Indian Institute of Information Technology

Computer Science and Engineering

Vocabulary Tutor

(Course Code : CS 200)

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Abstract

The main aim of this project is to develop English Vocabulary of users. This project allows the user to set timer and after specified time a popup will appear at desktop notification showing an English word and its meaning. If the timer is set to one hour then after every one hour an English word and the meaning of the word will pop-up at desktop notification. In this way while working on Desktop or laptops one can open this application and set the timer so that they can learn new words and their meaning .

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1.1 Introduction

English language plays an essential role in our lives as it helps in communication. It is the main language for studying any subject all over the world. English is important for students as it broadens their minds, develops emotional skills, improve the quality of life by providing job oppurtunities.

Since comprehension is the ultimate goal of reading, the importance of vocabulary development cannot be overestimated.

Why vocabulary is important?

* Learners can express themselves better.

* Knowing more words allows a learner to choose their words more precisely and so become more effective and accurate when communicating with others.

* It empowers learners academically.

* Students need vocabulary instruction that allows them to build rich representation of words.

So i developed an application Vocabulary Tutor which is very useful to improve vocabulary skills. In this digital world many people use laptops, desktops, tabs, etc. So while they are working on the computer they can switch to this application and set the timer so that after every specified time the application pops up a notification with an English word and its meaning.

In this way one can learn new words and their meanings while they are working on computers, laptops, etc.

1.2 Problem Statement

Develop an application which helps in learning new vocabulary.

1.3 Software model

To develop this application i come after <u>Iterative Model</u> which develops a system through **building small portions** of all the features. This helps to meet initial scope quickly and release it for feedback.

In the iterative model, you start off by implementing a small set of the software requirements. These are then **enhanced iteratively** in the evolving versions until the system is completed. This process model starts with part of the software, which is then implemented and reviewed to identify further requirements.

Like the incremental model, the iterative model allows you to see the results at the early stages of development. This makes it easy to identify and **fix any functional or design flaws.** It also makes it easier to manage risk and change requirements.
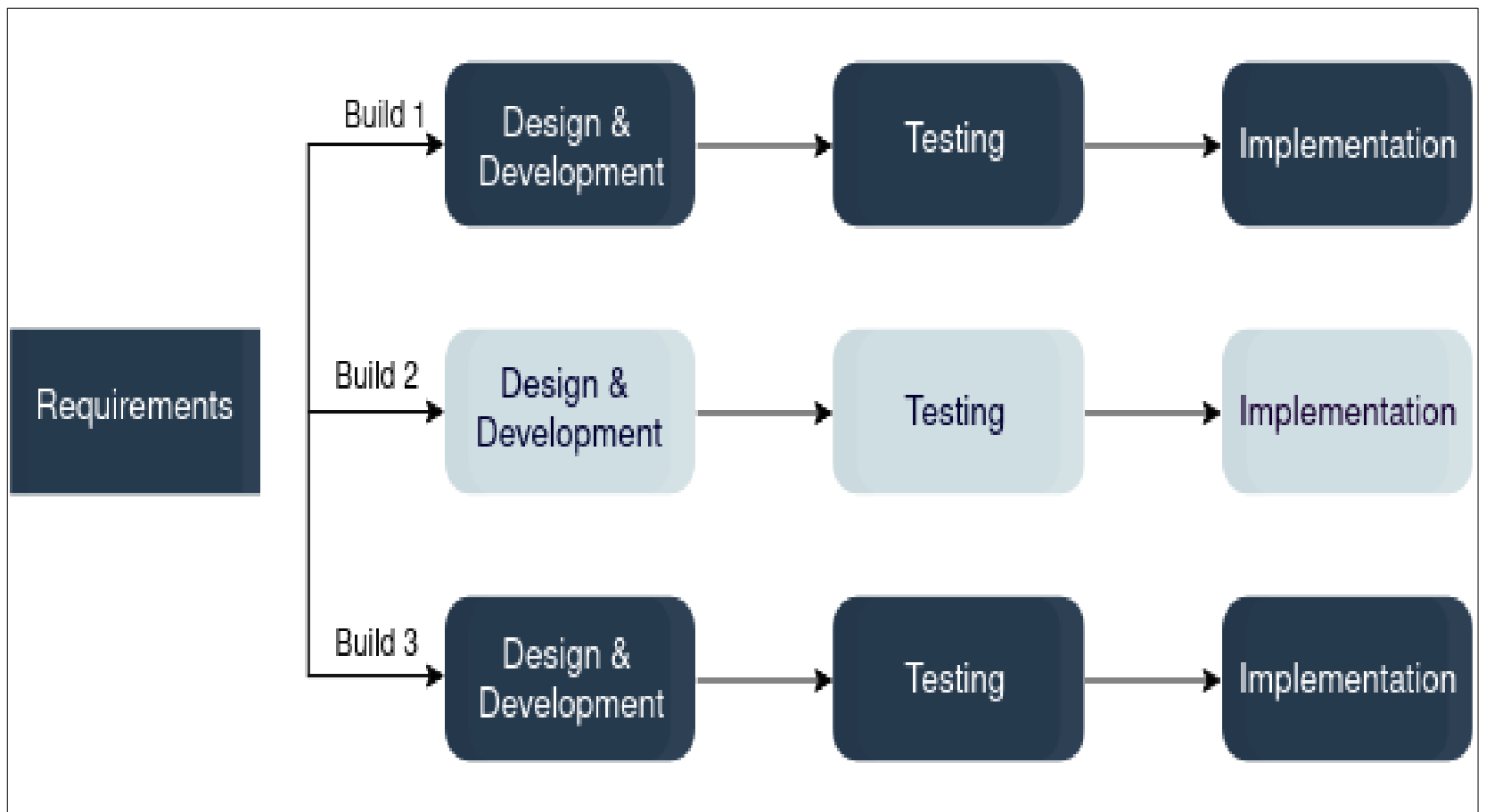
Iterative Model

1.4 System/Software used

I used python and MS Excel to develop this project and in further the python libraries made my work easier.

Required installation Modules

- ➢ tkinter
- ➢ pyttsx3
- ➢ plyer
- ➢ openpyxl
- ➢ inflect
- ➢ pyqt5

1.5 Road Map

- ✔ Listing out all requirements.
- ✔ Installing required modules.
- ✔ Collecting the Vocabulary Data.
- ✔ Collecting icon files.
- ✔ Designing console.
- ✔ Setting up voice modules.
- ✔ Linking Excel with python.
- ✔ Code implementation.
- ✔ System Testing.
- ✔ Error detection and correction.
- ✔ Final testing.

✔ Table 1.1 : <u>Gantt Chart for Project Schedule</u>

Start Date — 28/03/2021   **Submission Date - 29/05/2021**

Task	March	April	May
Studying the basic requirements of the project	🟩	🟩	
System design		🟩	🟩
Implementation		🟩	🟩
Error correction and documentation		🟩	🟩

Chapter 2

## 2.1 Motivation behind selection of the project

The main motivation for selecting this project is, it is particularly useful to develop our Vocabulary skills. As we know English is an important language to communicate with the people from differnt states, countries, etc., it is important to use good vocabulary to

express ourselves. And in the busy life many people dont get time

to focus on development of their vocabulary. So i developed this application which is helpful to learn new words everyday.

Now a days Many of us work on desktop, laptops , etc. so while working on them we can switch to this app and can set the timer .

And after every specified time it will notify with an english word and its meaning . In this way one can learn new words every day and can implement them while communicating with others which will be very helpful.

2.2 Analysis

> In the first phase of analysis i divided the task into small portions.

> Then each portion is designed and tested and then implemented.

> I started designing the console first and then tested.

> I figured out some errors and then fixed the errors and implemented the design.

> Then implemented the voice modules and tested as if they are working fine.

> Then designed the Excel sheet for storing the words and meanings and on testing duplicate words are removed.

> Then designed the notification portion which is used to display the words and meanings as desktop notification. Then tested and implemented.

> Then added the icon to the notifier and tested, implemented.

> Finally i designed the main code which links all the above portions together.

> Then tested and fixed the errors and implemented.
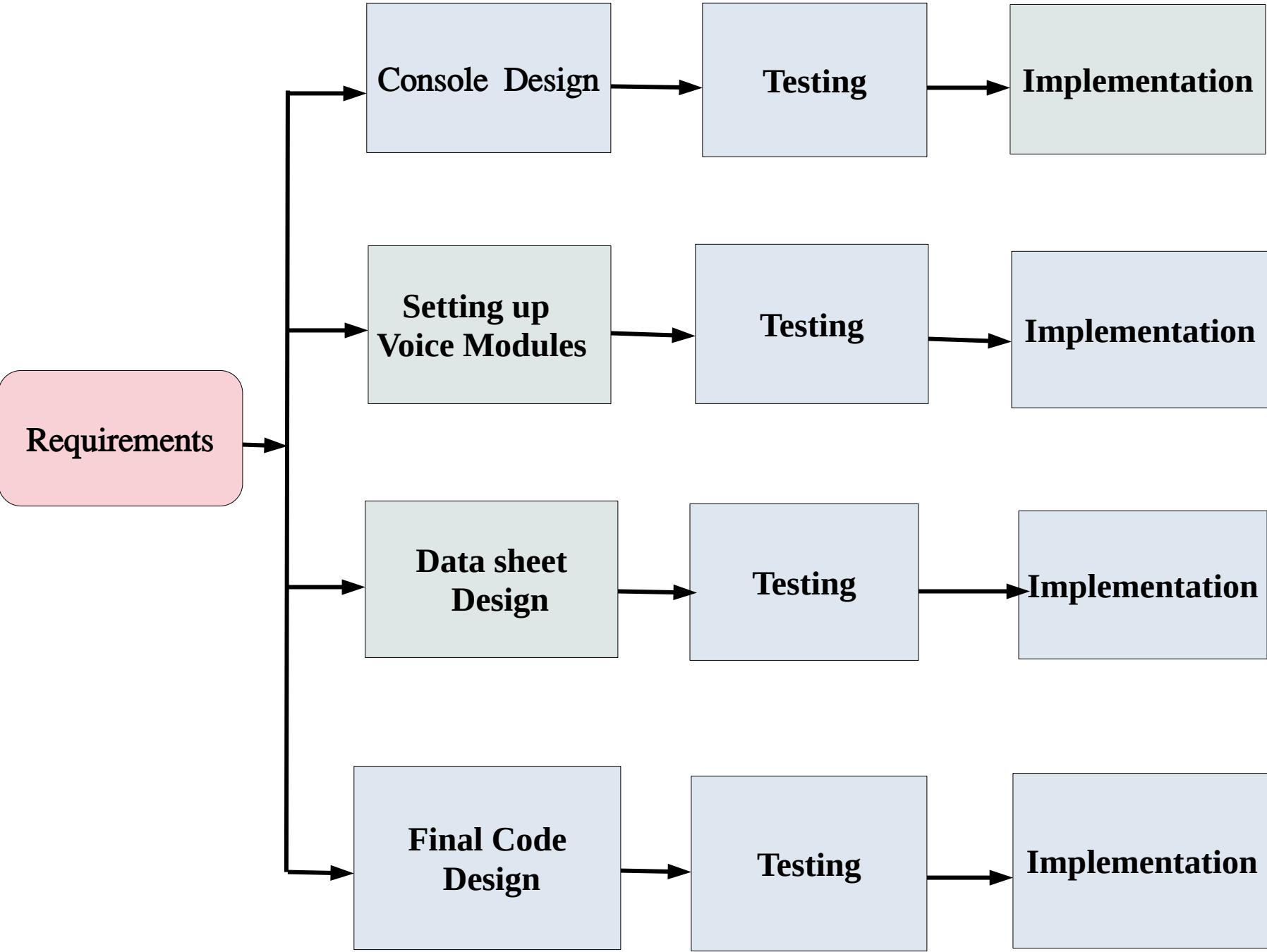
Phase - 1 Analysis

Chapter 3

3.1 System Design

➢ To start with the console was designed first which takes two inputs from user the name and timer.

➢ Submit and exit buttons are added to console to accept data and to stop the process or to exit the application.

➢ A function is then designed to hold the parameters which are passed from the console.

➢ A datasheet is then designed to hold words and meanings.

➢ The function then access to the data sheet and takes one word and its meaning.

➢ Voice modules are then added which takes the user name and pronounce that during notifaction popup.

➢ Then multithreading is implemented to handle waiting process .

➢ Icon file is also added which will be displayed during notification time.

➢ To convert this code file to an executable i installed pyinstaller and added all modules to that.

➢ The data flow that are mentioned above are shown in the below diagram.

Vocabulary Tutor
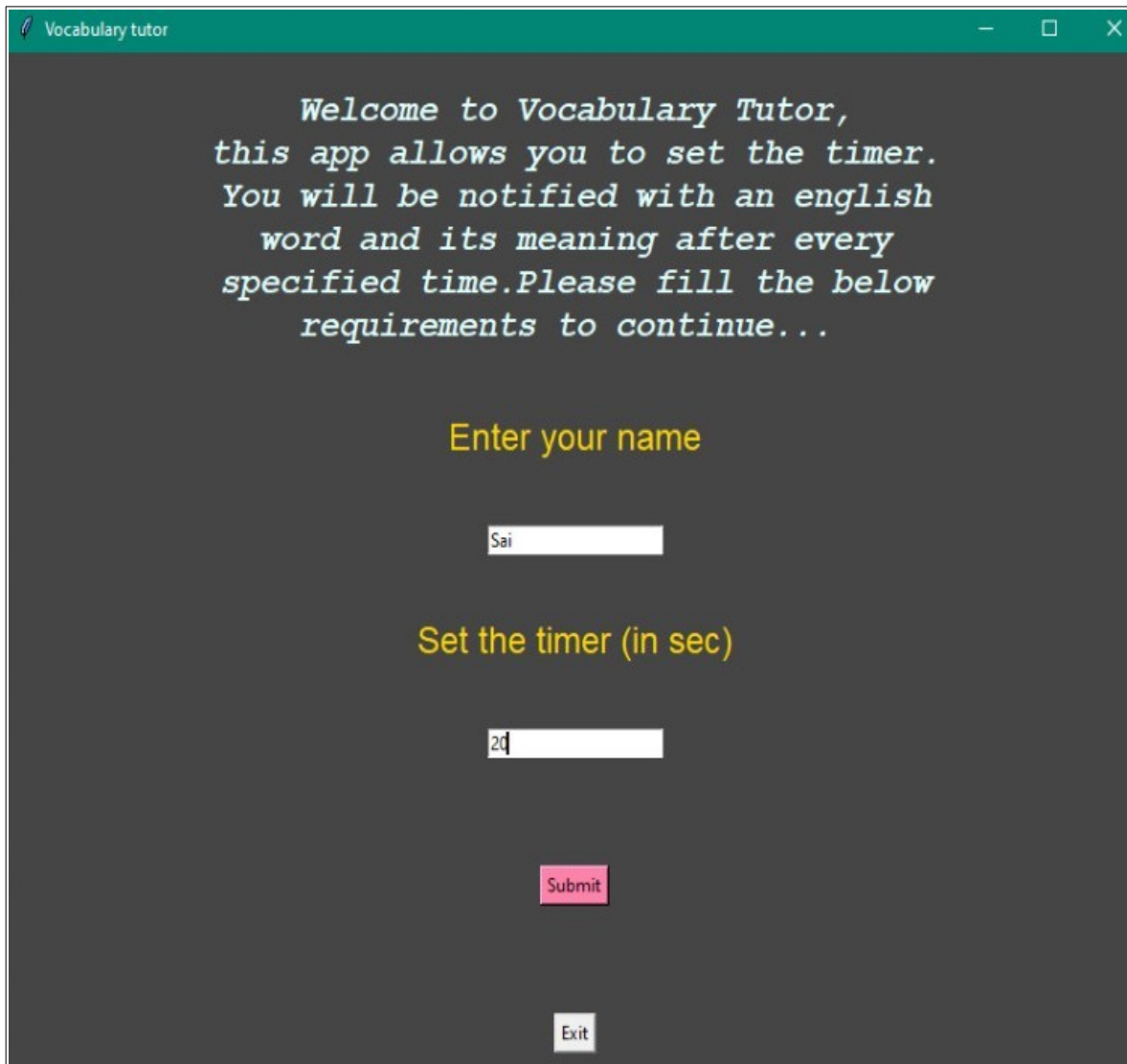
Data flow diagram: Level 2

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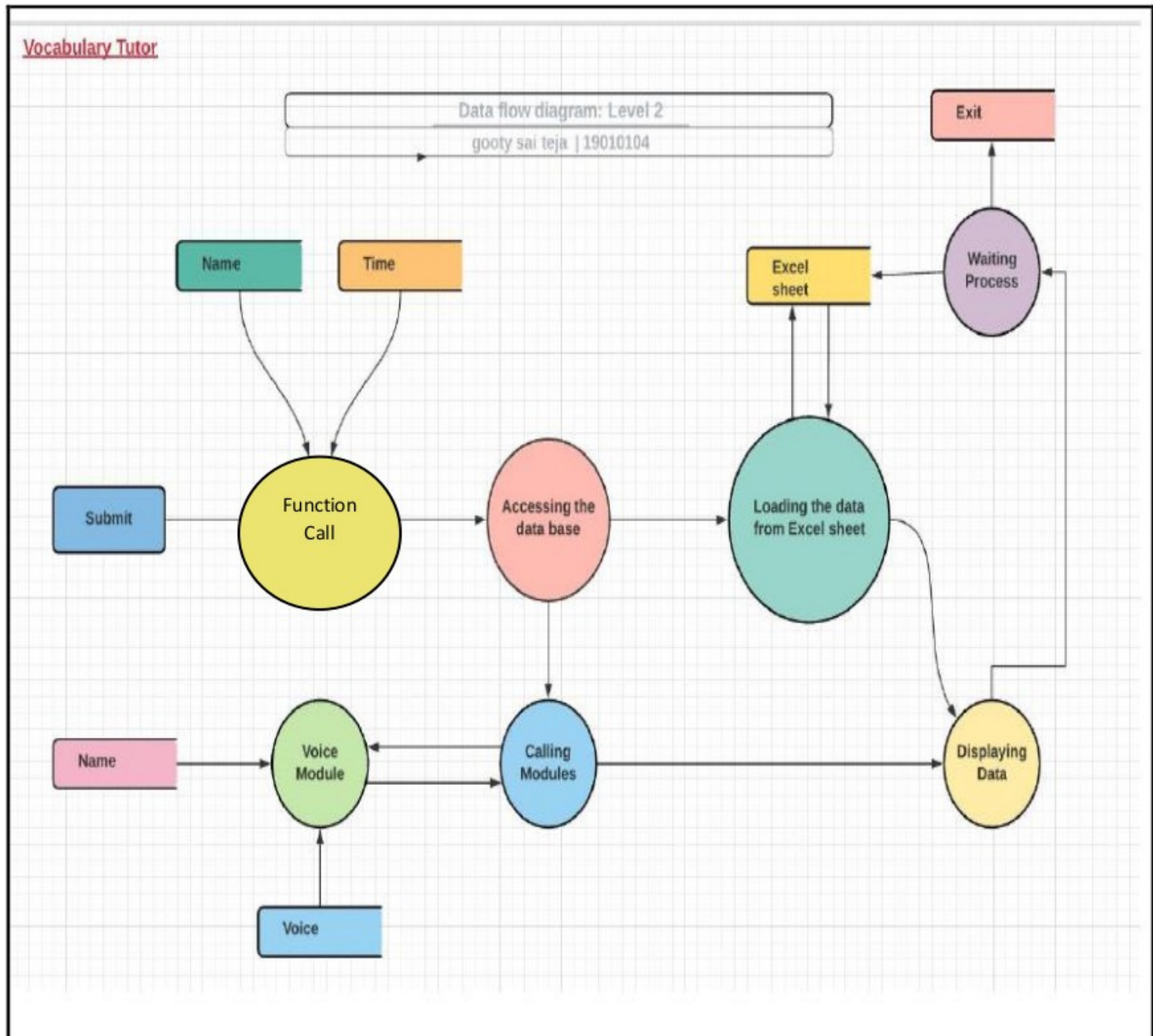
3.2 Control flow diagram

Chapter 4

4.1 Implementation

When the executable is run on any system it displays a gui console which takes two inputs name and timer as shown below

After clicking submit button it will display a notification with an english word and its meaning then it will wait for specified time and then again notification will be displayed with another word and its meaning as shown below.

4.2 Coding part

Modules

import pyttsx3

from plyer import notification

import time

import openpyxl

import inflect

from tkinter import *

from PyQt5.QtCore import QObject, QThread, pyqtSignal

import threading

Console

```python
root = Tk()

root.title('Vocabulary tutor')
root.geometry("700x700")

root.configure(background='gray27')

def submit():

    background = threading.Thread(target=values,args=(my_box1.get(),int(my_box2.get()),))

    background.start()
```

```python
def destroy() :
    root.destroy()
    quit()

read="""Welcome to Vocabulary Tutor, this app allows you to set the timer.
You will be notified with an English word and its meaning after every
specified time. Please fill the below requirements to continue... """

my_label0 = Label(root, text=read, font=("Courier",18,"bold
italic"),fg="light cyan",bg="gray27")

my_label0.pack(pady=20)
my_label1 = Label(root, text="Enter your name",
font=("Helvetica",18),fg="gold",bg="gray27")

my_label1.pack(pady=20)

my_box1 = Entry(root)

my_box1.pack(pady=20)

my_label = Label(root, text="Set the timer (in sec)", font=("Times
bold",18),fg = "gold",bg="gray27")

my_label.pack(pady=20)

my_box2 = Entry(root) my_box2.pack(pady=20)
```

```python
my_button = Button(root,text="Submit",fg='gray1', bg='PaleVioletRed1'

,  activebackground='lawn green',command=submit)my_button.pack(pady=50)

exit_button= Button(root, text="Exit", command=destroy)

exit_button.pack(pady=20)
```

Main Code:

```python
p=inflect.engine() file_location="list.xlsx"

workbook=openpyxl.load_workbook(file_location)

sheet=workbook.active

def notify(title,message): notification.notify(title=title,message=

message,app_icon="icon3.ico",timeout=15,)

engine = pyttsx3.init()

voices = engine.getProperty('voices')

engine.setProperty('voice',voices[1].id)

engine.setProperty("rate",135) engine.setProperty("volume",1.0)

f = True

def threadWork(timer): global f
```

```python
    f = False #print("Sleeping")time.sleep(timer)

        # print("waked up") f = True


def values(n,t):

    name=n
    timer=t
    value1 = 1
    i=1


    while True:

                global f

                if f:

                    value2=1 call_obj1=sheet.cell(row=value1,c

                olumn=value2)

                call_obj2=sheet.cell(row=value1, column=value2+1)

                msg="_WORD_: "+call_obj1.value+"\n\n__MEANING_

                _:"+call_obj2.value sheet.delete_rows(value1)

                workbook.save('list.xlsx') text="hellow" + name + f"

                here is your {p.ordinal(i)} word "
```

```python
        engine.say(text) notify("VOCABULARY",msg)

        engine.runAndWait()

        value1=value1+1

        i=i+1

        #time.sleep(timer) #New Thread

        newThread =

         threading.Thread(target=threadWo rk, args=(timer,))

        newThread.start()

        #Started

        newThread.join()


    root.mainloop()
```

4.3 Testing

In the phase 1 of analysis i tested small portions individually now the code will be tested as a whole.

4.3.1 Errors

1) The first error i found was repeated words are printing in notification.

2) When i click on exit button it is showing app not responding.

3) Extra word printing after clicking on exit button.

4) .exe file showing failed to execute script.

4.3.2 Comparative analysis

In phase 2 of analysis Errors are fixed.

1) Repeated words error was fixed by deleting the data from excel sheet as soon as it was displayed in the notification.

2) Not responding error was fixed using multithreading.

3) Third error was fixed using PyQt5.

4) Editing the .spec file fixed the last error.

Chapter 5

5.1 Conclusion

The Vocabulary Tutor application works as a remainder which displays a new word and its meaning after every specified time by the user.

As many people now a days are using laptops, mobile phones, etc., This application will be especially useful in Developing the vocabulary of

the users.

5.2 Future Work

As this application was made only for Desktops, laptops will try to develop the similar application which will be available for android users as well.

And also will try to add new features and better vocabulary as well.

References

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