Lab 11 Object-Oriented Programming 1

Note: The underlined text is an input data.

1. **Create the class for print multiplication table that the user can specify maximum row multiplier (usually `12`) to any number from constructor. And class may contain method `print($n)` that will print out multiplication table from `2` to `$n`.**

   The program gets the maximum row multiplier from command-line arguments and creates instance from **the above class** then repeatedly waits for user input `$n`, `0` for exit, and call method `print($n)` of instance object.

   ```
   php ass-01.php maximum_row_multiplier
   ```

   Remark: The created class will be reused in **assignment 3**.

Example 01: `php ass-01.php 5`

```
Input size (0 for exit): 3
    2    3
    4    6
    6    9
    8   12
   10   15
Input size (0 for exit): 8
    2    3    4    5    6    7    8
    4    6    8   10   12   14   16
    6    9   12   15   18   21   24
    8   12   16   20   24   28   32
   10   15   20   25   30   35   40
Input size (0 for exit): 0
```

Example 02: `php ass-01.php 10`

```
Input size (0 for exit): 4
    2    3    4
    4    6    8
    6    9   12
    8   12   16
   10   15   20
   12   18   24
   14   21   28
   16   24   32
   18   27   36
   20   30   40
Input size (0 for exit): 8
    2    3    4    5    6    7    8
    4    6    8   10   12   14   16
    6    9   12   15   18   21   24
    8   12   16   20   24   28   32
   10   15   20   25   30   35   40
   12   18   24   30   36   42   48
   14   21   28   35   42   49   56
   16   24   32   40   48   56   64
   18   27   36   45   54   63   72
   20   30   40   50   60   70   80
Input size (0 for exit): 0
```

2. From week 01 assignment 5, create the class for calculating the electricity bill. The prices table filename will be passed to constructor and method **`calculatePrice($unit)`** used to calculate electricity bill and return price of the given **`$unit`**. The prices table is in the following format.

```
number_of_data
number_of_unit(0 for all remains)1 price1 are_price_for_whole(0=no/1=yes)1
number_of_unit(0 for all remains)2 price2 are_price_for_whole(0=no/1=yes)2
...
```

Example: `ass-02-input.txt` (using prices table from week 01 assignment 5).

```
4
5 10 1
5  3 0
5  5 0
0 10 0
```

The program gets the prices table filename from command-line arguments and creates instance from **the above class** then repeatedly waits for user input `$unit`, `-1` for exit, and call method `calculatePrice($unit)` of instance object then print out the price returned from `calculatePrice($unit)`.

Hint: An example of structured programming code is at https://github.com/pachara-camt/inx246/blob/master/week-01/ass-05.php.

Remark: The created class will be reused in **assignment 3**.

Example 01: `php ass-02.php ass-02-input.txt`

```
Input usage unit(-1 for exit): 0
Price of electricity bill = 0
Input usage unit(-1 for exit): 3
Price of electricity bill = 10
Input usage unit(-1 for exit): 5
Price of electricity bill = 10
Input usage unit(-1 for exit): 7
Price of electricity bill = 16
Input usage unit(-1 for exit): 13
Price of electricity bill = 40
Input usage unit(-1 for exit): -1
```

3. From assignment 1 and 2, reuse the created classes <u>without any changed</u> to write the program gives the menu for select process of assignment 1 and 2 and repeats until user inputs **3**. You have to create a new class for program, e.g. **`class App`**, and create method **`run()`** to run the program tasks.

   The maximum row multiplier = 15.

   The following prices table is in file `ass-03-pricing-data.txt`.

Unit range	price
0	no price
1 - 10	10 for all whole
11 - 15	3 per unit
16 - 20	5 per unit
21 - 30	10 per unit
31 up	20 per unit

   Example 01: `php ass-03.php`

```
         1. Multiplication Table
         2. Electricity Bill calculation
         3. exit

Input menu number: 1
Input size: 5
    2    3    4    5
    4    6    8   10
    6    9   12   15
    8   12   16   20
   10   15   20   25
   12   18   24   30
   14   21   28   35
   16   24   32   40
   18   27   36   45
   20   30   40   50
   22   33   44   55
   24   36   48   60
   26   39   52   65
   28   42   56   70
   30   45   60   75

         1. Multiplication Table
         2. Electricity Bill calculation
         3. exit

Input menu number: 2
Input usage unit: 35
Price for 35 electricity unit(s) = 250
```

```
        1. Multiplication Table
        2. Electricity Bill calculation
        3. exit

Input menu number: 5
Invalid menu number 5!!!

        1. Multiplication Table
        2. Electricity Bill calculation
        3. exit

Input menu number: 3
```