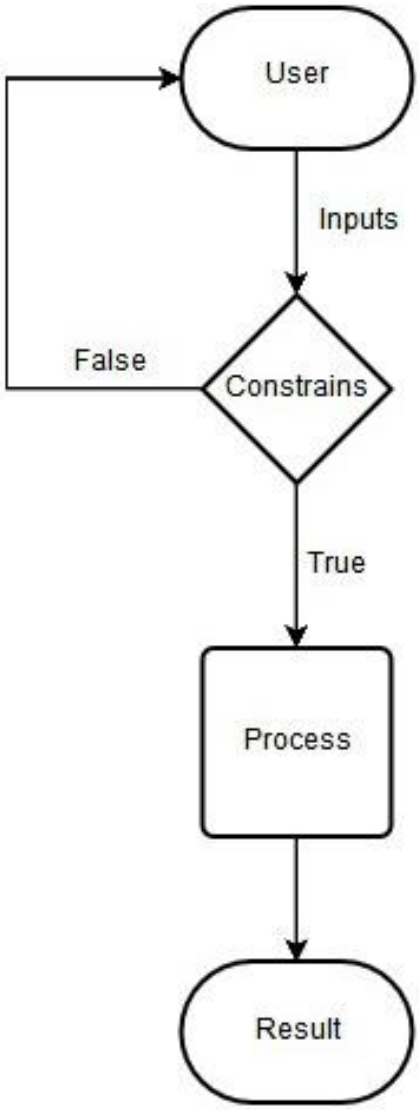
Through this process we found out the basic requirements of the system and expectation from the system.

The root cause or main problem was the absence of proper attention to such a system to design and develop.

This application can act upon the problem with help of Water TDS meter and analyze the problem will get the proper result after the processing of data.

5. Design

Data Flow Diagram



System Design

System design is the process of designing the elements of a system such as the architecture, modules and components, the different interfaces of those components and the data that goes through that system.

System Analysis is the process that decomposes a system into its component pieces for the purpose of defining how well those components interact to accomplish the set requirements.

The purpose of the System Design process is to provide sufficient detailed data and information about the system and its system elements to enable the implementation consistent with architectural entities as defined in models and views of the system architecture.

Elements of a System

Architecture - This is the conceptual model that defines the structure, behavior and more views of a system. We can use flowcharts to represent and illustrate the architecture.

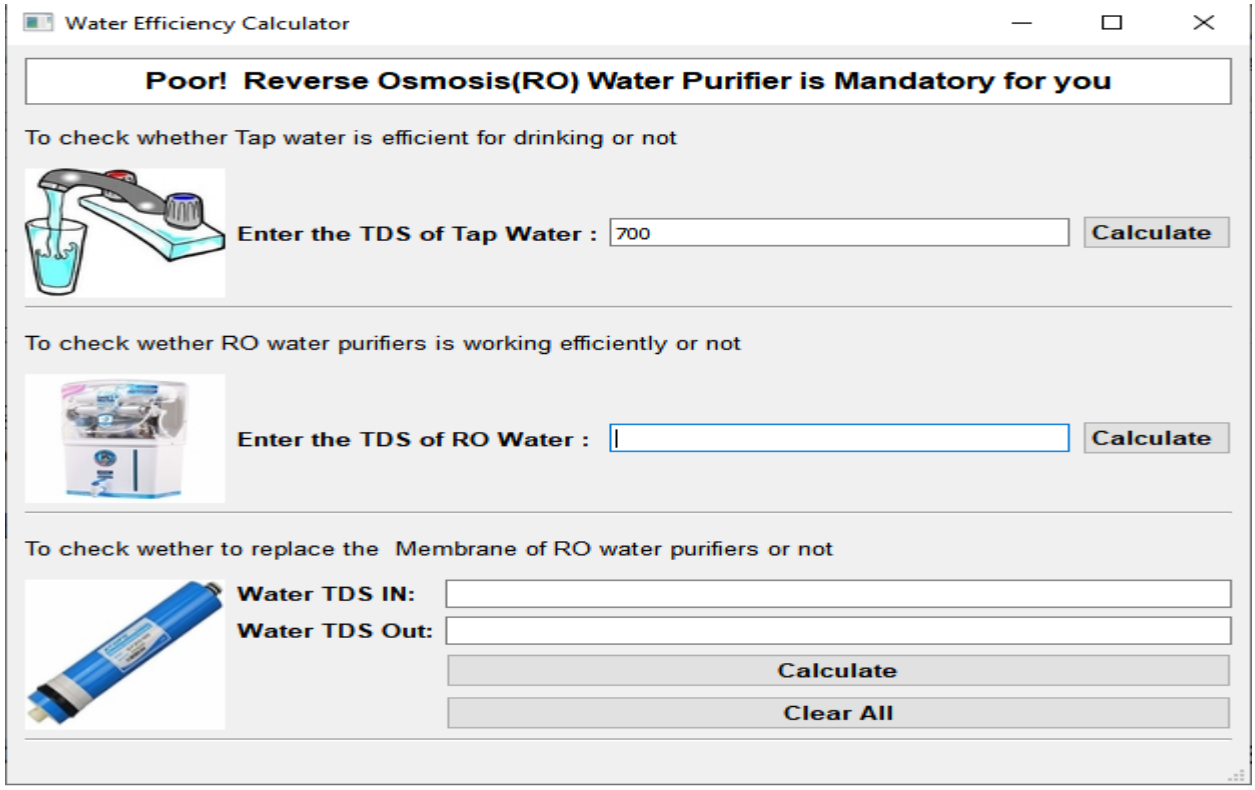
Modules - This are components that handle one specific tasks in a system. A combination of the modules makes up the system.

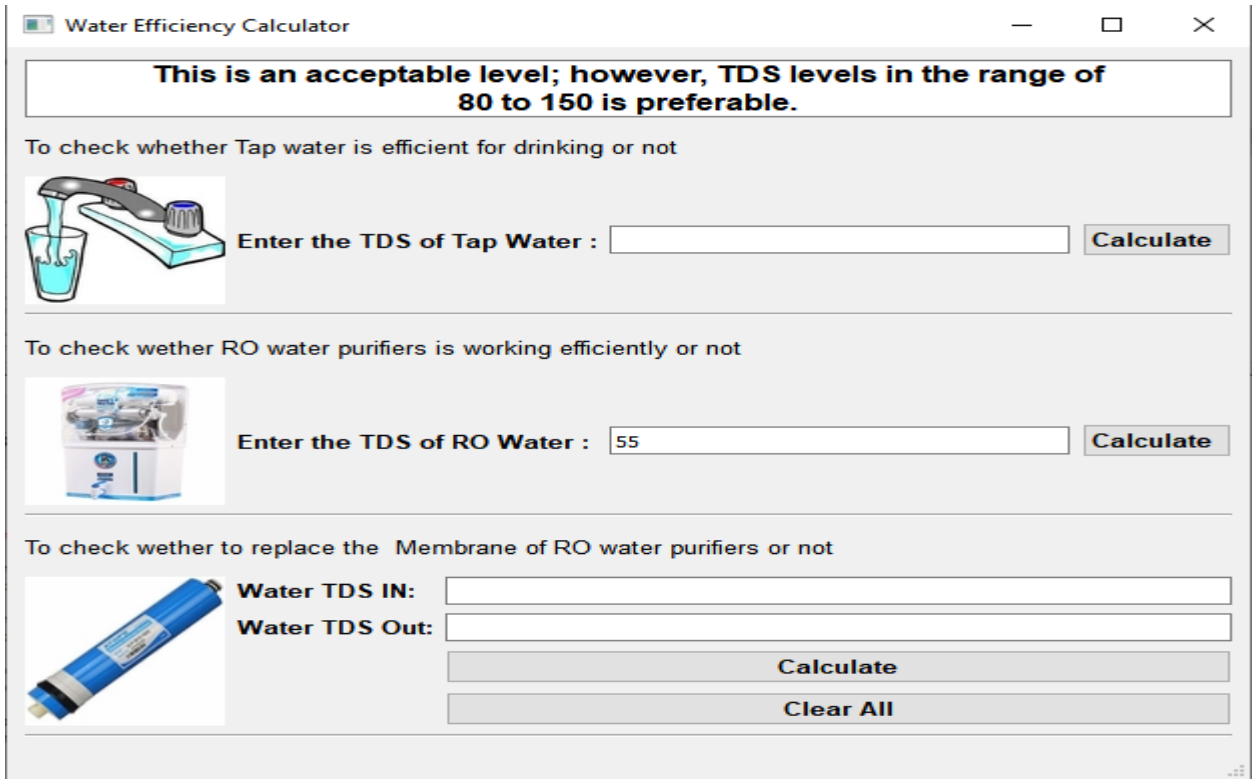
Components - This provides a particular function or group of related functions. They are made up of modules.

Interfaces - This is the shared boundary across which the components of the system exchange information and relate.

Data - This the management of the information and data flow.

Screen Shots:





6. Coding

```
1.
2. # Form implementation generated from reading ui file 'Water Efficiency
   Calculator 2.ui'
3. #
4. # Created by: PyQt5 UI code generator 5.12.3
5. #
6. # WARNING! All changes made in this file will be lost!
7.
8.
9. from PyQt5 import QtCore, QtGui, QtWidgets
10.
11.
12. class Ui_MainWindow(object):
13.     def setupUi(self, MainWindow):
14.         MainWindow.setObjectName("MainWindow")
15.         MainWindow.resize(621, 521)
16.         self.centralwidget = QtWidgets.QWidget(MainWindow)
17.         self.centralwidget.setObjectName("centralwidget")
18.         self.verticalLayout_2 = QtWidgets.QVBoxLayout(self.centralwidget)
19.         self.verticalLayout_2.setObjectName("verticalLayout_2")
20.         self.label_10 = QtWidgets.QLabel(self.centralwidget)
21.         font = QtGui.QFont()
22.         font.setFamily("Arial")
23.         font.setPointSize(12)
24.         font.setBold(True)
25.         font.setWeight(75)
26.         self.label_10.setFont(font)
27.         self.label_10.setAutoFillBackground(False)
28.         self.label_10.setFrameShape(QtWidgets.QFrame.StyledPanel)
29.         self.label_10.setAlignment(QtCore.Qt.AlignCenter)
30.         self.label_10.setObjectName("label_10")
31.         #changing label color
32.         self.label_10.setStyleSheet("background: white");
33.         self.verticalLayout_2.addWidget(self.label_10)
34.         self.label_5 = QtWidgets.QLabel(self.centralwidget)
35.         font = QtGui.QFont()
36.         font.setFamily("Arial")
37.         font.setPointSize(10)
38.         font.setBold(False)
39.         font.setWeight(50)
40.         self.label_5.setFont(font)
41.         self.label_5.setObjectName("label_5")
42.         self.verticalLayout_2.addWidget(self.label_5)
43.         self.horizontalLayout = QtWidgets.QHBoxLayout()
44.         self.horizontalLayout.setObjectName("horizontalLayout")
45.         self.label_3 = QtWidgets.QLabel(self.centralwidget)
46.         self.label_3.setText("")
47.         self.label_3.setPixmap(QtGui.QPixmap("Tap.jpg"))
48.         self.label_3.setScaledContents(True)
49.         self.label_3.setObjectName("label_3")
50.         self.horizontalLayout.addWidget(self.label_3)
51.         self.label = QtWidgets.QLabel(self.centralwidget)
```

```
52.         font = QtGui.QFont()
53.         font.setFamily("Arial")
54.         font.setPointSize(10)
55.         font.setBold(True)
56.         font.setWeight(75)
57.         self.label.setFont(font)
58.         self.label.setObjectName("label")
59.         self.horizontalLayout.addWidget(self.label)
60.         self.line1 = QtWidgets.QLineEdit(self.centralwidget)
61.         self.line1.setObjectName("line1")
62.         self.horizontalLayout.addWidget(self.line1)
63.         self.pushButton = QtWidgets.QPushButton(self.centralwidget)
64.         font = QtGui.QFont()
65.         font.setFamily("Arial")
66.         font.setPointSize(10)
67.         font.setBold(True)
68.         font.setWeight(75)
69.         self.pushButton.setFont(font)
70.         self.pushButton.setObjectName("pushButton")
71.
72.         #calling chktap funcation
73.         self.pushButton.clicked.connect(self.chkTap)
74.
75.         self.horizontalLayout.addWidget(self.pushButton)
76.         self.verticalLayout_2.addLayout(self.horizontalLayout)
77.         self.line = QtWidgets.QFrame(self.centralwidget)
78.         self.line.setFrameShape(QtWidgets.QFrame.HLine)
79.         self.line.setFrameShadow(QtWidgets.QFrame.Sunken)
80.         self.line.setObjectName("line")
81.         self.verticalLayout_2.addWidget(self.line)
82.         self.label_6 = QtWidgets.QLabel(self.centralwidget)
83.         font = QtGui.QFont()
84.         font.setFamily("Arial")
85.         font.setPointSize(10)
86.         font.setBold(False)
87.         font.setWeight(50)
88.         self.label_6.setFont(font)
89.         self.label_6.setObjectName("label_6")
90.         self.verticalLayout_2.addWidget(self.label_6)
91.         self.horizontalLayout_2 = QtWidgets.QHBoxLayout()
92.         self.horizontalLayout_2.setObjectName("horizontalLayout_2")
93.         self.label_4 = QtWidgets.QLabel(self.centralwidget)
94.         self.label_4.setText("")
95.         self.label_4.setPixmap(QtGui.QPixmap("RO.jpg"))
96.         self.label_4.setScaledContents(True)
97.         self.label_4.setObjectName("label_4")
98.         self.horizontalLayout_2.addWidget(self.label_4)
99.         self.label_2 = QtWidgets.QLabel(self.centralwidget)
100.          font = QtGui.QFont()
101.          font.setFamily("Arial")
102.          font.setPointSize(10)
103.          font.setBold(True)
104.          font.setWeight(75)
105.          self.label_2.setFont(font)
106.          self.label_2.setObjectName("label_2")
```

```
        self.horizontalLayout_2.addWidget(self.label_2)
        self.line2 = QtWidgets.QLineEdit(self.centralwidget)
        self.line2.setObjectName("line2")
        self.horizontalLayout_2.addWidget(self.line2)
        self.pushButton_2 = QtWidgets.QPushButton(self.centralwidget)
        font = QtGui.QFont()
        font.setFamily("Arial")
        font.setPointSize(10)
        font.setBold(True)
        font.setWeight(75)
        self.pushButton_2.setFont(font)
        self.pushButton_2.setObjectName("pushButton_2")
        self.horizontalLayout_2.addWidget(self.pushButton_2)

        #calling chkRo funcation
        self.pushButton_2.clicked.connect(self.chkRo)


        self.verticalLayout_2.addLayout(self.horizontalLayout_2)
        self.line_2 = QtWidgets.QFrame(self.centralwidget)
        self.line_2.setFrameShape(QtWidgets.QFrame.HLine)
        self.line_2.setFrameShadow(QtWidgets.QFrame.Sunken)
        self.line_2.setObjectName("line_2")
        self.verticalLayout_2.addWidget(self.line_2)
        self.label_7 = QtWidgets.QLabel(self.centralwidget)
        font = QtGui.QFont()
        font.setFamily("Arial")
        font.setPointSize(10)
        font.setBold(False)
        font.setWeight(50)
        self.label_7.setFont(font)
        self.label_7.setObjectName("label_7")
        self.verticalLayout_2.addWidget(self.label_7)
        self.horizontalLayout_3 = QtWidgets.QHBoxLayout()
        self.horizontalLayout_3.setObjectName("horizontalLayout_3")
        self.label_11 = QtWidgets.QLabel(self.centralwidget)
        self.label_11.setText("")
        self.label_11.setPixmap(QtGui.QPixmap("Membrane.jpg"))
        self.label_11.setScaledContents(True)
        self.label_11.setObjectName("label_11")
        self.horizontalLayout_3.addWidget(self.label_11)
        self.formLayout_3 = QtWidgets.QFormLayout()
        self.formLayout_3.setObjectName("formLayout_3")
        self.label_9 = QtWidgets.QLabel(self.centralwidget)
        font = QtGui.QFont()
        font.setFamily("Arial")
        font.setPointSize(10)
        font.setBold(True)
        font.setWeight(75)
        self.label_9.setFont(font)
        self.label_9.setObjectName("label_9")
        self.formLayout_3.setWidget(1, QtWidgets.QFormLayout.LabelRole,
   self.label_9)
        self.line3 = QtWidgets.QLineEdit(self.centralwidget)
        self.line3.setObjectName("line3")
```

```
161.          self.formLayout_3.setWidget(1, QtWidgets.QFormLayout.FieldRole,
    self.line3)
162.          self.label_8 = QtWidgets.QLabel(self.centralwidget)
163.          font = QtGui.QFont()
164.          font.setFamily("Arial")
165.          font.setPointSize(10)
166.          font.setBold(True)
167.          font.setWeight(75)
168.          self.label_8.setFont(font)
169.          self.label_8.setObjectName("label_8")
170.          self.formLayout_3.setWidget(2, QtWidgets.QFormLayout.LabelRole,
    self.label_8)
171.          self.line4 = QtWidgets.QLineEdit(self.centralwidget)
172.          self.line4.setObjectName("line4")
173.          self.formLayout_3.setWidget(2, QtWidgets.QFormLayout.FieldRole,
    self.line4)
174.          self.pushButton_3 = QtWidgets.QPushButton(self.centralwidget)
175.          self.pushButton_3.setEnabled(True)
176.          sizePolicy = QtWidgets.QSizePolicy(QtWidgets.QSizePolicy.Minimum,
    QtWidgets.QSizePolicy.Fixed)
177.          sizePolicy.setHorizontalStretch(0)
178.          sizePolicy.setVerticalStretch(0)
179.
    sizePolicy.setHeightForWidth(self.pushButton_3.sizePolicy().hasHeightForWidth(
    ))
180.          self.pushButton_3.setSizePolicy(sizePolicy)
181.          font = QtGui.QFont()
182.          font.setFamily("Arial")
183.          font.setPointSize(10)
184.          font.setBold(True)
185.          font.setWeight(75)
186.          self.pushButton_3.setFont(font)
187.          self.pushButton_3.setIconSize(QtCore.QSize(16, 49))
188.          self.pushButton_3.setObjectName("pushButton_3")
189.          self.formLayout_3.setWidget(3, QtWidgets.QFormLayout.FieldRole,
    self.pushButton_3)
190.
191.          #calling chkMem funcation
192.          self.pushButton_3.clicked.connect(self.chkMem)
193.
194.          self.pushButton_4 = QtWidgets.QPushButton(self.centralwidget)
195.          self.pushButton_4.setEnabled(True)
196.
197.          #calling clear funcation
198.          self.pushButton_4.clicked.connect(self.Clear)
199.
200.          sizePolicy = QtWidgets.QSizePolicy(QtWidgets.QSizePolicy.Minimum,
    QtWidgets.QSizePolicy.Fixed)
201.          sizePolicy.setHorizontalStretch(0)
202.          sizePolicy.setVerticalStretch(0)
203.
    sizePolicy.setHeightForWidth(self.pushButton_4.sizePolicy().hasHeightForWidth(
    ))
204.          self.pushButton_4.setSizePolicy(sizePolicy)
205.          font = QtGui.QFont()
```

```
206.         font.setFamily("Arial")
207.         font.setPointSize(10)
208.         font.setBold(True)
209.         font.setWeight(75)
210.         self.pushButton_4.setFont(font)
211.         self.pushButton_4.setIconSize(QtCore.QSize(16, 49))
212.         self.pushButton_4.setObjectName("pushButton_4")
213.         self.formLayout_3.setWidget(4, QtWidgets.QFormLayout.FieldRole,
    self.pushButton_4)
214.         self.horizontalLayout_3.addLayout(self.formLayout_3)
215.         self.verticalLayout_2.addLayout(self.horizontalLayout_3)
216.         self.line_3 = QtWidgets.QFrame(self.centralwidget)
217.         self.line_3.setFrameShape(QtWidgets.QFrame.HLine)
218.         self.line_3.setFrameShadow(QtWidgets.QFrame.Sunken)
219.         self.line_3.setObjectName("line_3")
220.         self.verticalLayout_2.addWidget(self.line_3)
221.         MainWindow.setCentralWidget(self.centralwidget)
222.         self.statusbar = QtWidgets.QStatusBar(MainWindow)
223.         self.statusbar.setObjectName("statusbar")
224.         MainWindow.setStatusBar(self.statusbar)
225.         self.menubar = QtWidgets.QMenuBar(MainWindow)
226.         self.menubar.setGeometry(QtCore.QRect(0, 0, 621, 21))
227.         self.menubar.setObjectName("menubar")
228.         MainWindow.setMenuBar(self.menubar)
229.         self.actionNew_Record = QtWidgets.QAction(MainWindow)
230.         self.actionNew_Record.setObjectName("actionNew_Record")
231.         self.actionOpen_Record = QtWidgets.QAction(MainWindow)
232.         self.actionOpen_Record.setObjectName("actionOpen_Record")
233.
234.         self.retranslateUi(MainWindow)
235.         self.pushButton_4.clicked.connect(self.line1.clear)
236.         self.pushButton_4.clicked.connect(self.line2.clear)
237.         self.pushButton_4.clicked.connect(self.line3.clear)
238.         self.pushButton_4.clicked.connect(self.line4.clear)
239.         QtCore.QMetaObject.connectSlotsByName(MainWindow)
240.
241.     def retranslateUi(self, MainWindow):
242.         _translate = QtCore.QCoreApplication.translate
243.         MainWindow.setWindowTitle(_translate("MainWindow", "Water Efficiency
    Calculator"))
244.         self.label_10.setText(_translate("MainWindow", "Result"))
245.         self.label_5.setText(_translate("MainWindow", "To check whether Tap
    water is efficient for drinking or not"))
246.         self.label.setText(_translate("MainWindow", "Enter the TDS of Tap
    Water :"))
247.         self.pushButton.setText(_translate("MainWindow", "Calculate "))
248.         self.label_6.setText(_translate("MainWindow", "To check wether RO
    water purifiers is working efficiently or not"))
249.         self.label_2.setText(_translate("MainWindow", "Enter the TDS of RO
    Water : "))
250.         self.pushButton_2.setText(_translate("MainWindow", "Calculate "))
251.         self.label_7.setText(_translate("MainWindow", "To check wether to
    replace the  Membrane of RO water purifiers or not"))
252.         self.label_9.setText(_translate("MainWindow", "Water TDS IN:"))
253.         self.label_8.setText(_translate("MainWindow", "Water TDS Out:"))
```

```
254.         self.pushButton_3.setText(_translate("MainWindow", "Calculate"))
255.         self.pushButton_4.setText(_translate("MainWindow", "Clear All"))
256.         self.actionNew_Record.setText(_translate("MainWindow", "New
   Record"))
257.         self.actionOpen_Record.setText(_translate("MainWindow", "Open
   Record"))
258.
259.     #Tap water function
260.     def chkTap(self):
261.
262.         data=self.line1.text()
263.
264.         if len(data)==0:
265.             ui.label_10.setText("Please enter the Data!")
266.         elif float(data)<=250:
267.             ui.label_10.setText("Excellent!  RO Water Purifier is not
   Recommended for you")
268.         elif float(data)>250 and float(data)<=300:
269.             ui.label_10.setText("Good!  UV or UF Water Purifier is
   Recommended for you")
270.         elif float(data)>300 and float(data)<=600:
271.             ui.label_10.setText("Fair!  Reverse Osmosis(RO) Water Purifier
   is Required for you")
272.         elif float(data)>600 and float(data)<=1200:
273.             ui.label_10.setText("Poor!  Reverse Osmosis(RO) Water Purifier
   is Mandatory for you")
274.         else :
275.             ui.label_10.setText("Unacceptable!  You can't drink Poisons")
276.
277.     #RO water function
278.
279.     def chkRo(self):
280.         data=self.line2.text()
281.
282.         if len(data)==0:
283.             ui.label_10.setText("Please enter the Data!")
284.
285.         elif float(data)<=50:
286.             ui.label_10.setText("""This is a totally unacceptable level
   because water with such
287. a low proportion of TDS does not contain the requisite minerals.""")
288.
289.         elif float(data)>50 and float(data)<=79:
290.             ui.label_10.setText("""This is an acceptable level; however, TDS
   levels in the range of
291. 80 to 150 is preferable.""")
292.
293.         elif float(data)>=80 and float(data)<=150:
294.             ui.label_10.setText("""TDS levels in the range of 80 to 150 is
   preferable.""")
295.
296.         elif float(data)>150 and float(data)<=250:
297.             ui.label_10.setText("""As far as cardiovascular health is
   concerned, this level of TDS is the
298. healthiest.""")
```

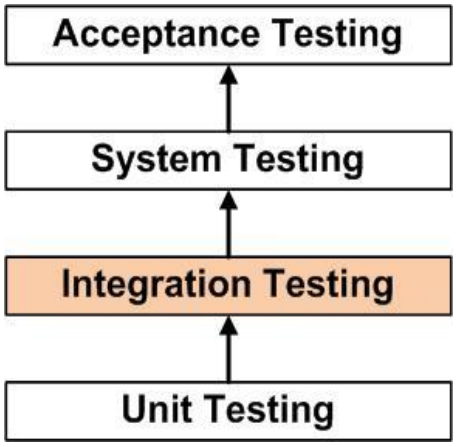
```
299.
300.         elif float(data)>250 and float(data)<=350:
301.             ui.label_10.setText("""TDS in this range is acceptable. Many
    places in India have this level of TDS.""")
302.
303.         elif float(data)>350 and float(data)<=500:
304.             ui.label_10.setText("""Any level below 500ppm to 350ppm is
    fairly acceptable for drinking.""")
305.         else :
306.             ui.label_10.setText("""Your RO Water Purifier is not working
    efficiently try to
307. replace all the RO's Internal and External filters""")
308.     #Check Membrane water Function
309.     def chkMem(self):
310.         dat1=self.line3.text()
311.         dat2=self.line4.text()
312.         if len(dat1)==0 or len(dat2)==0:
313.             ui.label_10.setText("Please enter both of the value!")
314.         elif len(dat1)!=0 and len(dat2)!=0:
315.             mem=((float(dat1)-float(dat2))/float(dat1))*100
316.             if mem<50:
317.                 ui.label_10.setText("RO's Water Purifier Membrane Efficiency
    is " +str(round(mem,1))+" %"+"""
318. Please replace the Membrane""")
319.             else:
320.                 ui.label_10.setText("RO's Water Purifier Membrane Efficiency
    is " +str(round(mem,1))+" %")
321.
322.     def Clear(self):
323.         ui.label_10.setText("Result")
324.
325.
326.
327. if __name__ == "__main__":
328.     import sys
329.     app = QtWidgets.QApplication(sys.argv)
330.     MainWindow = QtWidgets.QMainWindow()
331.     ui = Ui_MainWindow()
332.     ui.setupUi(MainWindow)
333.     MainWindow.show()
334.     sys.exit(app.exec_())
335.
```

7. Testing

System Testing

The main objective of testing is to find the bugs within the system. Testing is a lengthy and costly phase of system development. The system must be tested whether the user requirements have been full filled or not? whether the expected outputs of the system are the same as the actual outputs or not?

It takes different aspect in consideration like checking, the functionality of different modules in the system the, dependency of each module, the overall interoperability of subunits. Initially, we start testing process from unit testing, then we integrate the units and performing integration testing later on functional testing at the end testing process is going to end with overall system testing.



Definition by ISTQB (International Software Testing Qualifications Board)

There are different methodologies of testing a work product and types of the testing process on work product.

Unit testing

In unit testing, the testing is done by the developer itself rather than tester because an individual component or module of the system/software will be tested. It will perform basic tests on the small parts of the system whether its functions are accurate or not. That is why it is done by the developer he produces the system unit by unit.

Integration testing

After each integration of unit, the system should be tested to verify the system is working as one piece or not. The objective of this test is to find out the fault in communication or interaction among different modules of the system.

Functional testing

In the functional testing phase, the functional requirements of the are going to check. In this part testing, we work on test design. We are going to design test cases and test suits. Like:

Functional testing is determined on the basis of the below items:

Valid Input : classes for the valid must be defined and accepted.

Invalid Input : classes for the invalid must be defined and rejected.

Functions : functions must be well defined and exercised.

Output : classes of application outputs identified must be exercised.

Systems/Procedures : interfacing procedures or systems must be called.

System Test

In this phase of testing the tester ensures the entire system comprises of different parts or modules meet the requirements. It tests the complete functionality of the system to ensure known and predictable outputs.

Acceptance Testing

It is the last stage of testing which is done by the clients or the user of the system. It verifies whether the business requirements are fulfilled or not. The clients will accept the system or software only when all the functions and features are working as it was expected. The clients will accept the system or software only when all the functions and features are working as it was expected

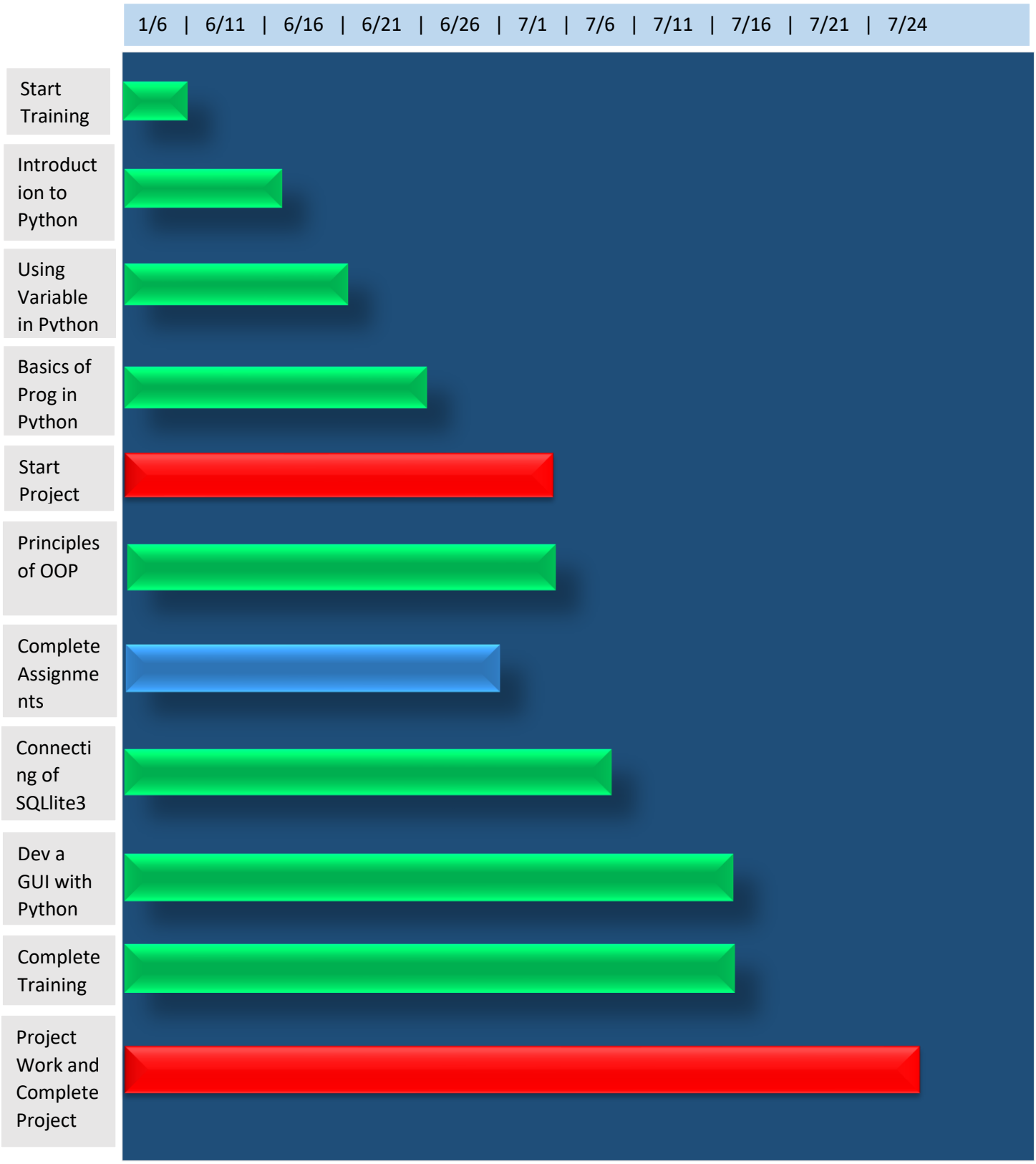
8. Deployment

Software deployment is all of the activities that make a software system available for use. The general deployment process consists of several interrelated activities with possible transitions between them. These activities can occur at the producer side or at the consumer side or both. Because every software system is unique, the precise processes or procedures within each activity can hardly be defined. Therefore, "deployment" should be interpreted as a general process that has to be customized according to specific requirements or characteristics.

In this phase we have made available the Water Efficiency Calculator to use within all versions of Microsoft Windows like Windows 7, 8 and Windows 10.

It is working as we expected according to the user requirements.

9. Gantt chart



10.Project Legacy

Basically, this training was very useful to me I have learn so many things from Programing with Python training.

- I have learned how to install Python, distinguish between important data types and use basic features of the Python interpreter, IDLE.
- I have learned about numeric, string, sequence and dictionary data types and relevant operations while practicing Python syntax.
- I have learned how to write programs using conditionals, loops, iterators and generators, functions and modules and packages.
- I have also learned about the important features of OOP while using classes and objects: two main aspects of the OOP paradigm.
- I have learned about relational databases while learning how to store and retrieve data from an SQLite database through Python.
- I've learned how to install PyQt5 toolkit, Qt Designer and create a graphical user interface using common widgets and menu systems.
- I've learned about various resources to extend your learning for the Python programming language.

11. Bibliography

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