

SSN COLLEGE OF ENGINEERING (Autonomous)
Affiliated to Anna University
DEPARTMENT OF CSE

UCS 1211 PROGRAMMING IN C LABORATORY
A1 : Simple C Programs using I/O statements, conditional and looping constructs

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Learning Outcome :

To be proficient in basic features of C

- using I/O statements (*getchar/putchar, scanf/printf*)
- operators and expressions (*arithmetic / unary / conditional / relational / logical*)
- conditional constructs (*if / nested if, switch*)
- looping constructs (*for, while, do-while*)

To learn to develop code incrementally

Write the algorithm to solve the following problems and implement them in C.

- 1) Check whether the given integer is odd or even
- 2) Convert the given temperature in Celsius to Fahrenheit and Kelvin scale.
- 3) Modify (1) to set a flag to 1 if number is odd; 0 if even (Use *conditional operator*)
- 4) Find the net salary of an employee by getting the basic pay (BP) as input. Compute the net pay based upon the following formulae:
DA = 88% of BP
HRA = 8% of BP
CCA = Rs. 1000
Insurance = Rs. 2000
PF = 10% of BP
Gross Pay = BP + DA + HRA + CCA
Deductions = Insurance + PF
Net Pay = Gross Pay – Deductions
- 5) Modify (4) to set HRA based on type city which is input (Metro (M) 10%; Corporation (C) 8%; Taluk (T) 5%); to set CCA based on designation (Worker (W) 1000; Engineer (E) 2000; Manager (M) 5000) (Use *case / nested if*)
- 6) Write a C program that will ask the user for a whole number *N* between 3 and 10 and print an egg timer of size *N*. Validate *N* to be non-zero positive number.

Example

Enter a number ? 4

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*_*_*_*
*_*_*
*_*
*
*_*
*_*_*
*_*_*_*
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- 7) Write a program that computes sum of N integers (Version 1)
- Get input for N , multiple times until -999 is given (Version 2) (Use *do-while*)
 - Get input for N , multiple times until 'STOP' is given (Version 3)
 - Validate N to be a positive number less than 100. (Version 4)
 - Print error message for invalid input and exit (Version 5) (Use *break*)
 - If input is invalid, print message and ask for another input. (Version 6)
- 8) Design a calculator to perform the operations namely addition, subtraction, multiplication, division and square of a number. (Hint: Provide operation options for the user to choose, after getting two numbers of type float) (Use *case*)
- 9) Write a C program to check if a number has three consecutive 5s. If yes, print YES, else print NO.

Example

Number: 1353554

Result: NO

Number: 345559

Result: YES

- 10) Implement the solution for (1) without a condition.
