

Home Work - Day 11.1

Python Conditional Statements (if, if-else, if-elif-else, nested if-else)

1. Write a python program that will check for the following conditions:

- If the light is green – Car is allowed to go
- If the light is yellow – Car has to wait
- If the light is red – Car has to stop
- Other signal – unrecognized signal. Example black, blue, etc...

2. Write a program to check students' grades. Your program should fulfill the following conditions:

1. Grade A – Outstanding
2. Grade B – Excellent
3. Grade C – Very Good
4. Grade D – Good
5. Grade E – Satisfactory
6. others – Unrecognized

A program should also ask to enter the student's name, class, and section.

The expected output is attached below:

Enter Student Name: Raja Shekar

Enter class: 12

Enter section: D

Enter Students Grade: B

Name: Raja Shekar

Class: 12

Section: D

Grade: Excellent!

3. Students result with Grade: Modify the earlier program students' grades in such a way that they should take in five subject marks. Find the total mark and their percentage. Your program should check for the following conditions:

- If the percentage falls below 45, they are considered fail.
- If the percentage is between 45 and 60, grade them as pass.
- If the percentage is between 60 and 75, grade them as good.
- If the percentage is between 75 and 85, grade them as very good.
- If the percentage is between 85 and 100, grade them excellent.
- If the percentage is below zero or above 100, it's an error.

The expected output is attached below:

Enter Name: Sonam Dorji
Enter Class: 12
Enter Section: E
Enter C- Language Mark: 67
Enter Java Mark: 89
Enter Python Mark: 90
Enter Web Development Mark: 56
Enter Data Base Mark: 88

-----Student Details-----

Name: Sonam Dorji
Class: 12
Section: E
Percentage: 78.0 %
Pass!
Remark: Very Good!

4. Trace your subject mark: Write a program to trace your subject mark. Your program should fulfill the following conditions:

1. If the subject mark is below 0 and above 100, print "error: mark should be between 0 and 100 only".
2. Students will fail in the subject if their mark is below 50.
3. Students will pass in the subject if they score 50 and above.
 - 3.1 If subject mark is between 50 and 60, grade student as good.
 - 3.2 If subject mark is between 60 and 80, grade student as very good.
 - 3.3 If subject mark is between 80 and 100, grade student as outstanding.

Make sure to print their mark in every statement to prove that the condition is fulfilled.
Moreover, name, class, and section should be also displayed along with the marks and their grade.

The expected output is here attached below:

Enter Name: Raja Shekar Reddy

Enter Class: 12

Enter Section: A

Enter The Subject Name: Python

Mark scored in that subject: 93

----- Tracing your Python Mark -----

Name: Raja Shekar Reddy

Class: 12

Section: A

Python Mark is 93.0

Congratulations! Pass in Python

Remark: Outstanding in Python

5. A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years. Ask user for their salary and year of service and print the net bonus amount.

6. Provide values of length and breadth of a rectangle from user and check if it is square or not.

7. Provide two int values from user and print greatest among them.

8. A shop will give discount of 10% if the cost of purchased quantity is more than 1000.

- Ask user for quantity
- Suppose, one unit will cost 100.
- Judge and print total cost for user.

9. A school has following rules for grading system:

- a. Below 25 - F
- b. 25 to 45 - E
- c. 45 to 50 - D
- d. 50 to 60 - C
- e. 60 to 80 - B
- f. Above 80 - A

Ask user to enter marks and print the corresponding grade.

10. Provide input of age of 3 people by user and determine oldest and youngest among them.

11. Create a program to print absolute value of a number entered by user.

Example:

INPUT: 1 OUTPUT: 1

INPUT: -1 OUTPUT: 1

12. A student will not be allowed to sit in exam if his/her attendance is less than 75%.

Take following input from user:

- Number of classes held.
- Number of classes attended.
- And print percentage of class attended.
- Is student is allowed to sit in exam or not.

13. Modify the above question to allow student to sit if he/she has medical cause.

Ask user if he/she has medical cause or not ('Y' or 'N') and print accordingly.

14. Write a program to check if a year is leap year or not.

If a year is divisible by 4 then it is leap year but if the year is century year like 2000, 1900, 2100 then it must be divisible by 400.

15. Ask user to enter age, sex (M or F), marital status (Y or N) and then using following rules print their place of service.

- If employee is female, then she will work only in urban areas.
- If employee is a male and age is in between 20 to 40 then he may work in anywhere.
- If employee is male and age is in between 40 to 60 then he will work in urban areas only.
- And any other input of age should print "ERROR".

16. write a program to check if a number is odd and divisible by 3.