St. Gregorios Senior Secondary School
(Affiliated to C.B.S.E., New Delhi.)
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COMPUTER PROJECT FILE
[2022-23]

Name : Vaibhav Kumar
Class : 12 A1
Topic : Text Editor With Python
Roll No. : 12125
Submitted To : Mrs. Sandhya Mirchandani [PGT(CS)]

CERTIFICATE

This is to certify that **Vaibhav Kumar** of class 12 A1 has completed this project titled **"Text Editor With Python"** under my guidance as the part of the practical exam of A.I.S.S.C.E. conducted by C.B.S.E.

Principal | Internal Examiner | External Examiner

ACKNOWLEDGEMENT

As a student of class 12 A1, it was my pleasant duty to do a project in **Computer Science** as a part of the course curriculum. In its compliance I choose to work on the project:

"Text Editor With Python"

I received generous help from several persons in the completion of this project. I am deeply indebted to our Principal, Ms. Preeti Mathur and Computer Science Teacher, Mam Sandhya Mirchandani for providing me excellent guidance without which it would not have been possible for me to do this project. I am also thankful to my parents for their care, support and inspiration at every step in the completion of this project.

Vaibhav Kumar

BIO DATA

Name	: Vaibhav Kumar
Class	: 12 A1
Father's Name	: Akash Kumar
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Team Members	: Vaibhav Kumar
	Hrishik Malviya
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Content

INTRODUCTION TO PYTHON

Python is a widely used general-purpose, high level programming language. It was initially designed by Guido van Rossum in 1991 and developed by Python Software Foundation. It was mainly developed for emphasis on code readability, and its syntax allows programmers to express concepts in fewer lines of code.

Python is a programming language that lets you work quickly and integrate systems more efficiently.

There are two major Python Versions - Python 2.x and Python 3.x . Both are quite different.

Both Python 2.x and 3.x have continued to be maintained and developed, with periodic release updates for both. As of this writing, the most recent versions available are 2.7.18 and 3.11.1 . However, an official End Of Life date of January 1, 2020 has been established for Python 2, after which time it will no longer be maintained. If you are a newcomer to Python, it is recommended that you focus on Python 3.

Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas, on most platforms. The Python interpreter and the extensive standard library are freely available in source or binary form for all major platforms from the Python web site, ***https://www.python.org/,*** and may be freely distributed. The same site also contains distributions of and pointers to many free third-party Python modules, programs and tools, and additional documentation. The Python interpreter is easily extended with new

functions and data types implemented in C or C++ (or other languages callable from C). Python is also suitable as an extension language for customizable applications. This tutorial introduces the reader informally to the basic concepts and features of the python language and system. It helps to have a Python interpreter handy for hands-on experience, but all examples are self-contained, so the tutorial can be read off-line as well.

For a description of standard objects and modules, see library index. Reference index gives a more formal definition of the language. To write extensions in C or C++, read extending-index and c-api-index. There are also several books covering Python in depth. This tutorial does not attempt to be comprehensive and cover every single feature, or even every commonly used feature. Instead, it introduces many of Python's most noteworthy features, and will give you agood idea of the language's flavor and style. After reading it, you will be able to read and write Python modules and programs, and you will be ready to learn more about the various Python library modules described in library-index.

USES OF PYTHON

It is used for :

- Web development (server-side)
- Software development
- Mathematics
- System scripting

WHAT CAN PYTHON DO?

1. Python can be used on a server to create web application.
2. Python can be used alongside software to create work flows.

WHY PYTHON?

- Python works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc.)
- Python has a simple syntax similar to the English language.
- Python has syntax that allows developers to write programs with fewer lines than some other programming languages.
- Python runs on an interpreter system, meaning that code can be executed assoon as it is written. This means that prototyping can be very quick.
- Python can be treated in a procedural way, an object-orientated way or a functional way.

PROJECT PREREQUISITES:

To build this text editor in python, we willneed the following libraries:

1. Tkinter – To create the GUI.
2. PIL (Python Image Library) – To give the GUI window an icon.
3. OS – To get the path of the file.

The PIL library does not come pre-installed with Python, so we will have to run the following command in the terminal to install it.

FILE STRUCTURE

Here are the steps we will need to execute to build this python project:

1. Importing the libraries.
2. Initializing the GUI window.
3. Defining the functions for every menuoption.
4. Creating and placing the Menu widget onthe top and placing components in them.
5. Setting and placing the Text and Scrollbar widgets.

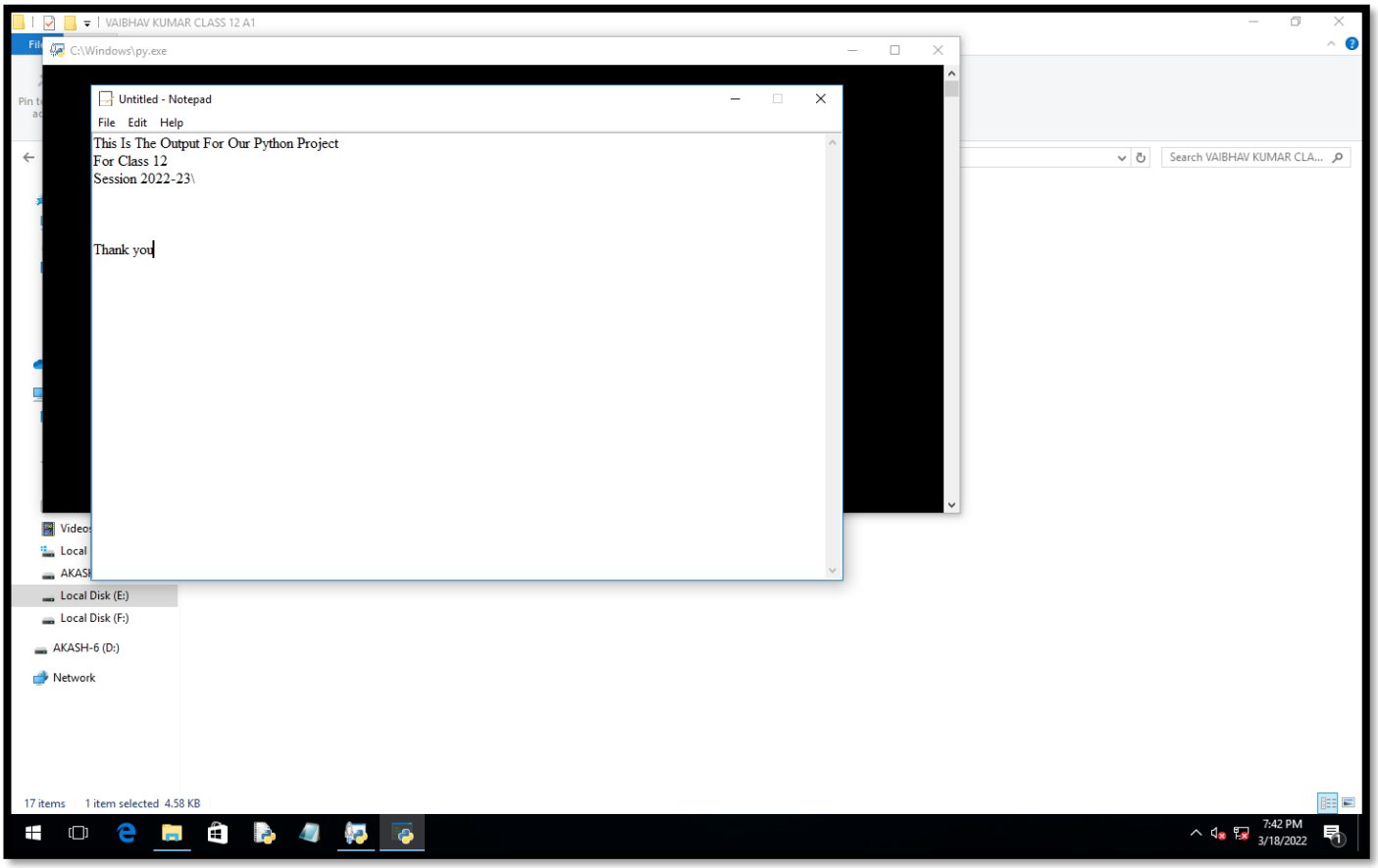
PROGRAM CODE

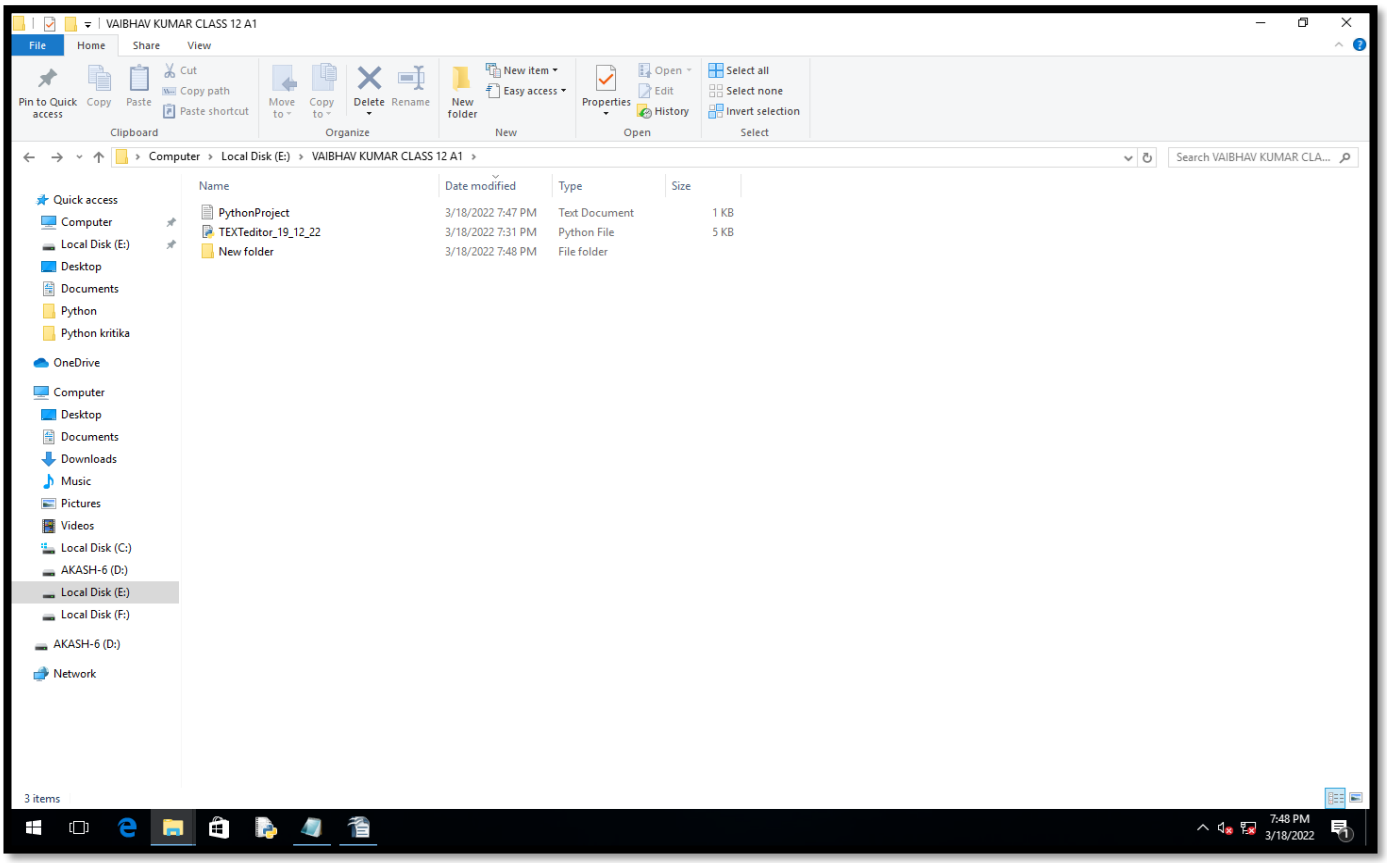
```
"""
Notepad.png source: https://www.iconfinder.com/icons/285631/notepad_icon
"""

fromtkinter import *
importtkinter.filedialog as fd
importtkinter.messagebox as mb

from PIL import Image, ImageTk
importos

# Creating all the functions of all the buttons in the NotePad
defopen_file():
global file
file = fd.askopenfilename(defaultextension='.txt', filetypes=[('All Files',
'*.*'), ("Text File", "*.txt*")])

if file != '':
root.title(f"{os.path.basename(file)}")
text_area.delete(1.0, END)
with open(file, "r") as file_:
text_area.insert(1.0, file_.read())
file_.close()
else:
file = None


defopen_new_file():
root.title("Untitled - Notepad")
text_area.delete(1.0, END)


defsave_file():
global file
if file == '':
file = None
else:
file = open(file, "w")
file.write(text_area.get(1.0, END))
file.close()

if file is None:
file = fd.asksaveasfilename(initialfile='Untitled.txt',
defaultextension='.txt',
filetypes=[("Text File", "*.txt*"), ("Word Document", '*,docx*'), ("PDF",
"*.pdf*")])
else:
file = open(file, "w")
file.write(text_area.get(1.0, END))
file.close()
root.title(f"{os.path.basename(file)} - Notepad")


defexit_application():
root.destroy()
```

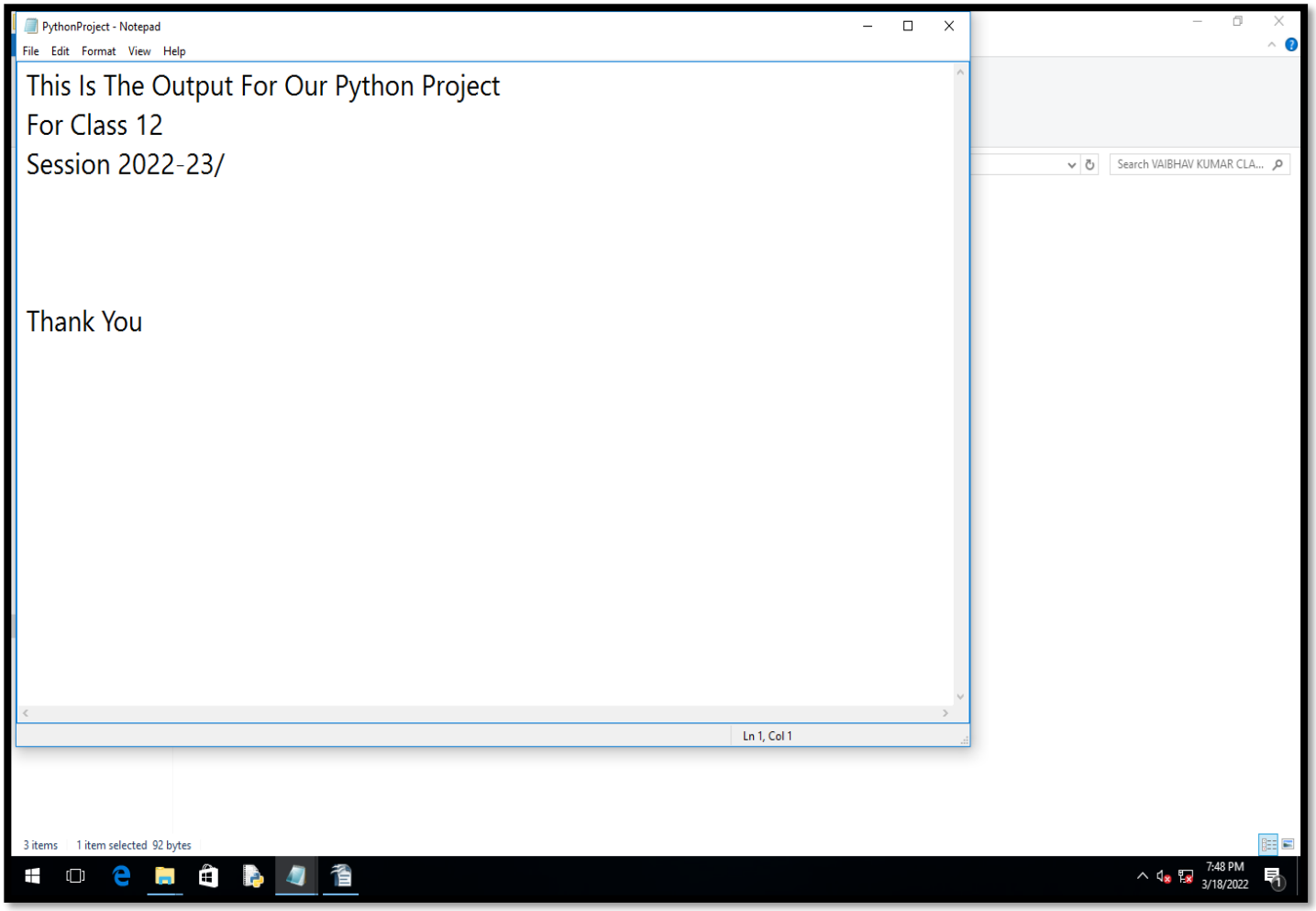
```
defcopy_text():
text_area.event_generate("<<Copy>>")


defcut_text():
text_area.event_generate("<<Cut>>")


defpaste_text():
text_area.event_generate("<<Paste>>")


defselect_all():
text_area.event_generate("<<Control-Keypress-A>>")


defdelete_last_char():
text_area.event_generate("<<KP_Delete>>")


defabout_notepad():
mb.showinfo("About Notepad", "This is just another Notepad, but this is
better than all others")


defabout_commands():
    commands = """
Under the File Menu:
- 'New' clears the entire Text Area
- 'Open' clears text and opens another file
- 'Save' saves your current file
- 'Save As' saves your file in another extension

Under the Edit Menu:
- 'Copy' copies the selected text to your clipboard
- 'Cut' cuts the selected text and removes it from the text area
- 'Paste' pastes the copied/cut text
- 'Select All' selects the entire text
- 'Delete' deletes the last character
"""

mb.showinfo(title="All commands", message=commands, width=60, height=40)


# Initializing the window
root = Tk()
root.title("Untitled - Notepad")
root.geometry('800x500')
root.resizable(0, 0)

root.columnconfigure(0, weight=1)
root.rowconfigure(0, weight=1)

icon = ImageTk.PhotoImage(Image.open('Notepad.png'))
root.iconphoto(False, icon)
file = ''

# Setting the basic components of the window
```

```
menu_bar = Menu(root)
root.config(menu=menu_bar)

text_area = Text(root, font=("Times New Roman", 12))
text_area.grid(sticky=NSEW)

scroller = Scrollbar(text_area, orient=VERTICAL)
scroller.pack(side=RIGHT, fill=Y)

scroller.config(command=text_area.yview)
text_area.config(yscrollcommand=scroller.set)

# Adding the File Menu and its components
file_menu = Menu(menu_bar, tearoff=False, activebackground='DodgerBlue')

file_menu.add_command(label="New", command=open_new_file)
file_menu.add_command(label="Open File", command=open_file)
file_menu.add_command(label="Save As", command=save_file)
file_menu.add_separator()
file_menu.add_command(label="Close File", command=exit_application)

menu_bar.add_cascade(label="File", menu=file_menu)

# Adding the Edit Menu and its components
edit_menu = Menu(menu_bar, tearoff=False, activebackground='DodgerBlue')

edit_menu.add_command(label='Copy', command=copy_text)
edit_menu.add_command(label='Cut', command=cut_text)
edit_menu.add_command(label='Paste', command=paste_text)
edit_menu.add_separator()
edit_menu.add_command(label='Select All', command=select_all)
edit_menu.add_command(label='Delete', command=delete_last_char)

menu_bar.add_cascade(label="Edit", menu=edit_menu)

# Adding the Help Menu and its components
help_menu = Menu(menu_bar, tearoff=False, activebackground='DodgerBlue')

help_menu.add_command(label='About Notepad', command=about_notepad)
help_menu.add_command(label='About Commands', command=about_commands)

menu_bar.add_cascade(label="Help", menu=help_menu)

root.config(menu=menu_bar)

# Adding a label to the bottom that counts the number of characters in the
text
# Label(root, text=f"{len(text_area.get(1.0, END))} characters", font=("Times
New Roman", 12)).place(anchor=S, y=490)

# Finalizing the window
root.update()
root.mainloop()
```

OUTPUT


VAIBHAV KUMAR CLASS 12 A1
C:\Windows\py.exe
Untitled - Notepad
File Edit Help
This Is The Output For Our Python Project
For Class 12
Session 2022-23\
Thank you
Local Disk (E:)
Local Disk (F:)
AKASH-6 (D:)
Network
17 items
1 item selected 4.58 KB
7:42 PM
3/18/2022


VAIBHAV KUMAR CLASS 12 A1
File Home Share View
Computer › Local Disk (E:) › VAIBHAV KUMAR CLASS 12 A1
Name Date modified Type Size
PythonProject 3/18/2022 7:47 PM Text Document 1 KB
TEXTeditor_19_12_22 3/18/2022 7:31 PM Python File 5 KB
New folder 3/18/2022 7:48 PM File folder
3 items
7:48 PM
3/18/2022


PythonProject - Notepad
File Edit Format View Help
This Is The Output For Our Python Project
For Class 12
Session 2022-23/
Thank You
Ln 1, Col 1
Search VAIBHAV KUMAR CLA...
3 items
1 item selected 92 bytes
7:48 PM
3/18/2022

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