

# *Hands-On Prerequisite Python in AI*

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## *Exercises 1 && 2*

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*Deadline: 2023 5 October*

*Score: 650*

2023 28 September

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## *Exercises 1*

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*Score: 350*

## Question 01 (Basic)

50

❖ Change the type of each of the following variables to the requested type.

**#convert to int**

```
num1 = 12.45  
num2 = "12.45"  
flag1 = True  
code = "a123"  
num3 = "0123"
```

**#convert to float**

```
num4 = 10  
num5 = 4.  
num6 = "4.7"  
num7 = "51"  
name = "python"
```

**#convert to bool**

```
flag3 = False  
flag4 = "False"  
flag5 = false  
name1 = ""  
name2 = " "  
num8 = 0
```

**#convert to str**

```
flag = False  
num = 0.000
```

## Question 02 (Basic)

50

- ❖ Explain the results of the following codes step by step, and if there are errors, explain the reason for the error and fix it.

```
1 x = "300"  
2 y = int(x)  
3 z = y + 200  
4 a = float(z)  
5 b = a + x  
6 c = int(b) + 100
```

```
1 x = "250"  
2 y = int(x)  
3 z = y // 3  
4 a = str(z)  
5 b = a + x  
6 c = int(b) // 2
```

## *Question 03 (Basic)*

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- ❖ **Prompt the user for a string. Output True for "yes" or "no" inputs, and False for all other inputs, without using conditional statements.**

## *Question 04 (Basic)*

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- ❖ **Prompt the user to enter a string. Print True if the string is non-empty and False otherwise, without using any conditional statements (if, elif, else).**

## *Question 05 (Basic)*

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- ❖ **write a program that prompts the user to enter a temperature in Celsius. Your program should then convert this temperature to Fahrenheit and print the result.**

## Question 06 (Basic)

100

- ❖ Explain the results of the following codes, and if there are errors, explain the reason for the error and fix it.

```
1 num1, num2, num3 = 17, 1.8, 28
2 num4, num5 = 45, 12, 19
3 num6, num7, num8 = 200, 300
4 name, score, passed = "Sara", 19, True
5 var1 = var2 = var3 = 500
6
```

```
8 num1 = 20
9 num2 = 30
0 num1, num2 = num2, num1
1 print(num1, num2)
```



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## *Exercises 2*

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*Score: 300*

## *Question 01 (Condition)*

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- ❖ **Write a program that prompts the user for a letter. If the letter is 'a', 'e', 'i', 'o', or 'u', print "Vowel". Otherwise, print "Consonant".**

## *Question 02 (Condition)*

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- ❖ **Write a conditional statement to check if a given variable "number" is within the range 10 to 20 inclusive. Print "in Range" if it is, otherwise print "Out of Range".**

## *Question 03 (Condition)*

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- ❖ **Write a program that prompts the user two numbers. Write a conditional statement to check if the sum of them is greater than 20. If yes, print "Greater", else print "Not Greater".**

## *Question 04 (Condition)*

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- ❖ **Write a program that prompts the user for three different colors (as strings). If all three colors are the same, print "All colors match". If only two colors match, print "Two colors match". If no colors match, print "No colors match".**

## Question 05 (Condition)

100

- ❖ **define two variables, num1 and num2, that can have different data types (int, float, or str). Your task is to write a Python program that adheres to the following conditions based on the data types of num1 and num2:**
  - ✓ If both variables are of type str, concatenate them and print the result.
  - ✓ If both variables are of type int, print the difference (subtract the second variable from the first).
  - ✓ If one variable is of type int and the other variable is of type float, print the result of dividing the integer by the float. If either number is zero, print "Cannot divide by zero".
  - ✓ For any other combination of data types, print "Invalid syntax".

# Thanks

**Good Luck!**

Don't give up on your dreams 😊