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Algorithmic & Data Structures (S1)

1^{sr} year of engineering

Tutorial 2 : Conditioned statements

Exercise 1 : Provide the algorithm (flowchart and pseudocode) as well as the C program to check if a number entered by the user is even or not.

Exercise 2 : Provide the algorithm that checks if a number entered by the user is odd in the interval [83, 101] and prints the message "CORRECT", otherwise prints the message "ERROR".

Exercise 3 : Provide the algorithm for a program that reads 3 real numbers A, B, and C, and displays 'CORRECT!' if the square of A is between B and C. Otherwise, the program displays 'ERROR!'. The program should display the message 'Thank you, goodbye!' at the end.

Exercise 4 : Provide the algorithm for a program that asks the user to enter 5 integers and displays the largest one. The program should use only two variables.

Exercise 5 : Provide the algorithm for a program that asks the user to enter 5 integers and displays the largest number below 20. If no entered number is below 20, it displays max=0. The program should use only two variables.

Exercise 6 : Provide the algorithm for a program that asks for the customer's age and displays their category and the price to pay according to the following table:

Age	Category	Price to pay
<=16	Child	120DA
>16 et <60	Adult	200DA
>=60	Senior	150DA

The program should display the message 'Thank you, goodbye!' at the end.

Exercise 7 : Provide the algorithm for a program that asks the user to enter an student's average and category (n: new, r: repeat, t: triple). The program should then rank the students according to the table below. Provide the C code using if...else if ...else statement and switch statement.

Category	average	rank
new	> 12	A
new	< 12	B
repeat	> 12	B
repeat	< 12	C
triple	-	C