

Python Assignment

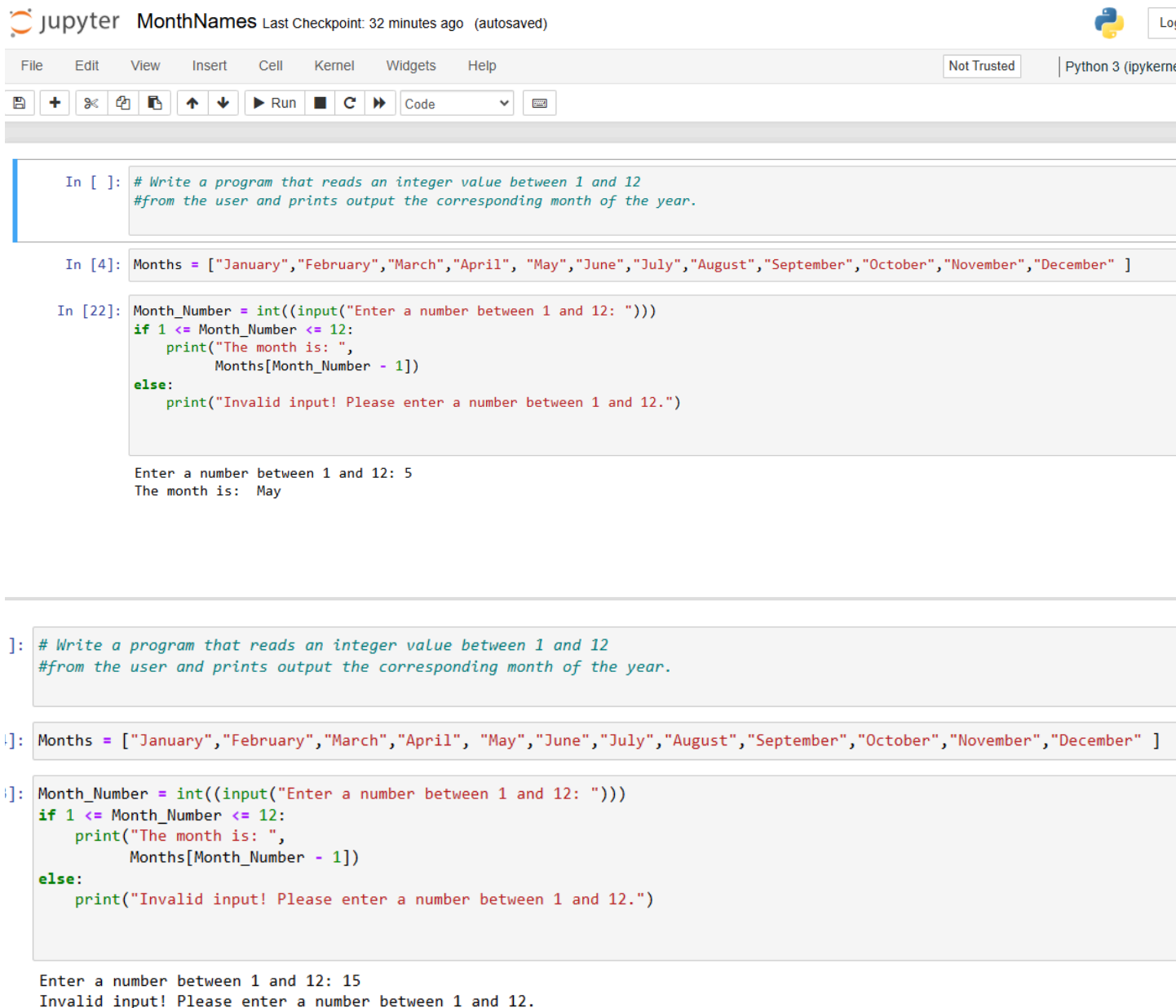
Conditional and Looping Statements

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



The image shows a Jupyter Notebook interface with the title "MonthNames". The top bar indicates "Last Checkpoint: 32 minutes ago (autosaved)" and shows a "Not Trusted" status. The menu bar includes File, Edit, View, Insert, Cell, Kernel, Widgets, and Help. The toolbar contains icons for saving, adding, deleting, and running cells, along with a dropdown menu set to "Code".

The notebook contains three code cells:

```
In [ ]: # Write a program that reads an integer value between 1 and 12
        #from the user and prints output the corresponding month of the year.
```

```
In [4]: Months = ["January", "February", "March", "April", "May", "June", "July", "August", "September", "October", "November", "December" ]
```

```
In [22]: Month_Number = int((input("Enter a number between 1 and 12: ")))
         if 1 <= Month_Number <= 12:
             print("The month is: ",
                   Months[Month_Number - 1])
         else:
             print("Invalid input! Please enter a number between 1 and 12.")
```

The output of the second cell shows the user entering 5 and the program outputting "The month is: May".

```
Enter a number between 1 and 12: 5
The month is: May
```

The third cell is identical to the second one, but the output shows an invalid input:

```
Enter a number between 1 and 12: 15
Invalid input! Please enter a number between 1 and 12.
```


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

 **jupyter** Cinema_Ticket Last Checkpoint: 2 hours ago (unsaved changes)

File Edit View Insert Cell Kernel Widgets Help



In []: *#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.

In [4]: `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: 15
Your Ticket costs £ 3.0

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:

$BMI = \text{weight(kg)} / \text{height}^2(\text{m}^2)$

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.

 **jupyter** **GreatestNumber** Last Checkpoint: 5 minutes ago (unsaved changes)

File Edit View Insert Cell Kernel Widgets Help

           Code  

```
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
```
