

Algorithms and Programming I
Spring 2015
Assignment# 3
Due date Thursday 19th

Exercise 1

Printing

Write a program using **print** that, when run, prints out a tic-tac-toe board.

Expected output:

```
| |  
-----  
| |  
-----  
| |
```

Exercise 2

User input

In this exercise, we will ask the user for his/her first and last name, and date of birth, and print them out formatted. Recall that you can get input from the user using the command raw input ('text'), as shown in lecture.

Note: There are two functions to get user input. The first, **raw input**, turns whatever the user inputs into a string automatically. The second, **input**, preserves type. So, if the user inputs an int, or a float, you will get an int or a float (rather than a string). Be careful though- you still want to use raw input if you want a string back, or otherwise the user will have to put quotes around their answer. Use raw input here - it's good for string processing, like this problem. Input will come in handy when using user input to compute math, which we will be needing in later exercises.

Here is an example of what this program should do:

Output:

```
Enter your first name: xxxx  
Enter your last name: yyyy  
Enter your date of birth:  
Month? March  
Day? 10  
Year? 1990  
xxxx yyyy was born on March 10, 1990.
```

Exercise 3

Conditionals

Redo Exercise 2, and make the program check the input first, and if the user enters invalid input, your program should print an error message "Invalid information".

Output:

```
Enter your first name: xxxx  
Enter your last name: yyyy  
Enter your date of birth:  
Month? March  
Day? 32  
"invalid information"
```

Exercise 2

Functions

- (1) Write a function that takes two integers, m and n . The method returns `True` if m is divisible by n , and returns `False` otherwise.

- (2) Write a function that return the largest number in the input that is an even number. The input must be a list of integers. If there is no even number in the input, return `None`.

- (3) Write a function that computes the roots of a quadratic equation. Check for complex roots and print an error message saying that the roots are complex.

- (4) Write a function report card where the user can enter each of his grades, after which the program prints out a report card with GPA.