**数据结构实验报告2**

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**实验名称**： 初识python语言

**实验要求：（1）掌握python语言的基本语法；**

**（2）逐行逐句地分析python语言的基本元素；**

**（3）掌握python语言绘制图形的一般方法；**

**（4）利用turtle库绘制图形。**

**实验题目：python程序实例的运用**

**算法实现：2.1 实例1的修改**

**TempStr = input("请输入带有符号的温度值:")**

**if TempStr[-1] in ['F','f']:**

**C= (eval(TempStr[0:-1])-32)/1.8**

**print("转换后的温度是{:.0f}C".format(C))**

**elif TempStr[-1] in ['C','c']:**

**F=1.8\*eval(TempStr[0:-1])+32**

**print("转换后的温度是{:.0f}F".format(F))**

**else:**

**print("输入格式错误")**

**2.2汇率兑换程序**

**Money=input("请输入带有符号的金钱数目")**

**if Money[-1] in ['y','Y']:**

**D=6\*eval(Money[-1])**

**print("兑换后的金钱是{:.2f})D".format(D)**

**elif Money[-1] in ['d','D']:**

**Y=eval(Money[:-1])/6**

**print("兑换后的金钱是{:.2f}F:".format(Y)**

**else:**

**print("输入错误:")**

**2.3 实例2的修改**

**import turtle**

**C = [“black”,“purple”，“red”,“green”，“blue”]**

turtle.setup(650,550,200,200)

turtle.penup()

turtle.fd(-250)

turtle.pendown()

turtle.pensize(25)

turtle.seth(-40)

for i in range(4)

turle.pencolor(C[i])

turtle.circle(40,80)

turtle.circle(-40,80)

i = i+1

turtle.pencolor(C[i%5])

turtle.circle(40,80/2)

turtle.fd(40)

turtle.circle(20,180)

turtle.fd(40\*2/3)

**2.4 等边三角形的绘制**

**import turtle**

**turtle.penup()**

**turtle.fd(60)**

**turtle.pendown()**

**turtle.pensize(6)**

**turtle.pencolor("black")**

**turtle.seth(60)**

**turtle.fd(120)**

**turtle.seth(-60)**

**turtle.fd(120)**

**turtle.seth(-180)**

**turtle.fd(120)**

**2.5 叠加三角形的绘制**

**import turtle**

**turtle.penup()**

**turtle.fd(-120)**

**turtle.pendown()**

**turtle.pensize(6)**

**turtle.pencolor("purple")**

**turtle.seth(-120)**

**turtle.fd(120)**

**turtle.seth(0)**

**turtle.fd(120)**

**turtle.seth(120)**

**turtle.fd(120)**

**turtle.seth(0)**

**turtle.fd(120)**

**turtle.seth(-120)**

**turtle.fd(120)**

**turtle.seth(0)**

**turtle.fd(120)**

**turtle.seth(120)**

**turtle.fd(240)**

**turtle.seth(-120)**

**turtle.fd(120)**

**2.6 无角正方形的绘制**

**import turtle**

**turtle.setup(650,350,200,200)**

**turtle.penup()**

**turtle.fd(-30)**

**turtle.pendown()**

**turtle.pensize(5)**

**turtle.pencolor("green")**

**turtle.seth(-90)**

**turtle.fd(60)**

**turtle.penup()**

**turtle.fd(30)**

**turtle.seth(0)**

**for i in(0,90,180):**

**turtle.seth(i)**

**turtle.fd(30)**

**turtle.pendown()**

**turtle.fd(60)**

**turtle.penup()**

**turtle.fd(30)**

**2.7 六角形的绘制**

**import turtle**

**turtle.setup(650,350,200,200)**

**turtle.penup()**

**turtle.fd(-30)**

**turtle.pendown()**

**turtle.pensize(5)**

**turtle.pencolor("green")**

**turtle.seth(-90)**

**turtle.fd(60)**

**turtle.penup()**

**turtle.fd(30)**

**turtle.seth(0)**

**for i in(0,90,180):**

**turtle.seth(i)**

**turtle.fd(30)**

**turtle.pendown()**

**turtle.fd(60)**

**turtle.penup()**

**turtle.fd(30)**

**2.8 正方形螺旋线的绘制**

**from turtle import \***

**pensize(1)**

**pencolor("yellow")**

**i=1**

**while(i<=160):**

**seth(90)**

**fd(i)**

**seth(180)**

**fd(i+1)**

**seth(-90)**

**fd(i+2)**

**seth(0)**

**fd(i+3)**

**i=i+4**

**seth(90)**

**fd(161)**

**seth(180)**

**fd(162)**

**seth(-90)**

**fd(163)**

**2.9 自定义python蟒蛇绘制**

**import turtle**

**C = ["black","purple","red","green","blue"]**

**turtle.setup(650,550,200,200)**

**turtle.penup()**

**turtle.fd(-250)**

**turtle.pendown()**

**turtle.pensize(25)**

**turtle.seth(-60)**

**for i in range(4):**

**turtle.pencolor(C[i])**

**turtle.circle(40,80)**

**turtle.circle(-40,80)**

**i = i+1**

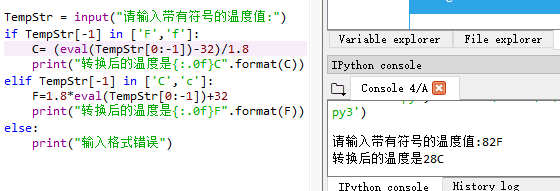
**turtle.pencolor(C[i%5])**

**turtle.circle(40,80/2)**

**turtle.fd(40)**

**turtle.circle(20,180)**

**turtle.fd(40\*2/3)**

**实验结果：**

