

Lab No 2: Control instructions

Objective of the lab:

To acquire a thorough understanding and proficiency in control instructions and encompassing.

Task 1

```
1  #include <stdio.h>
2  void main()
3  {
4      int a;
5      /* Lecture des données*/
6      printf("Entrer un entier\n");
7      scanf("%d",&a);
8      printf("Test de la 1ere condition...\n");
9      if (a>=0)
10         printf("valeur positive ou nulle\n");
11         printf("Test de la 2eme condition...\n");
12         if (a<0)
13             printf("valeur négative\n");
14     }
```

1.1 Execute this program with different values of 'a'. What do you notice?

1.2 Enhance the code to avoid executing all tests.

```
if (conditions)
    {instructions1;}
else
    {instructions2;}
```

1.3 Address the case of the null value separately. Modify the above code to display one of the messages depending on the case: Positive, Negative, or Null.

```
if (conditions1)
    .....
else
if (conditions2)
    .....
else
    .....
```

2. Drawing inspiration from the examples above, complete this program and execute it with various values of 'a' and 'b'.

```

1  #include <stdio.h>
2  void main()
3  { float a,b,x;
4      /* Résolution d'une equation du premier degré: ax+b=0 */
5      printf("introduire la valeur de a : \n");
6      scanf("%f",&a);
7      printf("introduire la valeur de b : \n");
8      scanf("%f",&b);
9      if (a==0)
10         if (.....)
11            if (b==0)
12                printf("Infinité de solutions\n");
13            else
14                printf("Pas de solution \n");
15     else
16     { x=-b/a;
17       .....
18       printf ("La solution = %3f \n", x);
19     }
20 }

```

Task 2 : SWITCH...CASE

3. Execute this program.

```

1  #include <stdio.h>
2  #include <stdlib.h>
3  int main()
4  {
5      int a=2, b=7;
6      int operation;
7      printf("Choisir une operation : \n");
8      printf("1 --> + \n");
9      printf("2 --> - \n");
10     printf("3 --> * \n");
11     scanf("%d",&operation);
12     switch(operation)
13     {
14     case 1:
15         printf("somme = %d\n",a+b);
16         break;
17     case 2 :
18         printf("difference -%d \n",a-b);
19         break;
20     case 3 :
21         printf("produit -%d \n",a*b);
22         break;
23     default :
24         printf("mauvais choix\n");
25     }
26     return 0;
27 }

```

3.2 Add the operation "/" in case 4. For 'b' equals to 0, display "division impossible!"

3.3 Comment out the 'break' statement. Execute the code. What do you notice?

3.4 Do the same with the 'default' statement.