 **AMRITA**

**VIDYALAYAM**

[COMPUTER PROJECT]



NAME- SUBRATA SARKAR

CLASS- XII

SECTION- A

ROLL NO.- 38

**In partial fulfillment of the requirements for the award AISSCE(XI)**

**CERTIFICATE**

** AMRITA**

**VIDYALAYAM**

**Name** SUBRATA SARKAR **Register No**……………….

**Year** 2016-2017 **Class** XII – A – 38

**School** AMRITA VIDYALAYAM

**Subject** COMPUTER SCIENCE

***This is certified to be the bonafide work of the student in this laboratory***

............................ .…….……………………………….. ***Principal Professor/Teacher in charge***

Submitted for the practical examination held in……………………………………... on……………………………………………at…………………………………….

……………………………

...………………………….

Examiners

**CONTENT**

|  |  |  |
| --- | --- | --- |
| **Sl.No.** | **TOPIC** | **PAGE NO.** |
| **1>** | Abstract |  |
| **2>** | Acknowledgement |  |
| **3>**  **A)**  **B)**  **C)**  **D)**  **E)**  **F)**  **G)** | Main Report   * Introduction * Objective * Scope * Limitation * Features * Platform * Theoretical Background |  |
| **4>** | Software and Hardware requirement |  |
| **5>** | Literature survey |  |
| **6>** | Input Output screen design |  |
| **7>** | Source Code of the project(summary) |  |
| **8>** | Future Application |  |
| **9>** | Bibliography |  |

**PREFACE**

This project has provided us the opportunity to show the potential of Python. This project has been developed on Python 2.7.9. We are very thankful to our computer sir and the board to provide such an interesting project to work upon. This project has been made in such a way so that even beginners in python can even understand it. The project has been illustrated with screenshots of the program. The interdependency of modules has been illustrated.

**ACKNOWLEDGEMENT**

I Subrata Sarkar of class XII – A, Roll no.:38, wants to acknowledge some precious gems who have contributed greatly in the completion of this project.

First of all I want to thank Mr. Biswajit Dey (our computer science sir) for his able guidance and motivation. Next I want to thanks my group members for helping me. I would also like to thank my parents and friends for giving me advices. Finally, I want to thank the All Mighty God for giving me an opportunity to indulge in such a monumental work.

**MAIN REPORT**

* **Introduction**

Python is an easy to learn yet powerful object oriented very high level programming language. It is a simple language with so many advantages that beginners would learn Python faster than other languages. It uses dynamic type casting which makes it easier for learners to learn. It has high degree of object orientation and refers almost to everything as an object.

This software has been made as a project. The software has been developed in graphical version to make its use easier for the users.

Hope the software helps the users in writing in hindi on PC and makes their everyday work easier .

* **Objective**

The software has been developed to help the everyday users of PC to write in hindi and perform word processing with it, as software of this kind are hard to get in the market free of cost.This software has been made keeping in mind to provide generally needed features for word processing.

* **Scope**

This software has huge scope due to the limited free hindi word processing software which are available free of cost that can be used on PC. The phonetic typepad could be used in many other applications as an input medium. The text-to-speech speech-to-text feature inspire others to develop it more. Also hindi spelling check has been provided.

* **Limitation**

The software has been equipped with as many features as possible but still some limitations remain, as we know even sky is not the limit. Some limitations which could not be addressed for shortage of time include option for changing foreground colour of text and background colour, hyperlinking option, buletting option, indentation option, a better language model for speech recognition and human like voice for speech to text. The users are welcome to send in suggestions for improving the software.

* **Features**

The main aim of our project is to develop a code to detect specifically whether a person

is having myocardial ischemia or not with the help of required no. of ECG signal dataset without

having to go to the clinic.

Any person anywhere in the world can use this whenever needed with a code executable machine

in hand (Laptop,desktop,ph..etc).So, anyone can use it easily without much knowledge.

A small or a minor change in the dataset won’t largely affect the code performance as it is deeply

trained by the use of convolutional neural network.

It is platform independent that it can run on any system and with that we need python 3.6.5

software only.

* **Platform**

As we know Python is almost platform independent, so any platform or system able to run Python can run the software.

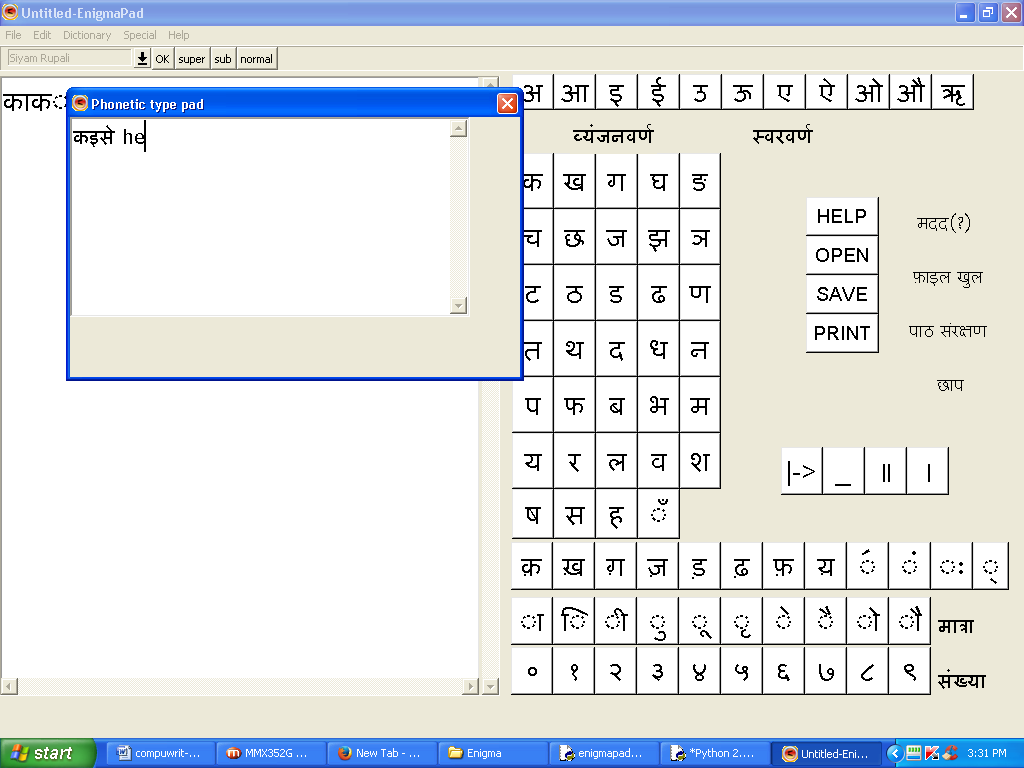
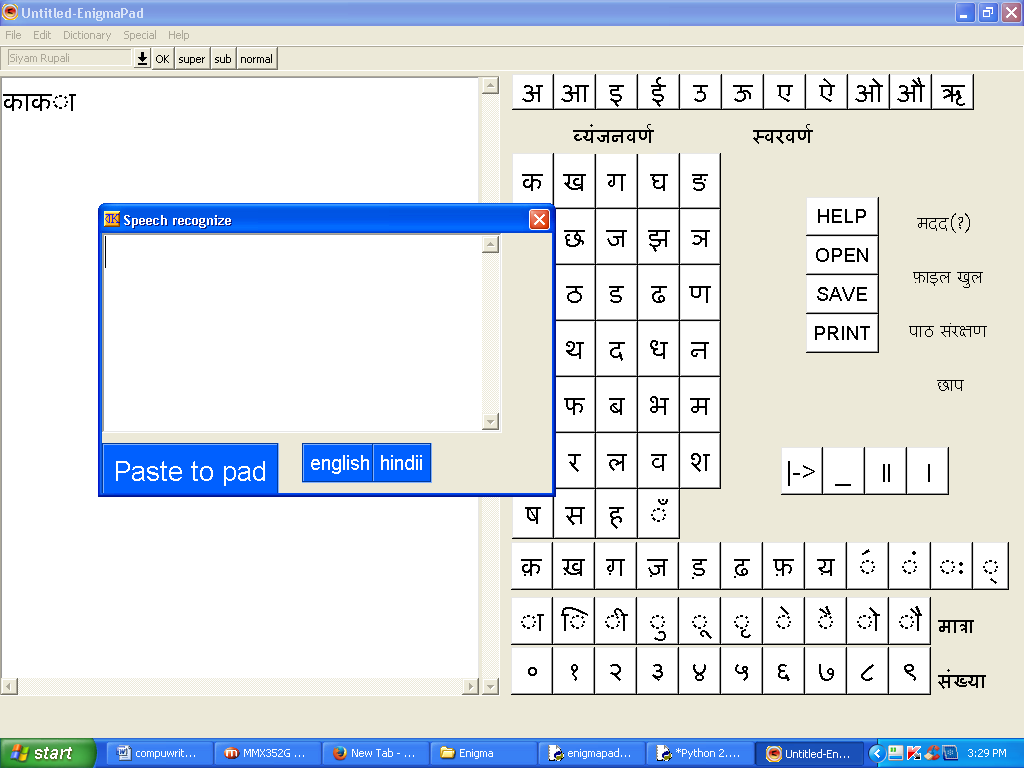
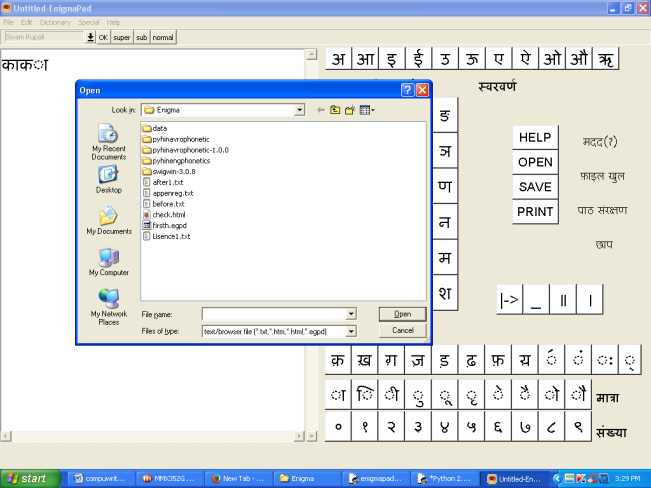
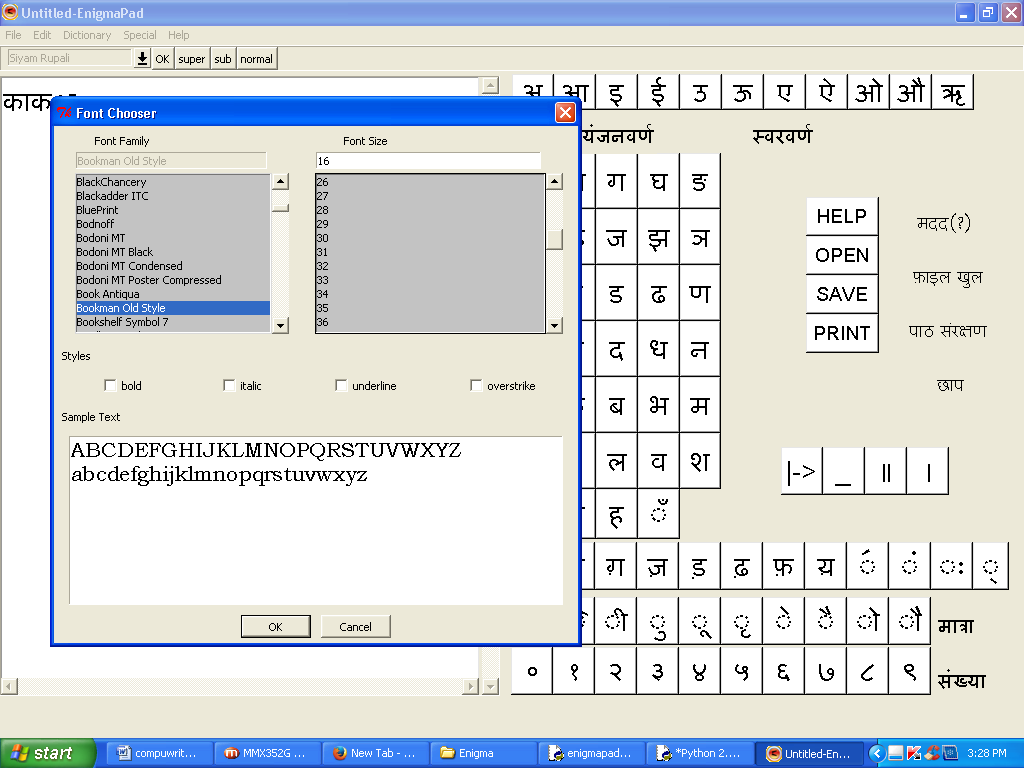
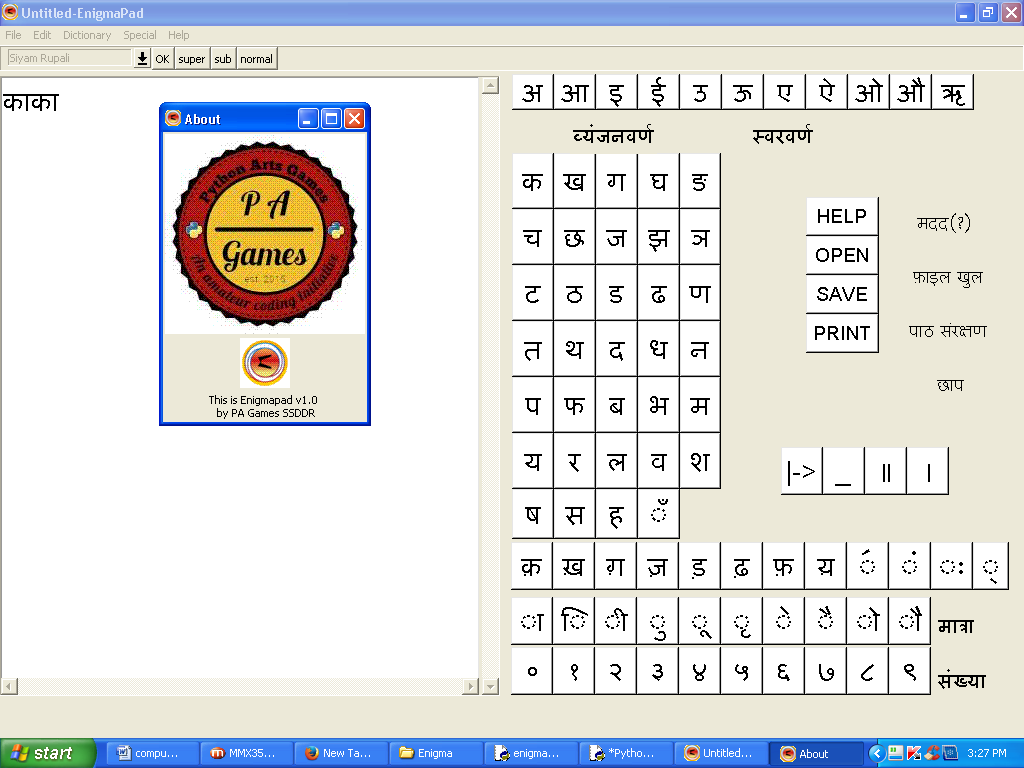
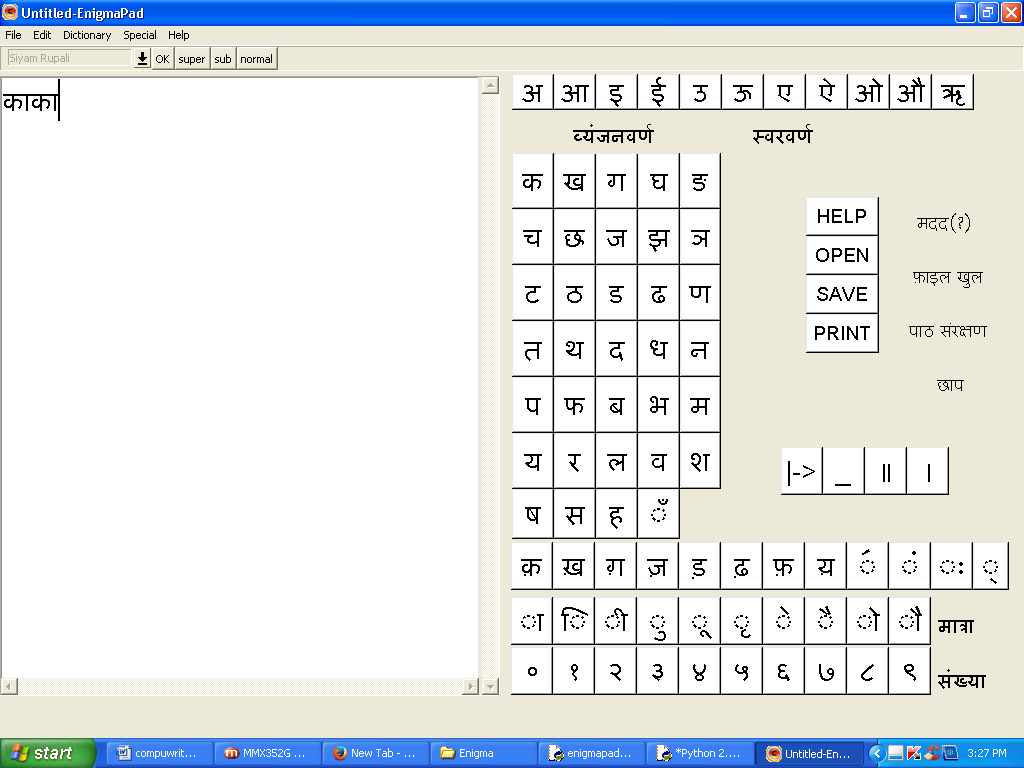
* **Theoretical Background**

The software upon first run checks the file ‘appenreg.txt’ then writes to the system registry the required information installs ‘vcredist\_x86.exe’, ‘VCForPython27 .msi’ and fonts ‘Siyamrupali.ttf’ , ‘Amarbn\_\_.ttf’. Then aks whether the user wants to take part in the software survey .This gives the sense of using a real software..

**Software and Hardwire requirement**

* Any Operating system except linux with upgraded version of python 3.6.5
* software.
* Tensorflow -gpu -: 1.2.3-It is an open source artificial intelligence library, using data flow
* graphs to build models. It allows developers to create large-scale neural networks with many
* layers. TensorFlow is mainly used for: Classification, Perception, Understanding,
* Discovering, Prediction and Creation.
* Keras 2.3.1-: Keras is the python Deep learning library. It is an open-source software library
* that provides a Python interface for artificial neural networks. Keras acts as an interface for the
* TensorFlow library.
* Wfdb 3.0.1-: The native Python waveform-database (WFDB) package. A library of tools for reading,
* writing, and processing WFDB signals and annotations.
* Data requirements: We used the European-st-t database which was intended to be used for
* evaluation of algorithms for analysis of ST and T- wave changes. This database consists of 90
* annotated excerpts of ambulatory ECG recordings from 79 subjects.
* And we as a group of 4 have used 4 databases (e0103,10104,e0105 and e0108) respectively i.e. the
* ECG record of Four patient as our training and test dataset for the execution of the code.
* In each data set we run a code where the dataset is divided into segments having 240 data point
* each(a typical heart rate has 70 to 75 beats per minute, i.e. each cardiac cycle takes about 0.8
* seconds to complete the cycle).

**INPUT OUTPUT SCREEN DESIGN**



**SOURCE CODE OF THE PROJECT**

We have created the script gen\_manual\_verdict.py to process european st-t dataset to generate training data for our CNN model. Next we train our model using train\_model.ipynb. The script also generates .hdf5 file so that our model can be used everywhere. Next check\_individual\_inputs.ipynb is used for checking individual records.

**FUTURE APPLICATION**

The project has vast future application. The write in registry feature can be used in other applications. This software could be more developed and can be used for more applications using hindi as a language. Other than that the knowledge of making GUI applications can be used for making various other projects.

**BIBLIOGRAPHY**

Python itself is such a easy to learn language that it motivates any one to learn it. The documents provided with Python are of great help for reference. Apart from this the following websites have proven themselves to be of great help for me. The websites are as follows:

* http://www.tutorialspoint.com
* http://effbot.org
* http://stackoverflow.com
* http://zetcode.com
* http://tkinter.unpythonic.net
* http://pythoncentral.io
* https://docs.python.org