使用Turtle库绘制时钟

一、项目介绍

Turtle库是Python自带的绘图库，可以让我们像使用画笔一样画出好看的图形。接下来我们就使用Tutle库配合datetime库来绘制一个时钟。

二、项目代码及结果展示

2.1 项目代码

```python
from turtle import *
from datetime import *

def skip(step):
    penup()
    forward(step)
    pendown()

def mkHand(name, length):
    reset()   #清空窗口并重设为默认值
    skip(-length*0.1)
    begin_poly()
    forward(length*1.1)
    end_poly()
    handForm = get_poly()
    register_shape(name, handForm)

def init():
    global secHand, minHand, hurHand, show
    mode("logo")
    #初始化三个表针元素
    mkHand("secHand", 135)
    mkHand("minHand",  110)
    mkHand("hurHand", 90)
    secHand = Turtle()
    secHand.shape("secHand")
    minHand = Turtle()
    minHand.shape("minHand")
```
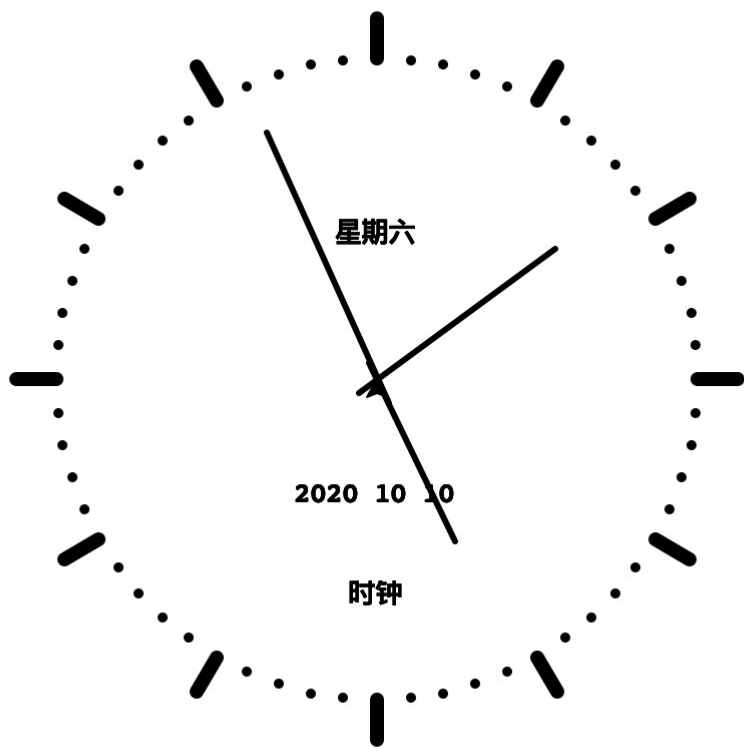
```python
29    hurHand = Turtle()
30    hurHand.shape("hurHand")
31    for hand in secHand, minHand, hurHand:
32        hand.shapesize(1, 1, 3)
33        hand.speed(0)
34    #实例化Turtle对象
35    show = Turtle()
36    show.hideturtle()
37    show.penup()
38
39 def setup(radius):
40    #设置表框
41    reset()
42    pensize(7)
43    for i in range(60):
44        skip(radius)
45        if i % 5 == 0:
46            forward(20)
47            skip(-radius-20)
48        else:
49            dot(5)
50            skip(-radius)
51        right(6)
52
53 def Week(t):
54    week = ["星期一", "星期二", "星期三",
55            "星期四", "星期五", "星期六", "星期日"]
56    return week[t.weekday()]
57
58 def Date(t):
59    year = t.year
60    month = t.month
61    day = t.day
62    return "%s %d %d" % (year, month, day)
63
64 def tick():
65    #表针动态显示
66    t = datetime.today()
67    second = t.second + t.microsecond*0.000001
68    minute = t.minute + second/60.0
69    hour = t.hour + minute/60.0
70    secHand.setheading(6*second) #每秒秒针转动6度
71    minHand.setheading(6*minute) #每分钟分针转动6度
72    hurHand.setheading(30*hour)  #每小时时针转动30度
```

```
73
74     tracer(False)    #不显示绘制过程，直接显示结果
75     show.forward(65)
76     show.write(Week(t), align="center",
77                     font=("Courier", 14, "bold"))
78     show.back(130)
79     show.write(Date(t), align="center",
80                     font=("Courier", 14, "bold"))
81     show.back(50)
82     show.write("时钟", align="center",
83                     font=("Courier", 14, "bold"))
84     show.home()
85     tracer(True)
86
87     ontimer(tick, 1000)#刷新时间为1s，即为1s后继续调用tick
88
89 def main():
90     tracer(False)
91     init()
92     setup(160)
93     tracer(True)
94     tick()
95     mainloop()
96
97 main()
```

2.2 结果展示

星期六

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时钟