C Programming Exercizes

Source: https://www.w3resource.com/c-programming-exercises/

1. Variables and Expressions

Exercize 1.1

Write a C program to print your name, date of birth and mobile number.
Expected Output:

```
Name   : Mario Rossi
DOB    : 05 December, 1984
Mobile : 99-9999999999
```

Solution:

```
#include <stdio.h>
int main(){
        char nome[20] = "Mario Rossi";
        char dob[20] = "05 December, 1984";
        char mobile[20] = "99-9999999999";

        printf("Name  : %s\n", nome);
        printf("DOB   :%s\n", dob);
        printf("Mobile:%s\n", mobile);
}
```

Exercize 1.2

Write a C program to print a block F using hash (#), where the F has a height of six characters and width of five and four characters. And also to print a big 'C'.

Solution:

```
#include <stdio.h>
int main(){
    printf("######\n");
    printf("#\n");
    printf("#\n");
    printf("#####\n");
    printf("#\n");
    printf("#\n");
    printf("#\n");


    printf("  #######\n");
```

```
    printf(" ##     ##\n");
    printf("#\n");
    printf("#\n");
    printf("#\n");
    printf("#\n");
    printf("#\n");
    printf(" ##     ##\n");
    printf("  #######\n");
    return 0;
}
```

Exercize 1.3

Write a C program to print the following characters in a reverse way. Test Characters: 'X', 'M', 'L'

Expected Output: The reverse of XML is LMX

Solution:

```
#include <stdio.h>

int main(int argc, char const *argv[])
{
    char test[4] = {'X','M','L','\0'};

    printf("%c %c %c \n", test[2], test[1], test[0]);

    return 0;
}
```

Exercize 1.4

Write a C program to compute the perimeter and area of a rectangle with a height of 7 inches and width of 5 inches.

Expected Output:

```
Perimeter of the rectangle = 24 inches
Area of the rectangle = 35 square inches
```

Solution:

```
#include <stdio.h>

int main(int argc, char const *argv[])
{
    float perimeter;
    float area;
```

```
    int height = 7;
    int width = 5;

    printf("Perimeter = %d\n", (2*height)+(2*width));
    printf("Area = %d\n", (height * width));


    return 0;
}
```

Exercize 1.5

Write a C program to compute the perimeter and area of a circle with a given radius.

Expected Output:

```
Perimeter of the Circle = 37.680000 inches
Area of the Circle = 113.040001 square inches
```

Solution:

```
#include <stdio.h>
#include <stdlib.h>

int main(int argc, char const *argv[])
{

    const float PI = 3.14159;

    int radius = 0;
    float perimeter = 0;
    float area = 0;

    radius = atoi(argv[1]); //alphabetical to int
    perimeter = 2*PI*radius;
    area = 2*PI*radius*radius;

    printf("Perimeter of the Circle: %f\n", (float)perimeter);
    printf("Area of the Circle: %f\n", (float)area);

    return 0;
}
```

Exercize 1.6

Write a C program to convert a given integer (in seconds) to hours, minutes and seconds.

Expected Output:

```
Input seconds: 25300
H:M:S - 7:1:40
```

Solution:

```c
#include <stdio.h>
int main() {
    int sec, h, m, s;
    printf("Input seconds: ");
    scanf("%d", &sec);

    h = (sec/3600);
    m = (sec -(3600*h))/60;
    s = (sec -(3600*h)-(m*60));
    printf("H:M:S - %d:%d:%d\n",h,m,s);

    return 0;
}
```

Exercize 1.7

Write a C program that reads two integers and checks whether they are multiplied or not.

Expected Output:

```
Input the first number: 5
Input the second number: 15
Multiplied!
```

Solution:

```c
#include <stdio.h>

int main() {
    int  x, y;
    printf("\nInput the first number: ");
    scanf("%d", &x);
    printf("\nInput the second number: ");
    scanf("%d", &y);

    if(x > y)
    {
```

```
        int temp;
        temp = x;
        x = y;
        y = temp;
    }

    if((y % x)== 0)
    {
        printf("\nMultiplied!\n");
    }
    else
    {
        printf("\nNot Multiplied!\n");
    }

    return 0;
}
```

2. Flow control

3. Console Operations

4. Strings

5. Files