**NSP-LAB1**

**Topic 1: Development environment**

**Goals :**

• Work in the LINUX development environment

• Reminder of programming in C

**Work to do:**

**Exercise 1:**

• Write a C program that prompts the user to enter a certain number of values from the keyboard. The program should then display these values on the screen. Ensure that the program handles invalid inputs gracefully.

• Test this program

• The test will be done in a console under LINUX

|  |
| --- |
| #include <stdio.h>  int main() {  int num\_values;  // Prompt the user to enter the number of values  printf("Enter the number of values: ");  scanf("%d", &num\_values);  // Check if the user entered a valid number of values  if (num\_values <= 0) {  printf("Invalid number of values.\n");  return 1;  }  // Create an array to store the values  int values[num\_values];  // Prompt the user to enter each value  printf("Enter the values:\n");  for (int i = 0; i < num\_values; i++) {  printf("Value %d: ", i + 1);  scanf("%d", &values[i]);  }  // Display the entered values  printf("Entered values:\n");  for (int i = 0; i < num\_values; i++) {  printf("%d\n", values[i]);  }  return 0;  } |

**Exercise 2: Use of structures**

Write a program that uses a person structure of three fields (name, age, salary). This program asks the user to give the corresponding information to 3 people and which displays the information read, with in addition the number of people, the average age and the sum of salaries.

|  |
| --- |
| #include <stdio.h>  // Define a structure for a person  struct Person {  char name[50];  int age;  float salary;  };  int main() {  // Declare an array of Person structures to store information for 3 people  struct Person people[3];  // Variables to store sum of ages and salaries  int sum\_age = 0;  float sum\_salary = 0.0;  // Prompt the user to enter information for each person  for (int i = 0; i < 3; i++) {  printf("Enter information for Person %d:\n", i + 1);  printf("Name: ");  scanf("%s", people[i].name);  printf("Age: ");  scanf("%d", &people[i].age);  printf("Salary: ");  scanf("%f", &people[i].salary);  // Add age and salary to sums  sum\_age += people[i].age;  sum\_salary += people[i].salary;  }  // Calculate average age  float average\_age = (float)sum\_age / 3;  // Display the information read  printf("\nInformation for the %d people:\n", 3);  for (int i = 0; i < 3; i++) {  printf("Person %d:\n", i + 1);  printf("Name: %s\n", people[i].name);  printf("Age: %d\n", people[i].age);  printf("Salary: %.2f\n", people[i].salary);  printf("\n");  }  // Display additional information: number of people, average age, and sum of salaries  printf("Number of people: %d\n", 3);  printf("Average age: %.2f\n", average\_age);  printf("Sum of salaries: %.2f\n", sum\_salary);  return 0;  } |