1- Write a program which prints on the screen the message Hello World!

2- Create a program that read the name of a person e prints a message of Welcome to him/her.

Example: What is your name?

Welcome person_name! it's a pleasure to meet you!

3- Create a program that reads the name and the salary of the employee showing a final message.

Example:

Name of the employee: Josh

Salary: $2000.00

The employee Josh has a salary of $2000.00 dollars.

4- Create a program which receives two integer numbers and prints the sum of them.

5- Create a program which receives two grades of a student in a subject and prints on the screen his average in the subject

6- Create a program which ask the user to input an integer number and then, prints on the screen the predecessor and the successor of it.

7- Create an algorithm that reads a real number and shows on the screen its double and the third part.

Ex:

Enter a number: 3.5

The double of 3.5 is 7.0

One third of 3.5 is 1.16666

8- Write a program that reads a distance in meters and displays the values.
relative to other measures.
Ex:
Enter a distance in meters: 185.72
The distance of 85.7m corresponds to:
0.18572Km;
1.8572Hm;
18,572 Dam;
1857.2dm;
18572.0cm;
185720.0mm;

9- Make an algorithm that reads how much money a person has in their wallet (in BRL) and show how many dollars the person can buy. Consider US$1.00 = R$3.45.

10- Write an algorithm that reads the width and height of a wall, calculates and show the area to be painted and the amount of paint needed for the job, knowing that each liter of paint paints an area of 2 square meters.

11- Develop logic that reads the values of A, B, and C from an equation of the second degree and show the value of Delta.

12- Create a program that reads the price of a product, calculates and displays your PROMOTIONAL PRICE, with 5% discount.

13- Write an algorithm that reads an employee's salary, calculates and displays the new salary with a 15% increase.

14- The car rental company needs your help to charge for its services. Write a program that asks for the number of kilometers traveled by a rented car and the number of days for which it was rented. Calculate the total price to be paid, knowing that the car costs R$90 per day and R$0.20 per km driven.

15- Create a program that reads the number of days worked in a month and displays the salary of an employee, knowing that he works 8 hours a day and earns R$25 per hour worked.

16- Write a program to calculate the reduction in the lifetime of a smoker. Ask the number of cigarettes smoked per day and how old he/she is. already smoked. Consider that a smoker loses 10 minutes of life with each cigarette. Calculate how many days of life a smoker will lose and display the total in days.

17- Write a program that asks for the speed of a car. If the driver exceeds 80Km/h, display a message saying that the traffic cop gave a ticket for running above the speed allowed. In that case, display the value of the speed ticket, charging R$5 for each Km above the permitted speed.

18- Write a program that reads a person's year of birth, calculate the age of the person and then show whether the person can vote or not.

19- Create an algorithm that reads a student's name and two grades, calculates their average and show on the screen. At the end, analyze the average and show if the student had or not a good performance (if it was above average 7.0).

20- Write a program that reads an integer and prints whether it is even or odd.

21- Make an algorithm that reads a given year and shows whether it is a LEAP year or not.

22- Write an algorithm to read a person's age and tell if can take driver's license or not.

23- In an exclusive promotion for Women's Day, a store wants to give discounts for everyone, but especially for women. Make a program that reads name, gender and the amount of the customer's purchases and calculate the discounted price. Knowing that:
- Men get 5% of discount;
- Women get 13% of discount;

24- Make an algorithm that asks the distance a passenger wants travel in Km. Calculate the ticket price, charging $0.50 per km to trips up to 200Km and $0.45 for longer trips.

25- Create a program that reads the length of three-line segments. Analyze their lengths and say if it is possible to form a triangle with these straight. Mathematically, for three segments to form a triangle, the length on each side must be less than the sum of the other two.

26- Write an algorithm that reads two integers and compares them, showing one of the messages below:
- The first value is the largest;
- The second value is the largest;
- There is no greater value, both are equal;

27- Create a program that reads two grades from a student and calculates their average, showing a message at the end, according to the average reached:

- Average up to 4.9: FAILED;

- Average between 5.0 and 6.9: RECOVERY;

- Average 7.0 or higher: PASSED;

28- Write a program that reads the width and length of a field rectangular, calculating and displaying its area in m². the program also needs to show the classification of this land, according to the list below:

- Below 100m² = POPULAR LAND;

- Between 100m² and 500m² = MASTER LAND;

- Above 500m² = VIP LAND;

29- Develop a program that reads an employee's name, salary,

how many years he has worked at the company and show his new salary, readjusted from

according to the following table:

- Up to 3 years with the company: 3% increase;

- between 3 and 10 years: increase of 12.5%;

- 10 years or more: 20% increase;

30 - Redo algorithm 25, adding the feature of showing what type of triangle will be formed:

- EQUILATERAL: all sides equal;

- ISOSCELES: two equal sides;

- Scalene: all different sides;

31- Create a Rock-Paper-Scissors game.

32- Create a game where the computer will draw a number between 1 and 5 and the player will try to find out what was the amount drawn.

33- Write a program to approve or reject the bank loan for the purchase of a house. The program will ask for the value of the house, the buyer's salary and in how many years he will pay. Calculate the amount of the monthly installment, knowing that it cannot exceed 30% of salary or else the loan will be denied.

34 - The Body Mass Index (BMI) is a calculated value based on height and body weight of a person's weight. According to the BMI value, we can classify the individual within certain ranges:

- under 18.5: Underweight;

- between 18.5 and 25: ideal weight;

- between 25 and 30: Overweight;

- between 30 and 40: Obesity;

- over 40: Morbid obesity;

Note: BMI is calculated using the expression weight/height² (weight divided by the square from height).

35- A car rental company needs to charge for its services. O

Renting a car cost $90 per day for a popular car and $150 per day for a luxury car. In addition, the customer pays per miles travelled. make a program that reads the type of rented car (popular or luxury), how many days of rent and how many miles have been travelled. At the end show the price to be paid according to the

following table:

- Popular cars ($90 per day rental):
- Up to 100 miles travelled: $ 0.20 per mile;
- Over 100 miles travelled: $ 0.10 per mile;
- Luxury cars (R$150 per day rental):
- Up to 200 miles travelled: $ 0.30 per mile;
- Over 200 miles travelled: $ 0.25 per mile;

36- A healthy living program wants to give points for physical activities that can be exchanged for cash. The system works like this:

- Each hour of physical activity in the month is worth points
- up to 10 hours of activity per month: earn 2 points per hour
- from 10h to 20h of activity in the month: earn 5 points per hour
- over 20 hours of activity in the month: earn 10 points per hour
- For each point earned, the customer earns R$0.05 (5 cents)

Make a program that reads how many hours of activity a person has per month, calculate and show how many points she had and how much money she managed to earn.

37- A company needs to readjust the wage of its employees, giving an increase according to some factors. Make a program that reads the current wage, the employee's gender and how many years the employee has been with the company. At the end, show your new wage, based on the following table:

- Women:
- less than 15 years with the company: +5%;
- from 15 to 20 years with the company: +12%;
- more than 20 years with the company: +23%;
- Men:
- less than 20 years with the company: +3%;
- from 20 to 30 years with the company: +13%;
- more than 30 years in the company: +25%;

38- Write a program that displays the following count on the screen:

6 7 8 9 10 11

39- Create an algorithm that displays the following count on the screen:

10 9 8 7 6 5 4 3 2 1

40- Create an application that displays the following count on the screen:

0 3 6 9 12 15 18 It's over!

41- Write a program that displays the following count on the screen:

100 95 90 85 80 ... 0 It's over!

42- Write an algorithm that asks the user for a positive integer any and show a count up to that value:

Ex: Enter a value: 35

Count: 0 1 2 3 4 5 6 7 ... 33 34 35 It's over!

43- Develop an algorithm that counts down from 30 to 1, marking the numbers that are divisible by 4, exactly as shown below:

30 29 [28] 27 26 25 [24] 23 22 21 [20] 19 18 17 [16]...

44- Create an algorithm that reads the start value of the count, the end value and the increment, then showing all the values in the range:

Ex: Enter the first Value: 3

Enter the last Value: 10

Enter the increment: 2

Count: 3 5 7 9 It's over!

45- The previous program (Ex44) will have a problem when we enter the first value bigger than the last one. Solve this problem with code that works on any situation.

46- Create a program that calculates and displays on the screen the result of the sum between 6 + 8 + 10 + 12 + 14 + ... + 98 + 100.

47- Develop an application that displays the result of the following expression on the screen:
500 + 450 + 400 + 350 + 300 + ... + 50 + 0

48- Make a program that reads 7 integers and at the end shows the sum between them.

49- Create a program that reads 6 integers and at the end shows how many of them are even and how many are odd.

50- Develop a program that draws 20 numbers between 0 and 10 and

show on screen:

a) What were the numbers drawn?

b) How many numbers are above 5

c) How many numbers are divisible by 3?

51- Make an application that reads the price of 8 products. At the end, show on screen which was the highest and which was the lowest price entered.

52- Create an algorithm that reads the age of 10 people, showing at the end:

a) What is the average age of the group?

b) How many people are over 18 years old;

c) How many people are under 5 years old;

d) What was the oldest age read;

53- Make a program that reads the age and gender of 5 people, showing at the end:

a) How many men were registered;

b) How many women were registered;

c) The average age of the group;

d) The average age of men;

e) How many women are over 20 years old;

54- Develop an application that reads the weight and height of 7 people, showing at the end:

a) What was the average height of the group?

b) How many people weigh more than 90 kg;

c) How many people who weigh less than 50 kg are shorter than 1.60 m;

d) How many people who measure more than 1.90 m weigh more than 100 kg;

55- Let's improve the game we played in exercise 32. Now, the computer will draw a number between 1 and 10 and the player will have 4 attempts to try to get it right.

56- Create a program that reads several numbers from the keyboard and shows at the end the sum between them. Note: The program will be interrupted when the number 1111 is typed.

57- Develop an application that reads salary and gender for multiple employees. At the end, show the total wages paid to men and the total paid to women. The program will ask the user if it wants to continue or not, whenever you read an employee's data input.

58- Write an algorithm that reads the age of several students in a class. the program will stop when age 999 is entered. At the end, show how many students exist in the class and what is the average age of the group.

59- Create a program that reads the gender and age of multiple people. The program goes ask each person whether the user wants to continue or not. At the end, show:

a) what is the greatest age read;

b) how many men were registered;

c) how old is the youngest woman;

d) what is the average age of men;

60- Develop an algorithm that reads the name, age, and gender of multiple people.

The program will ask whether the user wants to continue or not. At the end, show:

a) The name of the oldest person;

b) The name of the youngest woman;

c) The average age of the group;

d) How many men are over 30;

e) How many women are under 18;

61- Create a program that displays the following count on the screen

0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, It's over!

62- Write a program that reads the age of

many people. At each loop, you must ask the user if he wants or

do not continue to enter data. In the end, when the user decides to stop, show

on the screen:

a) How many ages were entered;

b) What is the average between the ages entered;

c) How many people are 21 or older.

63- Create a program that reads several numbers.

At each loop, ask if the user wants to continue or not. No ending, show on

screen:

a) The sum of all values;

b) What was the smallest amount entered;

c) The mean of all values;

d) How many values are even?

64- Develop a program using the “for” structure that displays on the screen the following count:

0 5 10 15 20 25 30 35 40 It's over!

65- Develop a program using the “for” structure that displays on the screen the following count:

100 90 80 70 60 50 40 30 20 10 0 It's over

66- Write a program that reads any number and prints the multiplication table of that number.

number, using the “for” structure.

Ex: Enter a value: 5

5 x 1 = 5

5 x 2 = 10

5 x 3 = 15...

67- Write a program using the “for” structure that reads an integer positive and display a count from 0 to the typed value on the screen:

Ex: Enter a value: 9

Count: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, END!

68- Create a program that reads the sex and weight of 8 people, using the structure

"for". At the end, show on screen:

a) How many women were registered;

b) How many men weigh more than 100 kg;

c) Average weight among women;

d) The highest weight among men.

69- Develop a program that reads the first term and common difference of a AP (Arithmetic Progression), showing on the screen the first 10 elements of the AP and the sum of all values in the sequence.

70- Write a program that displays the first 10 elements of the Sequence of Fibonacci:

71- Write a program that automatically fills a numeric array with 8 positions as below:

999 999 999 999 999 999 999 999 (Numbers)

0 1 2 3 4 5 6 7 (Positions)

72- Create a program that autocompletes a numerical vector with 10 positions, as follows:

5 10 15 20 25 30 35 40 45 50 (Numbers)

0 1 2 3 4 5 6 7 8 9 (Positions)

73- Create a program that autocompletes a numerical vector with 10 positions, as follows:

9 8 7 6 5 4 3 2 1 0 (Numbers)

0 1 2 3 4 5 6 7 8 9 (Positions)

74- Create a program that autocompletes a numerical vector with 10 positions, as follows:

9 8 7 6 5 4 3 2 1 0 (Numbers)

0 1 2 3 4 5 6 7 8 9 (Positions)

75- Create a program that autocompletes a numerical array with 15 positions with the first elements of the Fibonacci sequence:

1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 (Numbers)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 (Positions)

76- Create a program that automatically fills a numeric array with 7 numbers randomly generated by the computer and then show the values generated on the screen.

77- Write a program that reads 7 people's names and stores them in an array. At the end, show a list with all the names entered, in reverse order the one in which they were informed.

78- Write a program that reads 15 numbers and stores them in an array. At the end, show the entire array on the screen and then show in which positions they were enter values that are multiples of 10.

79- Develop a program that reads 10 integers and stores them in an array. At the end, show which are the even numbers that were entered and in which positions they are stored.

80- Write an algorithm that fills an array of 30 positions with numbers between 1 and 15 drawn by the computer. After that, ask the user to enter a number (key) and your program should show which positions this key was found. Also show how many times the key was drawn.

81- Create a program that reads the ages of 8 people and stores them in an array. At the

end, show:

a) What is the average age of the people registered;

b) In which positions do we have people over 25 years old;

c) What was the oldest age entered (there may be repetitions);

d) In which positions do we type the highest age.

82- Write an algorithm that reads the grades of 10 students in a class and stores them in

an array. At the end, show:

a) What is the class average?

b) How many students are over the class average;

c) What was the highest grade typed;

d) In which positions does the highest note appear?

83- Create a logic that fills an array of 20 positions with numbers random numbers (between 0 and 99) generated by the computer. Then show the generated numbers and then put the vector in ascending order, showing at the end the ordered values.

84- Create a program that reads the name and age of 9 people and stores these values in two arrays, in related positions. At the end, show a listing containing only the data of underage.

85- Write an algorithm that reads the name, gender and salary of 5 employees and store this data in three arrays. At the end, show a listing containing only the data of female employees earning more than R$5,000.

86- Create a program that has a function called hello_world() that, when called,

show the message "Hello World!" with some visual component (lines)

Ex: When calling the function hello_world() appears:

```
+-------=======------+
 Hello World!
+-------=======------+
```

87- Create a program that improves the function hello_world()from the previous question

to show a personalized message, passed as a parameter.

Ex: When calling the function hello_world("Learning Python!") appears:

```
+-------=======------+
 Learning Python
+-------=======------+
```

88- Create a program that improves the function hello_world from the previous question

to show a personalized message, passed as a parameter at least four times.

Ex: When calling the function hello_world("Learning python") appears:

```
+-------=======------+
 Learning Python
 Learning Python
 learning Python
 Learning Python
+-------=======------+
```

89- Create a program that improves the function from the previous question
so that the programmer can choose one of three edges:

```
   +-------=======------+ Edge 1
   ~~~~~~~~:::::::~~~~~~~~ Edge 2
   <<<<<<<<------->>>>>>> Edge 3
```

Ex: A valid call would be a function edge receiving ("Pycharm Community", 3, 2)

```
~~~~~~~~:::::::~~~~~~~~
 PyCharm community

 PyCharm community

 PyCharm community
~~~~~~~~:::::::~~~~~~~~
```

90- Develop an algorithm that reads two values from the keyboard and passes the values
for an adder() function that will calculate and display the sum between them.

91- Develop an algorithm that reads two values from the keyboard and passes them
values for a larger() function that will check which one is the largest and
show it on the screen. If the two values are the same, show a message
reporting this feature.

92-Create a logic that reads an integer and passes it to a procedure evenorodd() that will check and show on the screen if the value passed as parameter is EVEN or ODD.

93- Make a program that has a procedure called counter() that receives three values as a parameter: the start, end and increment of a count. O main program must request the typing of these values and pass them to the procedure, which will show the count on the screen.

94- Develop an application that has a procedure called Fibonacci() which takes a single integer value as a parameter, indicating how many terms of the sequence will be shown on the screen. Your procedure must receive this value and show the quantity of requested elements.
Note: Use exercises 70 and 75 to help you with the solution
Ex:
Fibonacci(5) will generate 1 >> 1 >> 2 >> 3 >> 5 >> END
Fibonacci(9) will generate 1 >> 1 >> 2 >> 3 >> 5 >> 8 >> 13 >> 21 >> 34 >> END

95- Redo exercise 90, only now in the form of the adder() function, which will receive two parameters and will return the result of the sum between them to the main program.

96- Create a program that has an average() function, which will receive the 2 grades from a student and return their average to the main program.

97- Redo exercise 91, only now in the form of a greater() function, but make a adaptation that will receive THREE numbers as a parameter and will return what was the biggest among them.

98- Create a program that has a superAdder() function, which will receive two numbers as a parameter, and then it will return the sum of all values in the

interval between received values.

Ex:

superAdder(1, 6) will add 1 + 2 + 3 + 4 + 5 + 6 and will return 21

superAdder(15, 19) will add 15 + 16 + 17 + 18 + 19 and will return 85

99- Make a program that has a function called powNum(), which will receive two numerical parameters (base and exponent) and will calculate the result of the exponentiation.

Ex: powNum(5,2) will calculate 52 = 25.

100- Improve exercise 96 by creating, in addition to the average() function, another function call situation(), which will return to the main program if the student is APPROVED, in RECOVERY or FAILED. This new function will receive as parameter the result returned by the average() function.

101- Create a Matrix (Mathematics) using Python (Nested list).

102- Create a Tic-Tac-Toe in Python using matrix(mathematics), nested list(Programming, Python).