Python Assignment

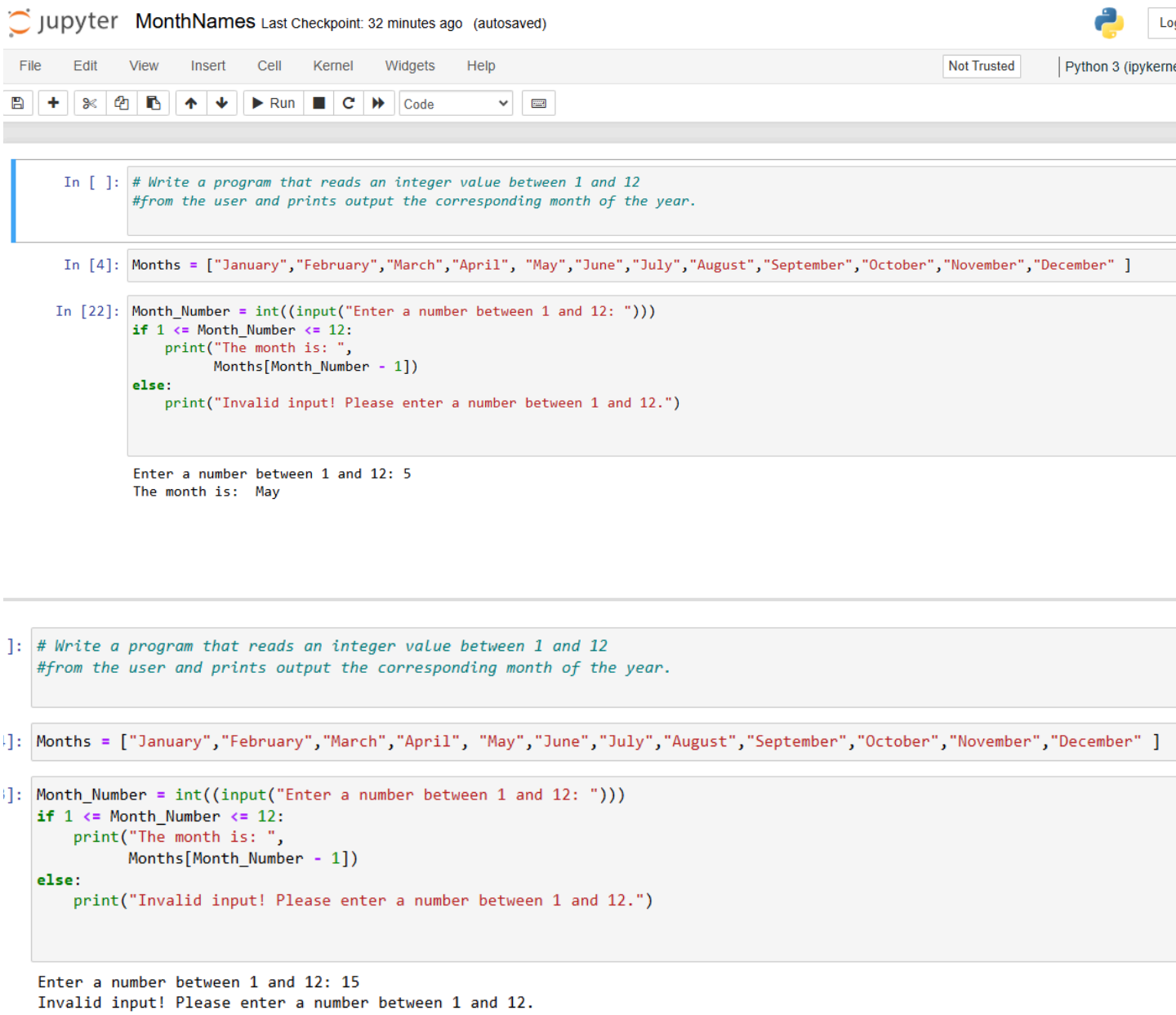
# Conditional and Looping Statements

## Exercise 1

Name your file: MonthNames.py

Write a program that reads an integer value between 1 and 12 from the user and prints output the corresponding month of the year.

An example run of the program (numbers in bold are typed in by the user) Enter the month: 3 Month 3 is March



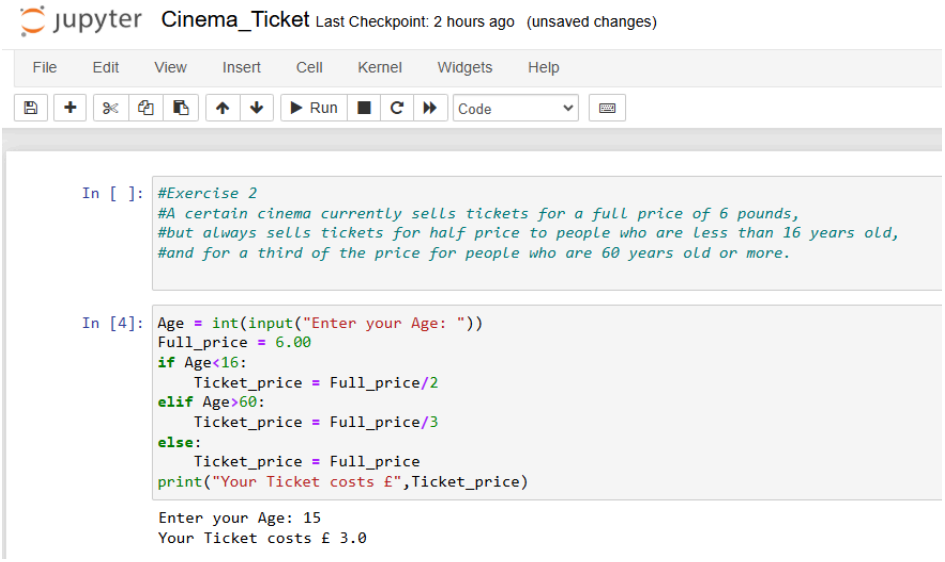
## Exercise 2

A certain cinema currently sells tickets for a full price of 6 pounds, but always sells tickets for half price to people who are less than 16 years old, and for a third of the price for people who are 60 years old or more.

An example run of the program (numbers in bold are typed in by the user)

Enter your age: 63

Your ticket costs £2.00




```
In [5]: Age = int(input("Enter your Age: "))
        Full_price = 6.00
        if Age<16:
            Ticket_price = Full_price/2
        elif Age>60:
            Ticket_price = Full_price/3
        else:
            Ticket_price = Full_price
        print("Your Ticket costs £",Ticket_price)

        Enter your Age: 35
        Your Ticket costs £ 6.0
```

```
In [6]: Age = int(input("Enter your Age: "))
        Full_price = 6.00
        if Age<16:
            Ticket_price = Full_price/2
        elif Age>60:
            Ticket_price = Full_price/3
        else:
            Ticket_price = Full_price
        print("Your Ticket costs £",Ticket_price)

        Enter your Age: 65
        Your Ticket costs £ 2.0
```

**Exercise 3**

Name your file: BodyMassIndex.py

Write a program to calculate your BMI and give weight status.

Body Mass Index (BMI) is an internationally used measurement to check if you are a healthy weight for your height.

The metric BMI formula accepts weight in kilograms and height in meters:

BMI= weight(kg) / height2(m2)

BMI Weight Status Categories table

| BMI range - kg / m2 | Category |
|---|---|
| Below 18.5 | Underweight |
| 18.5 -24.9 | Normal |
| 25 - 29.9 | Overweight |
| 30 & Above | Obese |

An example run of the program (numbers in bold are typed in by the user)

Enter your weight in (kg): 75

Enter your height in (m): 1.70

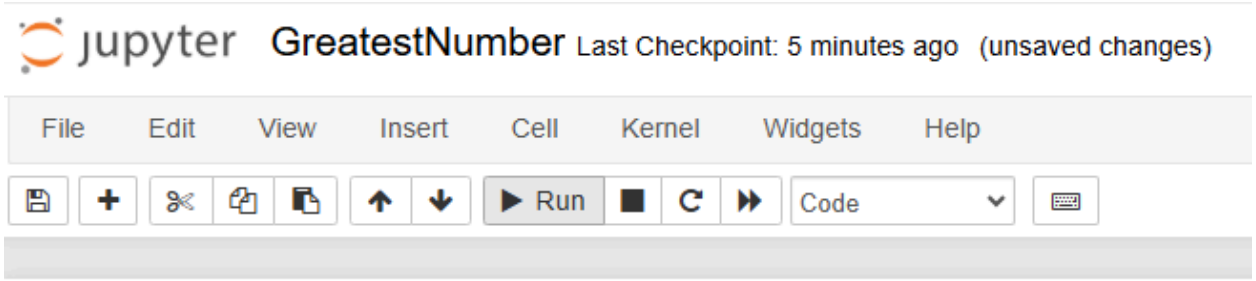
Your BMI is: 25.95 You are in the “overweight” range.

In [4]:
```
weight = float(input("Enter your weight in (kg): "))
height = float(input("Enter your height in (m): "))
BMI = weight / (height **2)
if BMI<18.5:
    status = "Underweight"
elif 18.5<=BMI<=24.9:
    status = "Normal"
elif 25<=BMI<=29.9:
    status = "Overweight"
else:
    status = "Obese"
print("Your BMI is",BMI)
print("You are in the",status,"Range")
```

```
Enter your weight in (kg): 60
Enter your height in (m): .8
Your BMI is 93.74999999999999
You are in the Obese Range
```

**Exercise 4**

Write a Python program to receive 3 numbers from the user and print the greatest among them.




In [ ]:
```
#Exercise 4
#Write a Python program to receive 3 numbers from the user
#and print the greatest among them.
```

In [1]:
```
Number1 = float(input("Enter the first Number: "))
Number2 = float(input("Enter the second Number: "))
Number3 = float(input("Enter the third Number: "))
greatest = max(Number1,Number2,Number3)
print("The greatest number is: ",greatest)
```

```
Enter the first Number: 15
Enter the second Number: 25
Enter the third Number: 35
The greatest number is:  35.0
```

**Exercise 5**

Find the factorial of a given number using loops(note the number is received from the user)

In [ ]:
```
#Exercise 5
#Find the factorial of a given number using loops
```

In [1]:
```
Number = int(input("Enter the number: "))
factorial = 1
for i in range(1,Number+1):
    factorial = factorial * i
print("Factorial of the number", Number, "is" ,factorial)
```

```
Enter the number: 5
Factorial of the number 5 is 120
```

**Exercise 6**
Reverse a number using while loop

In [ ]:
```
#Exercise 6
#Reverse a number using while loop
```

In [1]:
```
number = int(input("Enter a number: "))
reversed_number = 0
while number>0:
    digit = number % 10
    reversed_number = reversed_number * 10 + digit
    number = number // 10
print("The reversed Number is: ",reversed_number)
```

```
Enter a number: 12345
The reversed Number is:  54321
```

**Exercise 7**
Finding the multiples of a number using loop

In [ ]:
```
#Exercise 7
#Finding the multiples of a number using loop
```

In [6]:
```
number = int(input("Enter the number: "))
count = int(input("No. of multiples to find : "))
print(count, "Multiples of", number, ": ")
for i in range(1, count+1):
    multiple = number * i
    print(multiple)
```

```
Enter the number: 12
No. of multiples to find : 6
6 Multiples of 12 :
12
24
36
48
60
72
```

**Exercise 8**
Write a program to print the inputted value as it is and break the loop if the value is 'done'.

In [ ]:
```
#Exercise 8
#Write a program to print the inputted value as it is and
#break the loop if the value is 'done'.
```

In [2]:
```
while True:
    user_input = input("Enter a value (type 'done' to exit): ")
    if user_input == 'done':
        break
    print(user_input)
```

```
Enter a value (type 'done' to exit): hello there
hello there
Enter a value (type 'done' to exit): finished
finished
Enter a value (type 'done' to exit): done
```

**Exercise 9**

Write a program that prints the numbers from 1 to 10.
But for multiples of three print "Fizz" instead of the number and for the multiple of five print "Buzz".
For numbers which are multiples of both three and five print "FizzBuzz"

In [ ]:
```
#Exercise 9
#Write a program that prints the numbers from 1 to 10.
#But for multiples of three print "Fizz" instead of the number
#and for the multiple of five print "Buzz".
#For numbers which are multiples of both three and five print "FizzBuzz"
```

In [1]:
```
for i in range(1,11):
    if i % 3 == 0:
        print("Fizz")
    elif i % 5 == 0:
        print("Buzz")
    elif i%3==0 and i%5==0:
        print("FizzBuzz")
    else:
        print(i)
```

```
1
2
Fizz
4
Buzz
Fizz
7
8
Fizz
Buzz
```

**Exercise 10**

Write a program to print the following pattern:
5 4 3 2 1
4 3 2 1
3 2 1
2 1
1

In [ ]:
```
#Exercise 10

#Write a program to print the following pattern:
#5 4 3 2 1
#4 3 2 1
#3 2 1
#2 1
#1
```

In [1]:
```
n = 5
for i in range(n,0,-1):
    for j in range(i,0,-1):
        print(j, end = " ")
    print()
```

```
5 4 3 2 1
4 3 2 1
3 2 1
2 1
1
```