

Summer Training Report

on

KnowPad (using C++ and Qt Framework)

**A Project Report submitted in partial fulfilment of the requirements for
the award of**

Bachelor of Engineering

IN

COMPUTER SCIENCE AND ENGINEERING

Submitted by

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**Under the supervision of
Er. Animesh Singh**



**CHANDIGARH COLLEGE OF ENGINEERING AND
TECHNOLOGY (DEGREE WING)**

Government Institute under Chandigarh (UT) Administration, Affiliated to Panjab University, Chandigarh

Sector-26, Chandigarh. PIN-160019

AUGUST, 2021



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CANDIDATE'S DECLARATION

I hereby declare that the work presented in this report entitled “KnowPad (using C++and Qt Framework)”, in fulfilment of the requirement for the award of the degree Bachelor of Engineering in Computer Science & Engineering, submitted in CSE Department, Chandigarh College of Engineering & Technology (Degree wing) affiliated to Punjab University, Chandigarh, is an authentic record of my own work carried out during my degree under the guidance of **Er. Animesh Singh**. The work reported in this has not been submitted by me for award of any other degree or diploma.

Date : 08-08-2021 Tejas Kumar

Place: Chandigarh CO20364



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CERTIFICATE

This is to certify that the Project work entitled “KnowPad (using C++ and Qt Framework)” submitted by TEJAS KUMAR, CO20364 in fulfilment for the requirements of the award of Bachelor of Engineering Degree in Computer Science & Engineering at Chandigarh College of Engineering and Technology (Degree Wing), Chandigarh is an authentic work carried out by him/her under my supervision and guidance.

To the best of my knowledge, the matter embodied in the project has not been submitted to any other University / Institute for the award of any Degree.

Date : 08-08-2021

Er. Animesh Singh

Place : Chandigarh

Dept. of CSE

CCET(Degree Wing)

Chandigarh



Department of Computer Sc. & Technology

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ABSTRACT

C++ is a general purpose programming language. It supports different ways of programming like procedural, object oriented, functional, and so on. I have made a program called KnowPad which uses C++ as the main programming language and uses the Qt Framework. It allows the user to write and store text and perform a variety of creative tasks on the text like coloring text, highlighting text, copying and pasting, printing, etc. for better user experience using a text editor. It also has features that allow users to save and erase the work. This is possible with the help of Qt a cross-platform application development framework and it also acts as a Graphical User Interface (GUI) toolkit for easy application development.

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Chapter 1 : Introduction to Graphical User Interface

1.1 Meaning of Graphical User Interface

Graphical User Interface or GUI is an interface that allows the users to interact with different electronic devices using icons and other visual detectors. The graphical user interfaces were created because command line interfaces were quite complicated and it was difficult to learn all the commands in it.

In today's times, graphical user interfaces are used in many devices such as smartphones, MP3 players, gaming devices, etc.

Designing the visual composition of GUI is an important part of software development. The goal of GUI is to enhance the efficiency and ease of use of underlying logical design of the program.

Typically, users interact with information by using visual widgets that allow interactions appropriate to the data that they hold.

1.2 Comparison with Command-Line Interface / Input

Command Line Interface (CLI) is a command line program that accepts text input to execute certain functions. GUIs were introduced in reaction to the perceived steep learning curve of Command Line Interfaces.

The commands available for Command Line Interfaces can be many and complex operations can be performed using a short sequence of words, numbers or symbols. This allows for great efficiency once the commands are learnt but reaching this level takes a lot of time because the commands may not be easily discoverable or short. Also CLIs can become slow and error-prone when users must enter long commands consisting of many parameters.

However, GUIs present the users with many widgets that represent and can trigger some of the system's available commands. Today with GUIs, most users never use command line interfaces.

Chapter 2 : Qt Framework

2.1 Introduction

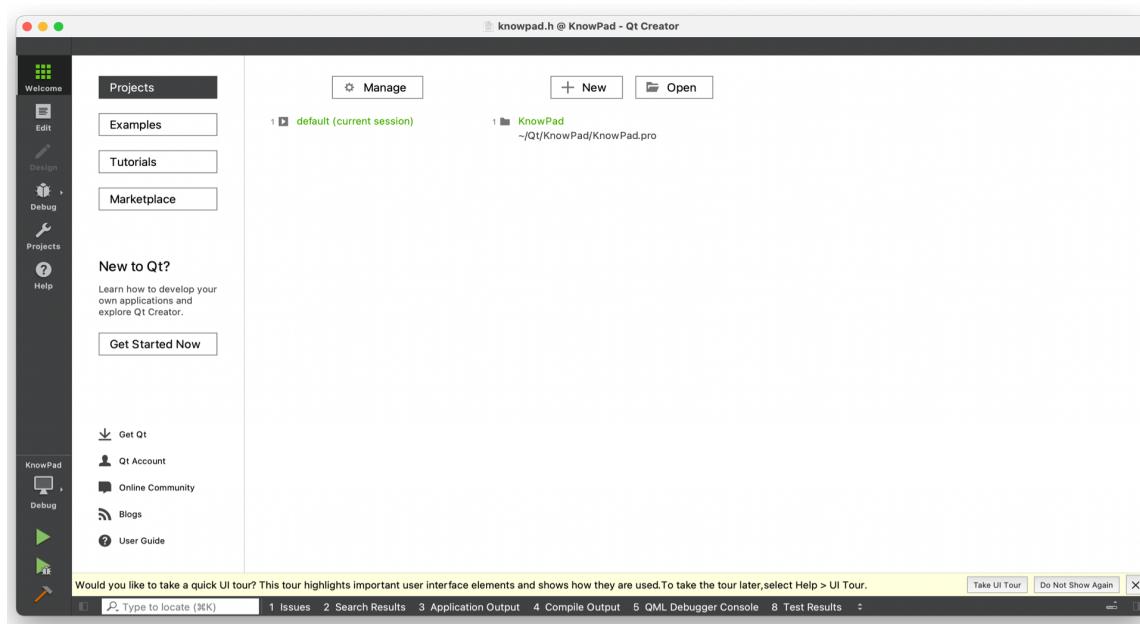
Qt is a framework which has features that make it a widget toolkit for creating Graphical User Interfaces as well as cross-platform applications that can run on various software and hardware platforms such as Linux, Windows, macOS, Android and embedded systems with little or no change in the underlying codebase.

It is available under both commercial and open source licenses.

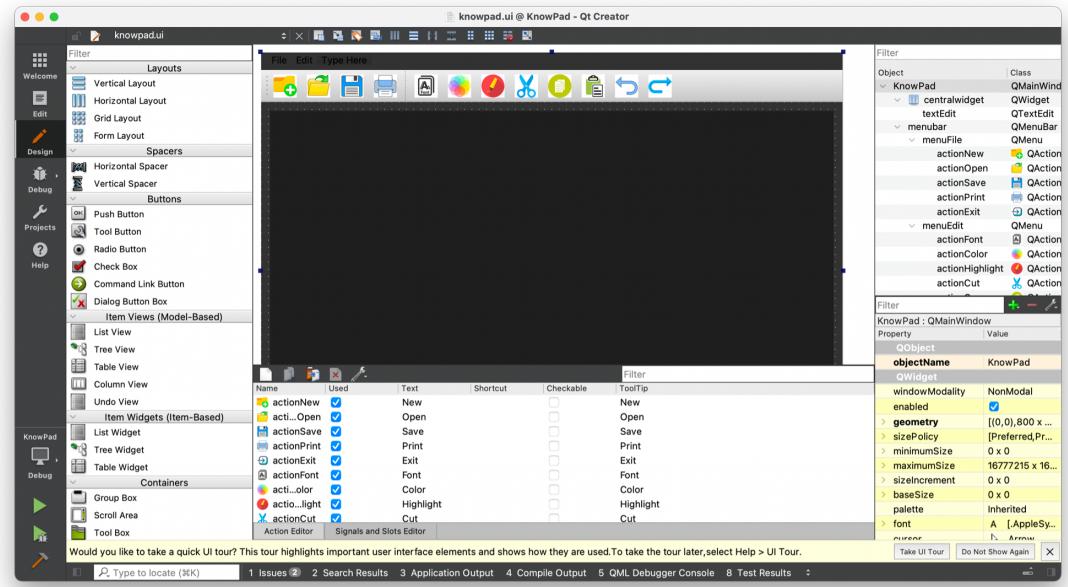
2.2 Qt Creator IDE

Qt Creator is a cross platform IDE for C++ and QML. Qt Designer is an application which is used as a widget tool and it is integrated into the IDE and it builds .ui applications..

It has GUI designing and layout functionality which is great for developing applications.



*Qt Creator IDE
Figure 1*



*Qt Designer
Figure 2*

CHAPTER 3 : KNOWPAD

3.1 Introduction

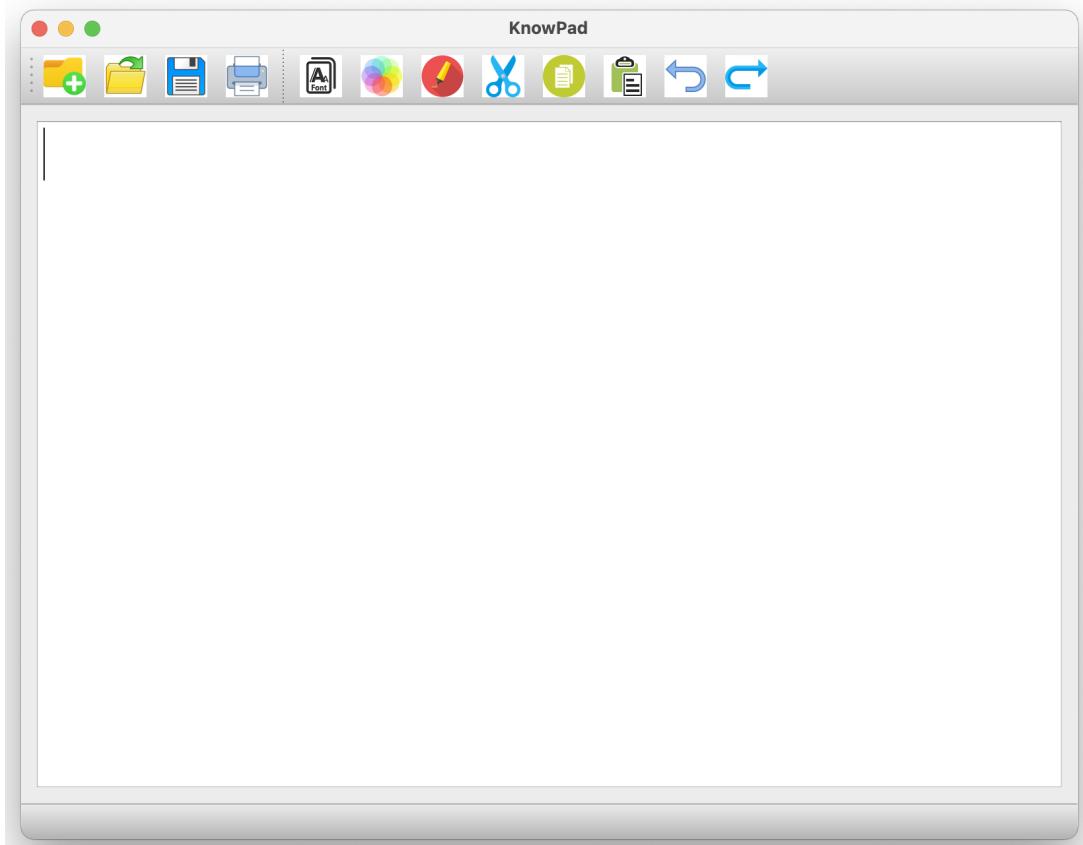
KnowPad is a text editor application that can be used for creating text and formatting it using various operations. This application offers a variety of operations like coloring text, highlighting, changing fonts and other basic text operations like cutting, copying and pasting. It is a GUI application built using the Qt Framework and C++ language. It was developed using Qt Creator IDE.

3.2 Functionality and Features

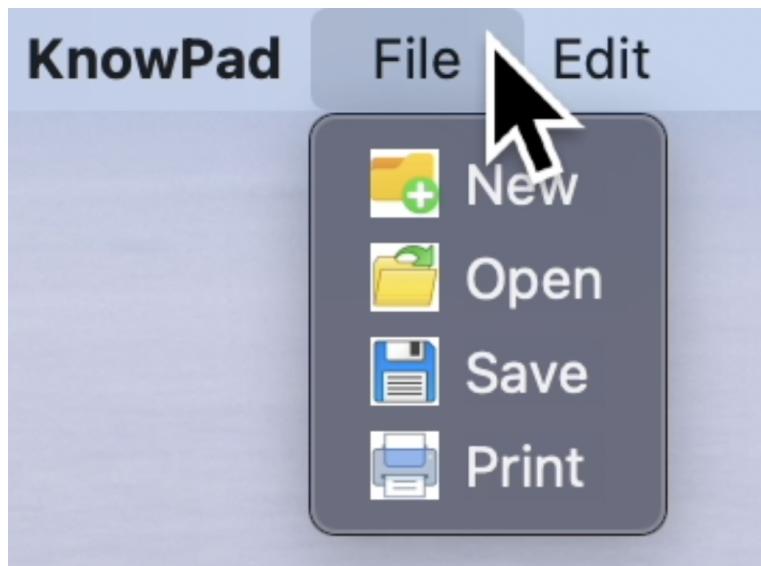
KnowPad has the following functionalities :

- A toolbar that has File and Edit operations
- Within the File we have the options to
 - Create a new file
 - Open an existing file
 - Save the file
 - Print the text.
- Within Edit we have the operations to
 - Change Font
 - Change Text Color
 - Highlight or Change Text Background
 - Cut the text
 - Copy the text
 - Paste the text
 - Undo the action
 - Redo the action
- It also has a Menu-bar for easy access for the operations. The Menu-bar displays the icons for File and Edit Operations

3.3 Pictures of KnowPad :



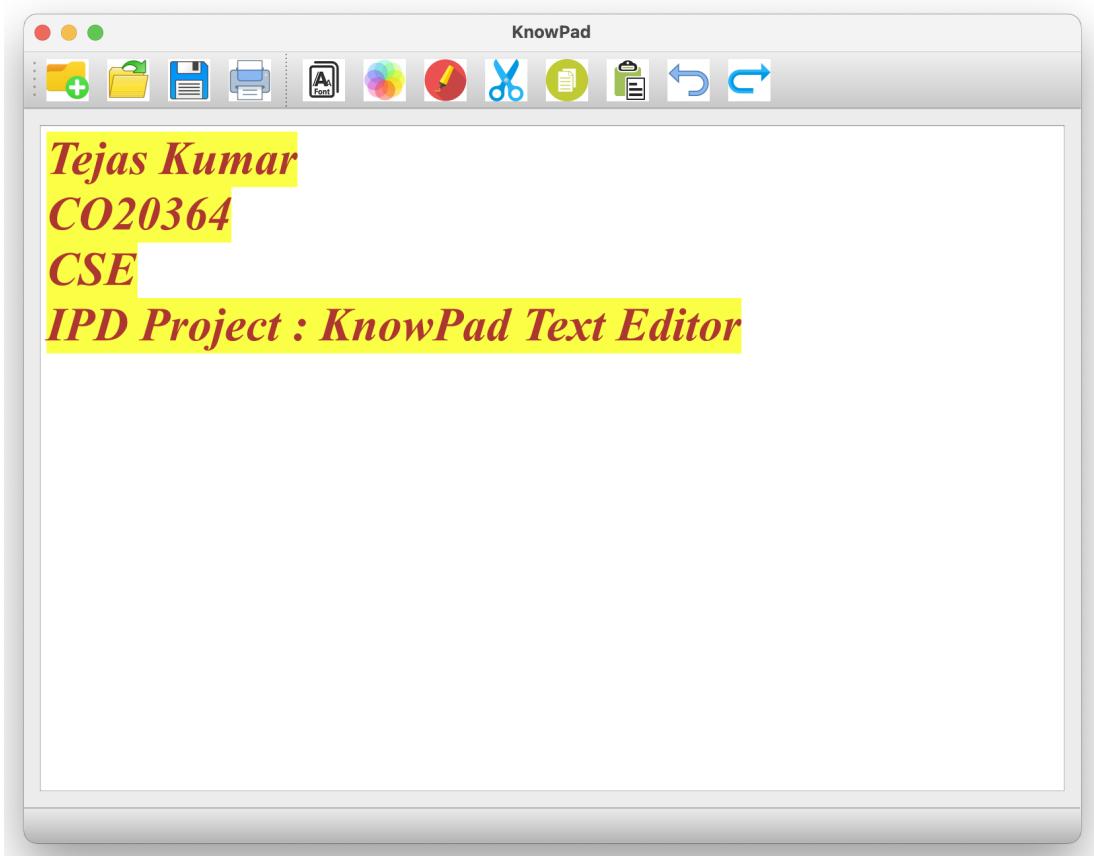
Main screen of KnowPad
Figure 3



KnowPad File toolbar
Figure 4



KnowPad Edit toolbar
Figure 5



Text Coloring, Highlighting and Font Formatting
Figure 6

References :

- <https://www.qt.io>
- <https://www.google.com>
- <https://stackoverflow.com>
- <https://www.youtube.com>