Alaa Barka TP3

Exercice 1 :

```c
#include <stdio.h>

int main()
{

    int a, b, c;
    printf("Enter a,b and c ¥n");
    scanf("%d %d %d", &a, &b, &c);
    if (a > b)
    {
        if (a > c)
        {
            printf("The max is a = %d", a);
        }
        else
        {
            printf("The max is c = %d", c);
        }
    }
    else
    {
        if (b > c)
        {
            printf("The max is b = %d", b);
        }
        else
        {
            printf("The max is c = %d", c);
        }
    }
    return 0;
}
```

Exercice 2 :

```c
#include <stdio.h>
void main()
{
    float a, b, x;
    printf("Enter a and b ¥n");

    scanf("%f %f", &a, &b);
    if (a == 0)
    {
        if (b == 0)
        {
            printf("Infinite solutions ¥n");
        }
        else
        {
            printf("There's no solution");
        }
    }
    else
    {
        x = -b / a;
        printf("The solution = %.3f ¥n", x);
    }
}
```

Exercice 3.4 :

```c
#include <stdio.h>

int main()
{

    unsigned int x;
    printf("Enter x ¥n");
    scanf("%d", &x);
    if (x % 2 == 0)
    {
        printf("x is even ¥n");
    }
    else
    {
        printf("x is odd ¥n");
    }
    return 0;
}
```

Exercice 3.12

```c
#include <stdio.h>

int main()
{

    unsigned int x, y, z;
    printf("Enter x,y and z ¥n");
    scanf("%d %d %d", &x, &y, &z);
    // odd or even number (x)
    if (x % 2 == 0)
    {
        printf("x is even ¥n");
    }
    else
    {
        printf("x is odd ¥n");
    }
    // parity of two numbers
    if ((x % 2 == 0 && y % 2 == 0) || (x % 2 != 0 && y % 2 != 0))
    {
        printf("x and y have the same parity ¥n");
    }
    else
    {
        printf("x and y don't have the same parity ¥n");
    }
    return 0;
}
```

Exercice 3.15

```c
#include <stdio.h>

int main()
{

    unsigned int x, y, z;
    printf("Enter x,y and z \n");
    scanf("%d %d %d", &x, &y, &z);
    // odd or even number (x)
    if (x % 2 == 0)
    {
        printf("x is even \n");
    }
    else
    {
        printf("x is odd \n");
    }
    // parity of two numbers
    if ((x % 2 == 0 && y % 2 == 0) || (x % 2 != 0 && y % 2 != 0))
    {
        printf("x and y have the same parity \n");
    }
    else
    {
        printf("x and y don't have the same parity \n");
    }
    // one of the three variavbles is even
    if (x % 2 == 0 || y % 2 == 0 || z % 2 == 0)
    {
        printf("One of the three variables is even ! \n");
    }
    else
    {
        printf("The three variables are odd ! \n");
    }
    return 0;
}
```

Exercice 3.17

```c
#include <stdio.h>

int main()
{

    unsigned int x, y, z;
    printf("Enter x,y and z ¥n");
    scanf("%d %d %d", &x, &y, &z);
    // odd or even number (x)
    if (x % 2 == 0)
    {
        printf("x is even ¥n");
    }
    else
    {
        printf("x is odd ¥n");
    }
    // parity of two numbers
    if ((x % 2 == 0 && y % 2 == 0) || (x % 2 != 0 && y % 2 != 0))
    {
        printf("x and y have the same parity ¥n");
    }
    else
    {
        printf("x and y don't have the same parity ¥n");
    }
    // one of the three variavbles is even
    if (x % 2 == 0 || y % 2 == 0 || z % 2 == 0)
    {
        printf("One of the three variables is even ! ¥n");
    }
    else
    {
        printf("The three variables are odd ! ¥n");
    }

    // two of the three variables have the same parity

    if (x % 2 == y % 2 || x % 2 == z % 2 || y % 2 == z % 2)
    {
        printf("Two of the three variables have the same parity ¥n");
    }
    else
    {
        printf("Three variables don't have the same parity , which is impossible ! ? ¥n");
    }
    return 0;
}
```

Exercice 3.20

```c
#include <stdio.h>

int main()
{

    unsigned int x, y, z;
    char answer;
    printf("Enter x,y and z ¥n");
    scanf("%d %d %d", &x, &y, &z);
    printf("The menu : ¥n a-odd or even number ¥n b-parity of two numbers ¥n c-one of the three variables is
even¥n other-two of the three variables have the same parity ¥n");
    scanf("%s", &answer);
    switch (answer)
    {
    case 'a':
        // odd or even number (x)
        if (x % 2 == 0)
        {
            printf("x is even ¥n");
        }
        else
        {
            printf("x is odd ¥n");
        }
        break;
    case 'b':

        // parity of two numbers
        if ((x % 2 == 0 && y % 2 == 0) || (x % 2 != 0 && y % 2 != 0))
        {
            printf("x and y have the same parity ¥n");
        }
        else
        {
            printf("x and y don't have the same parity ¥n");
        }
        break;
    case 'c':
        // one of the three variavbles is even
        if ((x % 2 == 0) || (y % 2 == 0) || (z % 2 == 0))
        {
            printf("One of the three variables is even ! ¥n");
        }
        else
        {
            printf("The three variables are odd ! ¥n");
        }
        break;
    default:
        // two of the three variables have the same parity

        if (x % 2 == y % 2 || x % 2 == z % 2 || y % 2 == z % 2)
        {
            printf("Two of the three variables have the same parity ¥n");
        }
        else
        {
            printf("Three variables don't have the same parity , which is impossible ! ? ¥n");
        }
    }
    return 0;
}
```

Exercice 4:

```c
#include <stdio.h>
int main()
{
    float a, b;
    char operator;
    printf("Enter a and b  ¥n");
    scanf("%f %f", &a, &b);
    printf("Enter the operator ! ¥n");
    scanf("%s", &operator);

    switch (operator)
    {
    case '/':

        printf("%f %c %f = %f", a, operator, b, a / b);
        break;
    case '+':
        printf("%f %c %f = %f", a, operator, b, a + b);
        break;
    case '-':
        printf("%f %c %f = %f", a, operator, b, a - b);
        break;
    case '*':
        printf("%f %s %f = %f", a, operator, b, a * b);
        break;

    default:
        printf("invalid operator ! ¥n");
    }
    return 0;
}
```

Exercice 5:

```c
#include <stdio.h>
int main()
{

    float r1, r2, r3;
    char plug;
    printf("Enter R1, R2 and R3 ¥n");
    scanf("%f %f %f", &r1, &r2, &r3);
    printf("Enter the PLug type ! ¥n p-parallel¥n other-serie¥n");
    scanf("%s", &plug);
    if (plug == 'p')
    {
        printf("The result is %f", 1 / ((1 / r1) + (1 / r2) + (1 / r3)));
    }
    else
    {
        printf("The result is %f", r1 + r2 + r3);
    }
    return 0;
}
```

Exercice 6:

```c
#include <stdio.h>
int main()
{

    int n;
    printf("Enter N ! ¥n");
    scanf("%d", &n);
    // using for loop !
    for (int i = 1; i <= n; i++)
    {
        if (i % 2 == 0)
        {
            printf("%d ¥n", i);
        }
    }
    // using while loop !
    int i = 1;
    while (i <= n)
    {
        if (i % 2 == 0)
        {
            printf("%d ¥n", i);
        }
        i++;
    }
    return 0;
}
```

Exercice 7:

```c
#include <stdio.h>
int main()
{
    int n;
    printf("Enter N ¥n");
    scanf("%d", &n);
    n++;
    while (--n)
    {
        printf("%d¥n", n);
    }
    return 0;
}
```