**学 号：201814600205**





**2019-2020春季学期**

**计算机原理实验报告**

**作业题目：超前进位加法器的设计**

**学生姓名：马昕**

**专业班级：18计科2班**

**学 院：人工智能学院**

**任课教师：于复兴 副教授**

**2020年6月30日**项目基本信息

|  |  |
| --- | --- |
| 项目概述 | 本程序使用python语言开发，根据四位超前进位加法器改进而来，能够根据输入的两个加数，模拟进位等操作，并且能够显示出进位等中间过程，从而让使用者更加方便的学习超前进位加法器的原理以及结构。  使用者可以自己选择加数a和加数b，点击开始计算之后，将自动显示进位情况，并且显示出传递进位、本地进位的数值，最后将计算结果显示在屏幕上。  程序使用python语言开发，UI设计采用pyQT5来实现，对图片等资源文件进行了二进制转化，同时使用pyinstaller打包成exe可执行文件，并且预留了程序接口，能够快捷方便的将本程序嵌入到其他程序中。 |

# 1系统需求分析

## 1.1 功能需求分析

1. 输入数据：根据复选框选择两个加数的每一位。
2. 计算进位：依据加数计算是否需要进位。
3. 计算传递进位：计算并显示传递进位。
4. 计算本地进位：计算并显示本地进位。
5. 结果显示：在屏幕中显示出两数加和的结果。

## 1.2系统总体结构设计

超前进位加法器的实现一共包含以下几个模块:

1. 输入：根据复选框选择两个加数a，b的每一位。
2. 计算：根据输入的a，b的值计算进位信息。
3. 显示：将计算的中间结果以及最终结果显示出来。

根据需求分析的结果,总体结构如图2-1所示。

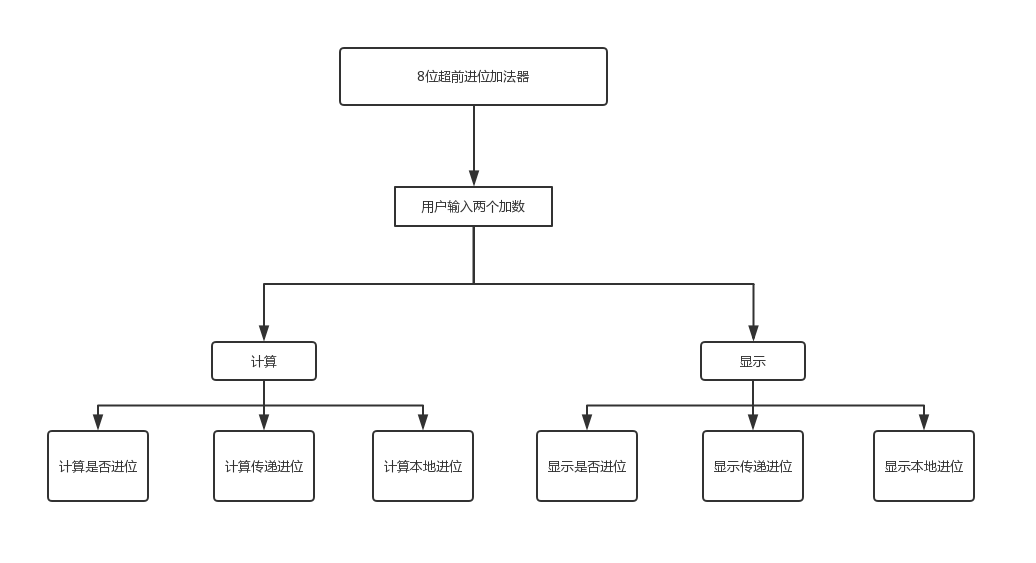


图2.1系统总体结构

# 2详细设计

## 2.1 数据结构设计

1. 类的设计

**表3-1 Stu类成员列表**

|  |
| --- |
| MyWindow类 |
| ui |
| is\_check() |
| progressive\_calculate() |
| local\_calculate() |
| carry\_calculate() |
| res\_calculate() |

（2）系统包含的类库

import untitled UI界面模块

import sys 系统相关信息模块

from PyQt5.QtCore import Qt pyqt模块

from PyQt5.QtWidgets import QApplication, QMainWindow pyqt主界面模块

1. 各个变量的定义和作用

a,b:加数，有用户定义

p:传递进位

g：本地进位

C:是否进位

S：计算结果

## 2.2系统函数的组成、功能、参数说明、相互调用关系

**主函数 if \_\_name\_\_ == "\_\_main\_\_":**

初始化UI界面，创建UI对象，创建对象时即完成pyQT的槽函数以及信号函数的绑定，然后使用 show.show()显示UI界面，并且绑定程序结束按钮为界面右上角的关闭选项栏

**类构造函数 def \_\_init\_\_(self)：**

这是一个用于初始化类的函数，在创建函数对象的时候就会自动执行本函数，函数首先获取ui界面句柄，即拿到所有的控件，然后启动控件操作，最后为“计算结果”按钮绑定事件函数。

**按钮点击事件函数 def success\_click\_button(self)：**

这是一个无参函数，绑定在“计算结果”按钮上，当点击按钮时，会执行本函数，实现相关的计算依据以及数据展示。

**复选框判断函数 def is\_chick(self)：**

这是一个无参函数，主要功能是判断复选框的选择情况，用于获取用户选择的两个加数。

**计算传递进位函数def progressive\_calculate(self):**

本函数实现对传递进位的计算，并且将计算结果传入UI界面的复选框中。

**计算本地进位函数def local\_calculate(self):**

本函数实现对本地进位的计算，并且将计算结果传入UI界面的复选框中。

**计算是否进位函数def carry\_calculate(self):**

本函数实现判断是否进位，并且将计算结果传入UI界面的复选框中。

**计算结果函数def res\_calculate(self):**

这个函数的功能是计算最终的相加结果，并显示在UI界面的文本框中。

# 3设计测试流程

1. 进入系统，显示本系统UI界面。如图3.1所示。



图3.1 系统主页

1. 勾选复选框，设置加数。如图3.2所示。

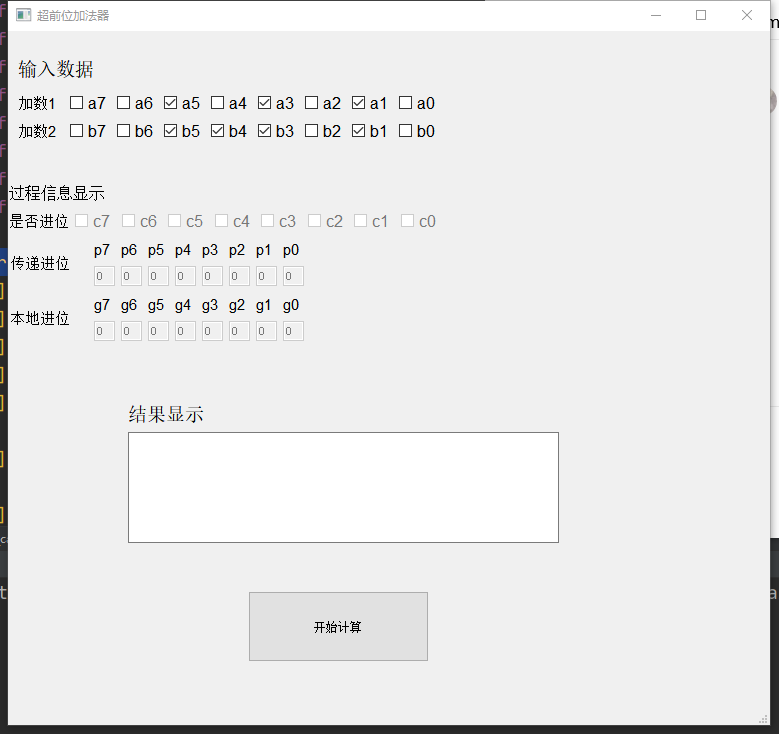


图3.2 选择加数

3.点击开始计算，获得计算结果以及中间结果。如图3.3所示。

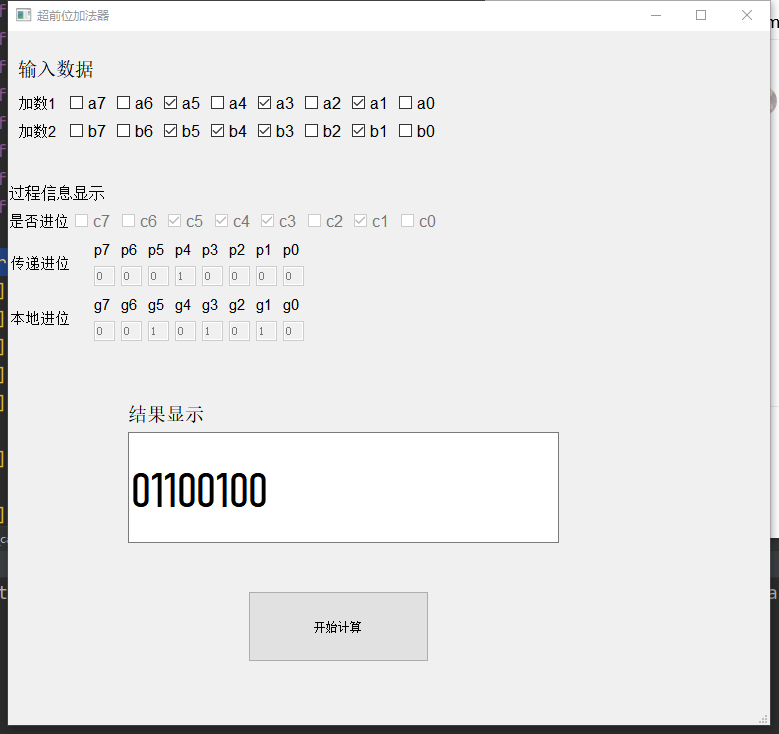
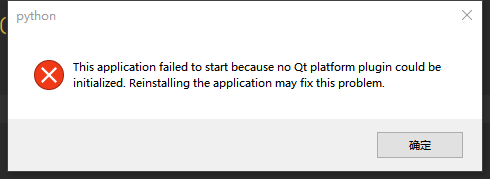


图3.3 计算结果

# 4 作品设计、实现难点分析

## 1.难点分析

一个项目的开发过程并不总是一帆风顺的，其中难免会遇到困难，使编程无法继续下去。例如最终打包为exe文件时，打包的exe文件无法使用，如下：



## 2.解决方案

针对程序设计过程中遇到的困难，我通过强大的网络资源，搜索了许多帖子，并且进行一一尝试，慢慢摸索，发现是python虚拟环境包含中文路径导致的，其实就是整个项目的名字设置成了中文，最终经过反复的调试及测试，解决了上述的难点，使得程序可以正常运转。

## 3.测试结果

程序在pycharm以及多台windows系统电脑中运行测试，能实现预期的功能，项目完工！

# 5 心得体会

通过本次设计8位超前进位加法器，我深入了解到了计算机原理的魅力，对于底层的操作，计算机到底是如何实现的哪？为什么普通的全加器可以实现加法的操作，人们还要设计超前进位加法器哪？4位、8位甚至16位超前进位加法器都有什么特点哪？通过本次实验设计，统统明白了这些问题，并且掌握了其中的道理，我相信这些基本的知识，无论在后续的课设中，还是今后对于计算机的学习，都起到了无可挑剔的作用。我也会继续学习相关的理论知识，为将来的学习、工作铺平道路。

# 6 参考文献

# 【1】董付国，python程序设计. 北京：清华大学出版社，2015.8

# 【2】张新荣，计算机组成原理.北京：机械工业出版社，2009.3 附录（源代码）

以下为主文件：

#!/usr/bin/env python

# -\*- coding: utf-8 -\*-

# @File : main.py

# @Project : 超前加法器

# @Software: PyCharm

# @Author : 大红昕

# @Time : 2020/6/16 17:21

from PyQt5.QtWidgets import QApplication, QMainWindow

import untitled

import sys

from PyQt5.QtCore import Qt

a = [0, 0, 0, 0, 0, 0, 0, 0]

b = [0, 0, 0, 0, 0, 0, 0, 0]

p = [0, 0, 0, 0, 0, 0, 0, 0]

g = [0, 0, 0, 0, 0, 0, 0, 0]

c = [0, 0, 0, 0, 0, 0, 0, 0]

s = [0, 0, 0, 0, 0, 0, 0, 0]

m = [0]

class MyWindow(QMainWindow):

def \_\_init\_\_(self):

super(MyWindow, self).\_\_init\_\_()

self.ui = untitled.Ui\_MainWindow()

self.ui.setupUi(self)

self.ui.pushButton.clicked.connect(self.success\_click\_button)

def success\_click\_button(self):

self.is\_chick()

self.progressive\_calculate()

self.local\_calculate()

self.carry\_calculate()

self.res\_calculate()

def is\_chick(self):

"""

判断多选框中的值

:return:无

"""

if self.ui.a0.isChecked():

a[0] = 1

else:

a[0] = 0

if self.ui.a1.isChecked():

a[1] = 1

else:

a[1] = 0

if self.ui.a2.isChecked():

a[2] = 1

else:

a[2] = 0

if self.ui.a3.isChecked():

a[3] = 1

else:

a[3] = 0

if self.ui.a4.isChecked():

a[4] = 1

else:

a[4] = 0

if self.ui.a5.isChecked():

a[5] = 1

else:

a[5] = 0

if self.ui.a6.isChecked():

a[6] = 1

else:

a[6] = 0

if self.ui.a7.isChecked():

a[7] = 1

else:

a[7] = 0

if self.ui.b0.isChecked():

b[0] = 1

else:

b[0] = 0

if self.ui.b1.isChecked():

b[1] = 1

else:

b[1] = 0

if self.ui.b2.isChecked():

a[2] = 1

else:

b[2] = 0

if self.ui.b3.isChecked():

b[3] = 1

else:

b[3] = 0

if self.ui.b4.isChecked():

b[4] = 1

else:

b[4] = 0

if self.ui.b5.isChecked():

b[5] = 1

else:

b[5] = 0

if self.ui.b6.isChecked():

b[6] = 1

else:

b[6] = 0

if self.ui.b7.isChecked():

b[7] = 1

else:

b[7] = 0

def progressive\_calculate(self):

"""

计算递进位并传参

:return: 无

"""

for key in range(len(p)):

p[key] = a[key] ^ b[key]

self.ui.lineEdit\_p0.setText(str(p[0]))

self.ui.lineEdit\_p1.setText(str(p[1]))

self.ui.lineEdit\_p2.setText(str(p[2]))

self.ui.lineEdit\_p3.setText(str(p[3]))

self.ui.lineEdit\_p4.setText(str(p[4]))

self.ui.lineEdit\_p5.setText(str(p[5]))

self.ui.lineEdit\_p6.setText(str(p[6]))

self.ui.lineEdit\_p7.setText(str(p[7]))

def local\_calculate(self):

for key in range(len(g)):

g[key] = a[key] & b[key]

self.ui.lineEdit\_g0.setText(str(g[0]))

self.ui.lineEdit\_g1.setText(str(g[1]))

self.ui.lineEdit\_g2.setText(str(g[2]))

self.ui.lineEdit\_g3.setText(str(g[3]))

self.ui.lineEdit\_g4.setText(str(g[4]))

self.ui.lineEdit\_g5.setText(str(g[5]))

self.ui.lineEdit\_g6.setText(str(g[6]))

self.ui.lineEdit\_g7.setText(str(g[7]))

def carry\_calculate(self):

c[0] = g[0] | p[0] & m[0];

c[1] = g[1] | p[1] & g[0] | p[1] & p[0] & m[0];

c[2] = g[2] | p[2] & g[1] | p[2] & p[1] & g[0] | p[2] & p[1] & p[0] & m[0];

c[3] = g[3] | p[3] & g[2] | p[3] & p[2] & g[1] | p[3] & p[2] & p[1] & g[0] | p[3] & p[2] & p[1] & p[0] & m[0]

c[4] = g[4] | p[4] & g[3] | p[4] & p[3] & g[2] | p[4] & p[3] & p[2] & g[1] | p[4] & p[3] & p[2] & p[1] & g[0] | \

p[4] & p[3] & p[2] & p[1] & p[0] & m[0]

c[5] = g[5] | p[5] & g[4] | p[5] & p[4] & g[3] | p[5] & p[4] & p[3] & g[2] | p[5] & p[4] & p[3] & p[2] & g[1] | \

p[5] & p[4] & p[3] & p[2] & p[1] & g[0] | p[5] & p[4] & p[3] & p[2] & p[1] & p[0] & m[0]

c[6] = g[6] | p[6] & g[5] | p[6] & p[5] & g[4] | p[6] & p[5] & p[4] & g[3] | p[6] & p[5] & p[4] & p[3] & g[2] | \

p[6] & p[5] & p[4] & p[3] & p[2] & g[1] | p[6] & p[5] & p[4] & p[3] & p[2] & p[1] & g[0] | p[6] & p[5] & \

p[4] & p[3] & p[2] & p[1] & p[0] & m[0]

c[7] = g[7] | p[7] & g[6] | p[7] & p[6] & g[5] | p[7] & p[6] & p[5] & g[4] | p[7] & p[6] & p[5] & p[4] & g[3] | \

p[7] & p[6] & p[5] & p[4] & p[3] & g[2] | p[7] & p[6] & p[5] & p[4] & p[3] & p[2] & g[1] | p[7] & p[6] & \

p[5] & p[4] & p[3] & p[2] & p[1] & g[0] | p[7] & p[6] & p[5] & p[4] & p[3] & p[2] & p[1] & p[0] & m[0]

self.ui.c0.setChecked(c[0])

self.ui.c1.setChecked(c[1])

self.ui.c2.setChecked(c[2])

self.ui.c3.setChecked(c[3])

self.ui.c4.setChecked(c[4])

self.ui.c5.setChecked(c[5])

self.ui.c6.setChecked(c[6])

self.ui.c7.setChecked(c[7])

def res\_calculate(self):

res = ''

s[0] = (a[0] ^ b[0]) ^ m[0];

s[1] = (a[1] ^ b[1]) ^ ((a[0] & b[0]) | (a[0] ^ b[0]) & m[0]);

s[2] = (a[2] ^ b[2]) ^ ((a[1] & b[1]) | (a[1] ^ b[1]) & (a[0] & b[0]) | (a[1] ^ b[1]) & (a[0] & b[0]) & m[0]);

s[3] = (a[3] ^ b[3]) ^ (

(a[2] & b[2]) | (a[2] ^ b[2]) & (a[1] & b[1]) | (a[2] ^ b[2]) & (a[1] ^ b[1]) & (a[0] & b[0]) | (

a[2] ^ b[2]) & (a[1] ^ b[1]) & (

a[0] & b[0]) & m[0]);

s[4] = (a[4] ^ b[4]) ^ (

(a[3] & b[3]) | (a[3] ^ b[3]) & (a[2] & b[2]) | (a[3] ^ b[3]) & (a[2] ^ b[2]) & (a[1] & b[1]) | (

a[3] ^ b[3]) & (a[2] ^ b[2]) & (

a[1] ^ b[1]) & (a[0] & b[0]) | (a[3] ^ b[3]) & (a[2] ^ b[2]) & (a[1] ^ b[1]) & (a[0] ^ b[0]) &

m[0]);

s[5] = (a[5] ^ b[5]) ^ (

(a[4] & b[4]) | (a[4] ^ b[4]) & (a[3] & b[3]) | (a[4] ^ b[4]) & (a[3] ^ b[3]) & (a[2] & b[2]) | (

a[4] ^ b[4]) & (a[3] ^ b[3]) & (

a[2] ^ b[2]) & (a[1] & b[1]) | (a[4] ^ b[4]) & (a[3] ^ b[3]) & (a[2] ^ b[2]) & (a[1] ^ b[1]) & (

a[0] & b[0]) | (a[4] ^ b[4]) & (

a[3] ^ b[3]) & (a[2] ^ b[2]) & (a[1] ^ b[1]) & (a[0] ^ b[0]) & m[0]);

s[6] = (a[6] ^ b[6]) ^ (

(a[5] & b[5]) | (a[5] ^ b[5]) & (a[4] & b[4]) | (a[5] ^ b[5]) & (a[4] ^ b[4]) & (a[3] & b[3]) | (

a[5] ^ b[5]) & (a[4] ^ b[4]) & (

a[3] ^ b[3]) & (a[2] & b[2]) | (a[5] ^ b[5]) & (a[4] ^ b[4]) & (a[3] ^ b[3]) & (a[2] ^ b[2]) & (

a[1] & b[1]) | (a[5] ^ b[5]) & (

a[4] ^ b[4]) & (a[3] ^ b[3]) & (a[2] ^ b[2]) & (a[1] ^ b[1]) & (a[0] & b[0]) | (a[5] ^ b[5]) & (

a[4] ^ b[4]) & (

a[3] ^ b[3]) & (a[2] ^ b[2]) & (a[1] ^ b[1]) & (a[0] ^ b[0]) & m[0]);

s[7] = (a[7] ^ b[7]) ^ (

(a[6] & b[6]) | (a[6] ^ b[6]) & (a[5] & b[5]) | (a[6] ^ b[6]) & (a[5] ^ b[5]) & (a[4] & b[4]) | (

a[6] ^ b[6]) & (a[5] ^ b[5]) & (

a[4] ^ b[4]) & (a[3] & b[3]) | (a[6] ^ b[6]) & (a[5] ^ b[5]) & (a[4] ^ b[4]) & (a[3] ^ b[3]) & (

a[2] & b[2]) | (a[6] ^ b[6]) & (

a[5] ^ b[5]) & (a[4] ^ b[4]) & (a[3] ^ b[3]) & (a[2] ^ b[2]) & (a[1] & b[1]) | (a[6] ^ b[6]) & (

a[5] ^ b[5]) & (

a[4] ^ b[4]) & (a[3] ^ b[3]) & (a[2] ^ b[2]) & (a[1] ^ b[1]) & (a[0] & b[0]) | (a[6] ^ b[6]) & (

a[5] ^ b[5]) & (

a[4] ^ b[4]) & (a[3] ^ b[3]) & (a[2] ^ b[2]) & (a[1] ^ b[1]) & (a[0] ^ b[0]) & m[0]);

for i in s[::-1]:

res += str(i)

self.ui.lineEdit\_result.setText(res)

if \_\_name\_\_ == "\_\_main\_\_":

app = QApplication(sys.argv)

show = MyWindow()

show.show()

sys.exit(app.exec\_())

以下为UI界面代码：

# -\*- coding: utf-8 -\*-

# Form implementation generated from reading ui file 'untitled.ui'

#

# Created by: PyQt5 UI code generator 5.13.2

#

# WARNING! All changes made in this file will be lost!

from PyQt5 import QtCore, QtGui, QtWidgets

class Ui\_MainWindow(object):

def setupUi(self, MainWindow):

MainWindow.setObjectName("MainWindow")

MainWindow.resize(762, 694)

MainWindow.setStyleSheet("")

self.centralwidget = QtWidgets.QWidget(MainWindow)

self.centralwidget.setObjectName("centralwidget")

self.layoutWidget = QtWidgets.QWidget(self.centralwidget)

self.layoutWidget.setGeometry(QtCore.QRect(10, 20, 422, 91))

self.layoutWidget.setObjectName("layoutWidget")

self.verticalLayout\_2 = QtWidgets.QVBoxLayout(self.layoutWidget)

self.verticalLayout\_2.setContentsMargins(0, 0, 0, 0)

self.verticalLayout\_2.setObjectName("verticalLayout\_2")

self.label\_6 = QtWidgets.QLabel(self.layoutWidget)

self.label\_6.setStyleSheet("font: 25 14pt \"Bahnschrift Light\";")

self.label\_6.setObjectName("label\_6")

self.verticalLayout\_2.addWidget(self.label\_6)

self.verticalLayout = QtWidgets.QVBoxLayout()

self.verticalLayout.setObjectName("verticalLayout")

self.horizontalLayout\_2 = QtWidgets.QHBoxLayout()

self.horizontalLayout\_2.setObjectName("horizontalLayout\_2")

self.label = QtWidgets.QLabel(self.layoutWidget)

self.label.setStyleSheet("font: 11pt \"Arial\";")

self.label.setObjectName("label")

self.horizontalLayout\_2.addWidget(self.label)

self.horizontalLayout = QtWidgets.QHBoxLayout()

self.horizontalLayout.setObjectName("horizontalLayout")

self.a7 = QtWidgets.QCheckBox(self.layoutWidget)

self.a7.setStyleSheet("font: 12pt \"Arial\";")

self.a7.setObjectName("a7")

self.horizontalLayout.addWidget(self.a7)

self.a6 = QtWidgets.QCheckBox(self.layoutWidget)

self.a6.setStyleSheet("font: 12pt \"Arial\";")

self.a6.setObjectName("a6")

self.horizontalLayout.addWidget(self.a6)

self.a5 = QtWidgets.QCheckBox(self.layoutWidget)

self.a5.setStyleSheet("font: 12pt \"Arial\";")

self.a5.setObjectName("a5")

self.horizontalLayout.addWidget(self.a5)

self.a4 = QtWidgets.QCheckBox(self.layoutWidget)

self.a4.setStyleSheet("font: 12pt \"Arial\";")

self.a4.setObjectName("a4")

self.horizontalLayout.addWidget(self.a4)

self.a3 = QtWidgets.QCheckBox(self.layoutWidget)

self.a3.setStyleSheet("font: 12pt \"Arial\";")

self.a3.setObjectName("a3")

self.horizontalLayout.addWidget(self.a3)

self.a2 = QtWidgets.QCheckBox(self.layoutWidget)

self.a2.setStyleSheet("font: 12pt \"Arial\";")

self.a2.setObjectName("a2")

self.horizontalLayout.addWidget(self.a2)

self.a1 = QtWidgets.QCheckBox(self.layoutWidget)

self.a1.setStyleSheet("font: 12pt \"Arial\";")

self.a1.setObjectName("a1")

self.horizontalLayout.addWidget(self.a1)

self.a0 = QtWidgets.QCheckBox(self.layoutWidget)

self.a0.setStyleSheet("font: 12pt \"Arial\";")

self.a0.setObjectName("a0")

self.horizontalLayout.addWidget(self.a0)

self.horizontalLayout\_2.addLayout(self.horizontalLayout)

self.verticalLayout.addLayout(self.horizontalLayout\_2)

self.horizontalLayout\_5 = QtWidgets.QHBoxLayout()

self.horizontalLayout\_5.setObjectName("horizontalLayout\_5")

self.label\_3 = QtWidgets.QLabel(self.layoutWidget)

self.label\_3.setStyleSheet("font: 11pt \"Arial\";")

self.label\_3.setObjectName("label\_3")

self.horizontalLayout\_5.addWidget(self.label\_3)

self.horizontalLayout\_6 = QtWidgets.QHBoxLayout()

self.horizontalLayout\_6.setObjectName("horizontalLayout\_6")

self.b7 = QtWidgets.QCheckBox(self.layoutWidget)

self.b7.setStyleSheet("font: 12pt \"Arial\";")

self.b7.setObjectName("b7")

self.horizontalLayout\_6.addWidget(self.b7)

self.b6 = QtWidgets.QCheckBox(self.layoutWidget)

self.b6.setStyleSheet("font: 12pt \"Arial\";")

self.b6.setObjectName("b6")

self.horizontalLayout\_6.addWidget(self.b6)

self.b5 = QtWidgets.QCheckBox(self.layoutWidget)

self.b5.setStyleSheet("font: 12pt \"Arial\";")

self.b5.setObjectName("b5")

self.horizontalLayout\_6.addWidget(self.b5)

self.b4 = QtWidgets.QCheckBox(self.layoutWidget)

self.b4.setStyleSheet("font: 12pt \"Arial\";")

self.b4.setObjectName("b4")

self.horizontalLayout\_6.addWidget(self.b4)

self.b3 = QtWidgets.QCheckBox(self.layoutWidget)

self.b3.setStyleSheet("font: 12pt \"Arial\";")

self.b3.setObjectName("b3")

self.horizontalLayout\_6.addWidget(self.b3)

self.b2 = QtWidgets.QCheckBox(self.layoutWidget)

self.b2.setStyleSheet("font: 12pt \"Arial\";")

self.b2.setObjectName("b2")

self.horizontalLayout\_6.addWidget(self.b2)

self.b1 = QtWidgets.QCheckBox(self.layoutWidget)

self.b1.setStyleSheet("font: 12pt \"Arial\";")

self.b1.setObjectName("b1")

self.horizontalLayout\_6.addWidget(self.b1)

self.b0 = QtWidgets.QCheckBox(self.layoutWidget)

self.b0.setStyleSheet("font: 12pt \"Arial\";")

self.b0.setObjectName("b0")

self.horizontalLayout\_6.addWidget(self.b0)

self.horizontalLayout\_5.addLayout(self.horizontalLayout\_6)

self.verticalLayout.addLayout(self.horizontalLayout\_5)

self.verticalLayout\_2.addLayout(self.verticalLayout)

self.pushButton = QtWidgets.QPushButton(self.centralwidget)

self.pushButton.setGeometry(QtCore.QRect(240, 560, 181, 71))

self.pushButton.setObjectName("pushButton")

self.label\_4 = QtWidgets.QLabel(self.centralwidget)

self.label\_4.setGeometry(QtCore.QRect(450, 720, 121, 31))

self.label\_4.setObjectName("label\_4")

self.layoutWidget1 = QtWidgets.QWidget(self.centralwidget)

self.layoutWidget1.setGeometry(QtCore.QRect(2, 263, 294, 47))

self.layoutWidget1.setObjectName("layoutWidget1")

self.horizontalLayout\_3 = QtWidgets.QHBoxLayout(self.layoutWidget1)

self.horizontalLayout\_3.setContentsMargins(0, 0, 0, 0)

self.horizontalLayout\_3.setObjectName("horizontalLayout\_3")

self.label\_8 = QtWidgets.QLabel(self.layoutWidget1)

self.label\_8.setStyleSheet("font: 25 11pt \"Bahnschrift Light\";")

self.label\_8.setObjectName("label\_8")

self.horizontalLayout\_3.addWidget(self.label\_8)

self.verticalLayout\_18 = QtWidgets.QVBoxLayout()

self.verticalLayout\_18.setObjectName("verticalLayout\_18")

self.label\_17 = QtWidgets.QLabel(self.layoutWidget1)

self.label\_17.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_17.setStyleSheet("font: 11pt \"Arial\";")

self.label\_17.setObjectName("label\_17")

self.verticalLayout\_18.addWidget(self.label\_17)

self.lineEdit\_g7 = QtWidgets.QLineEdit(self.layoutWidget1)

self.lineEdit\_g7.setEnabled(False)

self.lineEdit\_g7.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_g7.setObjectName("lineEdit\_g7")

self.verticalLayout\_18.addWidget(self.lineEdit\_g7)

self.horizontalLayout\_3.addLayout(self.verticalLayout\_18)

self.verticalLayout\_17 = QtWidgets.QVBoxLayout()

self.verticalLayout\_17.setObjectName("verticalLayout\_17")

self.label\_18 = QtWidgets.QLabel(self.layoutWidget1)

self.label\_18.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_18.setStyleSheet("font: 11pt \"Arial\";")

self.label\_18.setObjectName("label\_18")

self.verticalLayout\_17.addWidget(self.label\_18)

self.lineEdit\_g6 = QtWidgets.QLineEdit(self.layoutWidget1)

self.lineEdit\_g6.setEnabled(False)

self.lineEdit\_g6.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_g6.setObjectName("lineEdit\_g6")

self.verticalLayout\_17.addWidget(self.lineEdit\_g6)

self.horizontalLayout\_3.addLayout(self.verticalLayout\_17)

self.verticalLayout\_16 = QtWidgets.QVBoxLayout()

self.verticalLayout\_16.setObjectName("verticalLayout\_16")

self.label\_19 = QtWidgets.QLabel(self.layoutWidget1)

self.label\_19.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_19.setStyleSheet("font: 11pt \"Arial\";")

self.label\_19.setObjectName("label\_19")

self.verticalLayout\_16.addWidget(self.label\_19)

self.lineEdit\_g5 = QtWidgets.QLineEdit(self.layoutWidget1)

self.lineEdit\_g5.setEnabled(False)

self.lineEdit\_g5.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_g5.setObjectName("lineEdit\_g5")

self.verticalLayout\_16.addWidget(self.lineEdit\_g5)

self.horizontalLayout\_3.addLayout(self.verticalLayout\_16)

self.verticalLayout\_15 = QtWidgets.QVBoxLayout()

self.verticalLayout\_15.setObjectName("verticalLayout\_15")

self.label\_20 = QtWidgets.QLabel(self.layoutWidget1)

self.label\_20.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_20.setStyleSheet("font: 11pt \"Arial\";")

self.label\_20.setObjectName("label\_20")

self.verticalLayout\_15.addWidget(self.label\_20)

self.lineEdit\_g4 = QtWidgets.QLineEdit(self.layoutWidget1)

self.lineEdit\_g4.setEnabled(False)

self.lineEdit\_g4.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_g4.setObjectName("lineEdit\_g4")

self.verticalLayout\_15.addWidget(self.lineEdit\_g4)

self.horizontalLayout\_3.addLayout(self.verticalLayout\_15)

self.verticalLayout\_14 = QtWidgets.QVBoxLayout()

self.verticalLayout\_14.setObjectName("verticalLayout\_14")

self.label\_21 = QtWidgets.QLabel(self.layoutWidget1)

self.label\_21.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_21.setStyleSheet("font: 11pt \"Arial\";")

self.label\_21.setObjectName("label\_21")

self.verticalLayout\_14.addWidget(self.label\_21)

self.lineEdit\_g3 = QtWidgets.QLineEdit(self.layoutWidget1)

self.lineEdit\_g3.setEnabled(False)

self.lineEdit\_g3.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_g3.setObjectName("lineEdit\_g3")

self.verticalLayout\_14.addWidget(self.lineEdit\_g3)

self.horizontalLayout\_3.addLayout(self.verticalLayout\_14)

self.verticalLayout\_13 = QtWidgets.QVBoxLayout()

self.verticalLayout\_13.setObjectName("verticalLayout\_13")

self.label\_22 = QtWidgets.QLabel(self.layoutWidget1)

self.label\_22.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_22.setStyleSheet("font: 11pt \"Arial\";")

self.label\_22.setObjectName("label\_22")

self.verticalLayout\_13.addWidget(self.label\_22)

self.lineEdit\_g2 = QtWidgets.QLineEdit(self.layoutWidget1)

self.lineEdit\_g2.setEnabled(False)

self.lineEdit\_g2.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_g2.setObjectName("lineEdit\_g2")

self.verticalLayout\_13.addWidget(self.lineEdit\_g2)

self.horizontalLayout\_3.addLayout(self.verticalLayout\_13)

self.verticalLayout\_12 = QtWidgets.QVBoxLayout()

self.verticalLayout\_12.setObjectName("verticalLayout\_12")

self.label\_23 = QtWidgets.QLabel(self.layoutWidget1)

self.label\_23.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_23.setStyleSheet("font: 11pt \"Arial\";")

self.label\_23.setObjectName("label\_23")

self.verticalLayout\_12.addWidget(self.label\_23)

self.lineEdit\_g1 = QtWidgets.QLineEdit(self.layoutWidget1)

self.lineEdit\_g1.setEnabled(False)

self.lineEdit\_g1.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_g1.setObjectName("lineEdit\_g1")

self.verticalLayout\_12.addWidget(self.lineEdit\_g1)

self.horizontalLayout\_3.addLayout(self.verticalLayout\_12)

self.verticalLayout\_11 = QtWidgets.QVBoxLayout()

self.verticalLayout\_11.setObjectName("verticalLayout\_11")

self.label\_24 = QtWidgets.QLabel(self.layoutWidget1)

self.label\_24.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_24.setStyleSheet("font: 11pt \"Arial\";")

self.label\_24.setObjectName("label\_24")

self.verticalLayout\_11.addWidget(self.label\_24)

self.lineEdit\_g0 = QtWidgets.QLineEdit(self.layoutWidget1)

self.lineEdit\_g0.setEnabled(False)

self.lineEdit\_g0.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_g0.setObjectName("lineEdit\_g0")

self.verticalLayout\_11.addWidget(self.lineEdit\_g0)

self.horizontalLayout\_3.addLayout(self.verticalLayout\_11)

self.layoutWidget2 = QtWidgets.QWidget(self.centralwidget)

self.layoutWidget2.setGeometry(QtCore.QRect(2, 208, 294, 47))

self.layoutWidget2.setObjectName("layoutWidget2")

self.horizontalLayout\_4 = QtWidgets.QHBoxLayout(self.layoutWidget2)

self.horizontalLayout\_4.setContentsMargins(0, 0, 0, 0)

self.horizontalLayout\_4.setObjectName("horizontalLayout\_4")

self.label\_7 = QtWidgets.QLabel(self.layoutWidget2)

self.label\_7.setStyleSheet("font: 25 11pt \"Bahnschrift Light\";")

self.label\_7.setObjectName("label\_7")

self.horizontalLayout\_4.addWidget(self.label\_7)

self.verticalLayout\_3 = QtWidgets.QVBoxLayout()

self.verticalLayout\_3.setObjectName("verticalLayout\_3")

self.label\_9 = QtWidgets.QLabel(self.layoutWidget2)

self.label\_9.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_9.setStyleSheet("font: 11pt \"Arial\";")

self.label\_9.setObjectName("label\_9")

self.verticalLayout\_3.addWidget(self.label\_9)

self.lineEdit\_p7 = QtWidgets.QLineEdit(self.layoutWidget2)

self.lineEdit\_p7.setEnabled(False)

self.lineEdit\_p7.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_p7.setObjectName("lineEdit\_p7")

self.verticalLayout\_3.addWidget(self.lineEdit\_p7)

self.horizontalLayout\_4.addLayout(self.verticalLayout\_3)

self.verticalLayout\_4 = QtWidgets.QVBoxLayout()

self.verticalLayout\_4.setObjectName("verticalLayout\_4")

self.label\_10 = QtWidgets.QLabel(self.layoutWidget2)

self.label\_10.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_10.setStyleSheet("font: 11pt \"Arial\";")

self.label\_10.setObjectName("label\_10")

self.verticalLayout\_4.addWidget(self.label\_10)

self.lineEdit\_p6 = QtWidgets.QLineEdit(self.layoutWidget2)

self.lineEdit\_p6.setEnabled(False)

self.lineEdit\_p6.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_p6.setObjectName("lineEdit\_p6")

self.verticalLayout\_4.addWidget(self.lineEdit\_p6)

self.horizontalLayout\_4.addLayout(self.verticalLayout\_4)

self.verticalLayout\_5 = QtWidgets.QVBoxLayout()

self.verticalLayout\_5.setObjectName("verticalLayout\_5")

self.label\_11 = QtWidgets.QLabel(self.layoutWidget2)

self.label\_11.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_11.setStyleSheet("font: 11pt \"Arial\";")

self.label\_11.setObjectName("label\_11")

self.verticalLayout\_5.addWidget(self.label\_11)

self.lineEdit\_p5 = QtWidgets.QLineEdit(self.layoutWidget2)

self.lineEdit\_p5.setEnabled(False)

self.lineEdit\_p5.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_p5.setObjectName("lineEdit\_p5")

self.verticalLayout\_5.addWidget(self.lineEdit\_p5)

self.horizontalLayout\_4.addLayout(self.verticalLayout\_5)

self.verticalLayout\_6 = QtWidgets.QVBoxLayout()

self.verticalLayout\_6.setObjectName("verticalLayout\_6")

self.label\_12 = QtWidgets.QLabel(self.layoutWidget2)

self.label\_12.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_12.setStyleSheet("font: 11pt \"Arial\";")

self.label\_12.setObjectName("label\_12")

self.verticalLayout\_6.addWidget(self.label\_12)

self.lineEdit\_p4 = QtWidgets.QLineEdit(self.layoutWidget2)

self.lineEdit\_p4.setEnabled(False)

self.lineEdit\_p4.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_p4.setObjectName("lineEdit\_p4")

self.verticalLayout\_6.addWidget(self.lineEdit\_p4)

self.horizontalLayout\_4.addLayout(self.verticalLayout\_6)

self.verticalLayout\_7 = QtWidgets.QVBoxLayout()

self.verticalLayout\_7.setObjectName("verticalLayout\_7")

self.label\_13 = QtWidgets.QLabel(self.layoutWidget2)

self.label\_13.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_13.setStyleSheet("font: 11pt \"Arial\";")

self.label\_13.setObjectName("label\_13")

self.verticalLayout\_7.addWidget(self.label\_13)

self.lineEdit\_p3 = QtWidgets.QLineEdit(self.layoutWidget2)

self.lineEdit\_p3.setEnabled(False)

self.lineEdit\_p3.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_p3.setObjectName("lineEdit\_p3")

self.verticalLayout\_7.addWidget(self.lineEdit\_p3)

self.horizontalLayout\_4.addLayout(self.verticalLayout\_7)

self.verticalLayout\_8 = QtWidgets.QVBoxLayout()

self.verticalLayout\_8.setObjectName("verticalLayout\_8")

self.label\_14 = QtWidgets.QLabel(self.layoutWidget2)

self.label\_14.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_14.setStyleSheet("font: 11pt \"Arial\";")

self.label\_14.setObjectName("label\_14")

self.verticalLayout\_8.addWidget(self.label\_14)

self.lineEdit\_p2 = QtWidgets.QLineEdit(self.layoutWidget2)

self.lineEdit\_p2.setEnabled(False)

self.lineEdit\_p2.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_p2.setObjectName("lineEdit\_p2")

self.verticalLayout\_8.addWidget(self.lineEdit\_p2)

self.horizontalLayout\_4.addLayout(self.verticalLayout\_8)

self.verticalLayout\_9 = QtWidgets.QVBoxLayout()

self.verticalLayout\_9.setObjectName("verticalLayout\_9")

self.label\_15 = QtWidgets.QLabel(self.layoutWidget2)

self.label\_15.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_15.setStyleSheet("font: 11pt \"Arial\";")

self.label\_15.setObjectName("label\_15")

self.verticalLayout\_9.addWidget(self.label\_15)

self.lineEdit\_p1 = QtWidgets.QLineEdit(self.layoutWidget2)

self.lineEdit\_p1.setEnabled(False)

self.lineEdit\_p1.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_p1.setObjectName("lineEdit\_p1")

self.verticalLayout\_9.addWidget(self.lineEdit\_p1)

self.horizontalLayout\_4.addLayout(self.verticalLayout\_9)

self.verticalLayout\_10 = QtWidgets.QVBoxLayout()

self.verticalLayout\_10.setObjectName("verticalLayout\_10")

self.label\_16 = QtWidgets.QLabel(self.layoutWidget2)

self.label\_16.setMaximumSize(QtCore.QSize(16, 16777215))

self.label\_16.setStyleSheet("font: 11pt \"Arial\";")

self.label\_16.setObjectName("label\_16")

self.verticalLayout\_10.addWidget(self.label\_16)

self.lineEdit\_p0 = QtWidgets.QLineEdit(self.layoutWidget2)

self.lineEdit\_p0.setEnabled(False)

self.lineEdit\_p0.setMaximumSize(QtCore.QSize(21, 16777215))

self.lineEdit\_p0.setObjectName("lineEdit\_p0")

self.verticalLayout\_10.addWidget(self.lineEdit\_p0)

self.horizontalLayout\_4.addLayout(self.verticalLayout\_10)

self.layoutWidget3 = QtWidgets.QWidget(self.centralwidget)

self.layoutWidget3.setGeometry(QtCore.QRect(1, 151, 432, 50))

self.layoutWidget3.setObjectName("layoutWidget3")

self.verticalLayout\_19 = QtWidgets.QVBoxLayout(self.layoutWidget3)

self.verticalLayout\_19.setContentsMargins(0, 0, 0, 0)

self.verticalLayout\_19.setObjectName("verticalLayout\_19")

self.label\_25 = QtWidgets.QLabel(self.layoutWidget3)

self.label\_25.setStyleSheet("font: 12pt \"Arial\";")

self.label\_25.setObjectName("label\_25")

self.verticalLayout\_19.addWidget(self.label\_25)

self.horizontalLayout\_7 = QtWidgets.QHBoxLayout()

self.horizontalLayout\_7.setObjectName("horizontalLayout\_7")

self.label\_5 = QtWidgets.QLabel(self.layoutWidget3)

self.label\_5.setStyleSheet("font: 11pt \"Arial\";")

self.label\_5.setObjectName("label\_5")

self.horizontalLayout\_7.addWidget(self.label\_5)

self.c7 = QtWidgets.QCheckBox(self.layoutWidget3)

self.c7.setEnabled(False)

self.c7.setStyleSheet("font: 12pt \"Arial\";")

self.c7.setObjectName("c7")

self.horizontalLayout\_7.addWidget(self.c7)

self.c6 = QtWidgets.QCheckBox(self.layoutWidget3)

self.c6.setEnabled(False)

self.c6.setStyleSheet("font: 12pt \"Arial\";")

self.c6.setObjectName("c6")

self.horizontalLayout\_7.addWidget(self.c6)

self.c5 = QtWidgets.QCheckBox(self.layoutWidget3)

self.c5.setEnabled(False)

self.c5.setStyleSheet("font: 12pt \"Arial\";")

self.c5.setObjectName("c5")

self.horizontalLayout\_7.addWidget(self.c5)

self.c4 = QtWidgets.QCheckBox(self.layoutWidget3)

self.c4.setEnabled(False)

self.c4.setStyleSheet("font: 12pt \"Arial\";")

self.c4.setObjectName("c4")

self.horizontalLayout\_7.addWidget(self.c4)

self.c3 = QtWidgets.QCheckBox(self.layoutWidget3)

self.c3.setEnabled(False)

self.c3.setStyleSheet("font: 12pt \"Arial\";")

self.c3.setObjectName("c3")

self.horizontalLayout\_7.addWidget(self.c3)

self.c2 = QtWidgets.QCheckBox(self.layoutWidget3)

self.c2.setEnabled(False)

self.c2.setStyleSheet("font: 12pt \"Arial\";")

self.c2.setObjectName("c2")

self.horizontalLayout\_7.addWidget(self.c2)

self.c1 = QtWidgets.QCheckBox(self.layoutWidget3)

self.c1.setEnabled(False)

self.c1.setStyleSheet("font: 12pt \"Arial\";")

self.c1.setObjectName("c1")

self.horizontalLayout\_7.addWidget(self.c1)

self.c0 = QtWidgets.QCheckBox(self.layoutWidget3)

self.c0.setEnabled(False)

self.c0.setStyleSheet("font: 12pt \"Arial\";")

self.c0.setObjectName("c0")

self.horizontalLayout\_7.addWidget(self.c0)

self.verticalLayout\_19.addLayout(self.horizontalLayout\_7)

self.layoutWidget4 = QtWidgets.QWidget(self.centralwidget)

self.layoutWidget4.setGeometry(QtCore.QRect(120, 370, 433, 142))

self.layoutWidget4.setObjectName("layoutWidget4")

self.verticalLayout\_20 = QtWidgets.QVBoxLayout(self.layoutWidget4)

self.verticalLayout\_20.setContentsMargins(0, 0, 0, 0)

self.verticalLayout\_20.setObjectName("verticalLayout\_20")

self.label\_2 = QtWidgets.QLabel(self.layoutWidget4)

self.label\_2.setStyleSheet("font: 25 14pt \"Bahnschrift Light\";")

self.label\_2.setObjectName("label\_2")

self.verticalLayout\_20.addWidget(self.label\_2)

self.lineEdit\_result = QtWidgets.QLineEdit(self.layoutWidget4)

self.lineEdit\_result.setMinimumSize(QtCore.QSize(431, 111))

self.lineEdit\_result.setMaximumSize(QtCore.QSize(431, 16777215))

self.lineEdit\_result.setStyleSheet("font: 36pt \"Bahnschrift SemiLight Condensed\";\n"

"")

self.lineEdit\_result.setText("")

self.lineEdit\_result.setObjectName("lineEdit\_result")

self.verticalLayout\_20.addWidget(self.lineEdit\_result)

MainWindow.setCentralWidget(self.centralwidget)

self.statusbar = QtWidgets.QStatusBar(MainWindow)

self.statusbar.setObjectName("statusbar")

MainWindow.setStatusBar(self.statusbar)

self.retranslateUi(MainWindow)

QtCore.QMetaObject.connectSlotsByName(MainWindow)

def retranslateUi(self, MainWindow):

\_translate = QtCore.QCoreApplication.translate

MainWindow.setWindowTitle(\_translate("MainWindow", "超前位加法器"))

self.label\_6.setText(\_translate("MainWindow", "输入数据"))

self.label.setText(\_translate("MainWindow", "加数1"))

self.a7.setText(\_translate("MainWindow", "a7"))

self.a6.setText(\_translate("MainWindow", "a6"))

self.a5.setText(\_translate("MainWindow", "a5"))

self.a4.setText(\_translate("MainWindow", "a4"))

self.a3.setText(\_translate("MainWindow", "a3"))

self.a2.setText(\_translate("MainWindow", "a2"))

self.a1.setText(\_translate("MainWindow", "a1"))

self.a0.setText(\_translate("MainWindow", "a0"))

self.label\_3.setText(\_translate("MainWindow", "加数2"))

self.b7.setText(\_translate("MainWindow", "b7"))

self.b6.setText(\_translate("MainWindow", "b6"))

self.b5.setText(\_translate("MainWindow", "b5"))

self.b4.setText(\_translate("MainWindow", "b4"))

self.b3.setText(\_translate("MainWindow", "b3"))

self.b2.setText(\_translate("MainWindow", "b2"))

self.b1.setText(\_translate("MainWindow", "b1"))

self.b0.setText(\_translate("MainWindow", "b0"))

self.pushButton.setText(\_translate("MainWindow", "开始计算"))

self.label\_4.setText(\_translate("MainWindow", "华北理工大学--马昕"))

self.label\_8.setText(\_translate("MainWindow", "本地进位"))

self.label\_17.setText(\_translate("MainWindow", "g7"))

self.lineEdit\_g7.setText(\_translate("MainWindow", "0"))

self.label\_18.setText(\_translate("MainWindow", "g6"))

self.lineEdit\_g6.setText(\_translate("MainWindow", "0"))

self.label\_19.setText(\_translate("MainWindow", "g5"))

self.lineEdit\_g5.setText(\_translate("MainWindow", "0"))

self.label\_20.setText(\_translate("MainWindow", "g4"))

self.lineEdit\_g4.setText(\_translate("MainWindow", "0"))

self.label\_21.setText(\_translate("MainWindow", "g3"))

self.lineEdit\_g3.setText(\_translate("MainWindow", "0"))

self.label\_22.setText(\_translate("MainWindow", "g2"))

self.lineEdit\_g2.setText(\_translate("MainWindow", "0"))

self.label\_23.setText(\_translate("MainWindow", "g1"))

self.lineEdit\_g1.setText(\_translate("MainWindow", "0"))

self.label\_24.setText(\_translate("MainWindow", "g0"))

self.lineEdit\_g0.setText(\_translate("MainWindow", "0"))

self.label\_7.setText(\_translate("MainWindow", "传递进位"))

self.label\_9.setText(\_translate("MainWindow", "p7"))

self.lineEdit\_p7.setText(\_translate("MainWindow", "0"))

self.label\_10.setText(\_translate("MainWindow", "p6"))

self.lineEdit\_p6.setText(\_translate("MainWindow", "0"))

self.label\_11.setText(\_translate("MainWindow", "p5"))

self.lineEdit\_p5.setText(\_translate("MainWindow", "0"))

self.label\_12.setText(\_translate("MainWindow", "p4"))

self.lineEdit\_p4.setText(\_translate("MainWindow", "0"))

self.label\_13.setText(\_translate("MainWindow", "p3"))

self.lineEdit\_p3.setText(\_translate("MainWindow", "0"))

self.label\_14.setText(\_translate("MainWindow", "p2"))

self.lineEdit\_p2.setText(\_translate("MainWindow", "0"))

self.label\_15.setText(\_translate("MainWindow", "p1"))

self.lineEdit\_p1.setText(\_translate("MainWindow", "0"))

self.label\_16.setText(\_translate("MainWindow", "p0"))

self.lineEdit\_p0.setText(\_translate("MainWindow", "0"))

self.label\_25.setText(\_translate("MainWindow", "过程信息显示"))

self.label\_5.setText(\_translate("MainWindow", "是否进位"))

self.c7.setText(\_translate("MainWindow", "c7"))

self.c6.setText(\_translate("MainWindow", "c6"))

self.c5.setText(\_translate("MainWindow", "c5"))

self.c4.setText(\_translate("MainWindow", "c4"))

self.c3.setText(\_translate("MainWindow", "c3"))

self.c2.setText(\_translate("MainWindow", "c2"))

self.c1.setText(\_translate("MainWindow", "c1"))

self.c0.setText(\_translate("MainWindow", "c0"))

self.label\_2.setText(\_translate("MainWindow", "结果显示"))