# CS172 -- ASSIGNMENT #1

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**GRADE:**

|  |  |  |
| --- | --- | --- |
| **CATEGORY** | **POINTS** |  |
| EX01\_01 |  | 20 |
| EX01\_02 |  | 20 |
| EX01\_03 |  | 20 |
| EX01\_04 |  | 20 |
| EX01\_05 |  | 20 |
|  |  |  |
| **TOTAL** |  | 100 |

## REVIEW of CS171

## EXERCISES:

**EX01\_01 –** a) When a program runs on a computer, the part of the computer that carries out the instructions is called the CPU.

b) When a program runs on a computer, it is stored in memory.

c) When a program is not running, it is stored

**i) on a disk**

ii) in level-2 cache (L2)

iii) in main memory

iv) on the Ethernet or wi-fi

d) a bit is

i) a metalic rod inserted into a horses mouth to control it while riding.

ii) a small amount of data.

iii) an alternative term for byte.

iv) an electronic device used in computers.

**v) a binary digit, like 0 or 1**

e) A byte in memory is identified by a unique number called its unique address.

f) In modern computer systems, a byte consists of \_\_\_\_8\_\_\_\_\_\_ bits.

g) An operating system

i) is the chief hardware unit in a computer.

ii) is loaded into the computer each time it needs to carry out an operation.

iii) ensures that programs will not run on the computer at the same time.

iv) allocates resources like memory to programs that are running

**v) all of the above**

h) Application software

i) processes applications for jobs, school admission, etc.

**ii) is any software that runs with the support of the operating system.**

iii) was invented by Microsoft.

iv) is applied to the computer for the purpose of running the operating system.

v) none of the above

**EX01\_02 –** Write a function called ex02 which takes no arguments and returns a void. Call this function from main(). In that function:

1. Declare a variable hasPassedTest , and initialize it to true .
2. Declares two variables x and y which are initialized to random numbers, then outputs whether x is greater than or equal to y .
3. Declares a variable numberOfShares and prompts the user for a value, and outputs whether the value is less than 100 .
4. Prompts the user for a box width and a book width, then outputs if the box width is evenly divisible by the book width
5. Prompts the user for the shelf life of a box of chocolate and the outside temperature, then decreases the shelf life by 4 if the outside temperature is greater than 90

**EX01\_03 –** Write a function called ex03, which takes no arguments and returns a void. Call this function from main() (and yes, you can reuse the project for ex02). In that function:

1. Prompt the user for the area of a square. Output the length of the diagonal for that square.
2. Prompt the user for a yes or no response (y or n) using a char variable. Output “yes” if the user gave you a ‘y’, and “no” if the user gave you ‘n’.
3. Initialize a char variable tab to the tab character.
4. Declare a string variable mailingAddress, and prompt the user for their mailing address.
5. Initialize a string variable to the empty string.

**EX01\_04 –** Write a function called ex04, which takes no arguments and returns a void. Call this function from main() (and yes, you can reuse the project for ex02). In that function:

1. Write code to ask the user for a number between 1 and 10. Loop until the user gives a valid input.
2. Use the number in part (a) to output the sum of the cubes from 1 to the number given (by cube, I mean that for a given number x, determine x3).
3. Use a do-while loop to output a number of asterisks, again using the input from (a)
4. Use a for loop to output the even numbers from 0 to 40.
5. Implement a separate function that takes an integer, and doubles that integer. Call that function from your ex04 function, using the value prompted in (a).
6. Write a function called add that takes two integers, and returns the sum of those integers. Call it using two random numbers.
7. Write a function that adds one to its parameter. The function should take the integer as pass by reference.

**EX01\_05 –** Write a function called ex05, which takes no arguments and returns a void. Call this function from main() (and yes, you can reuse the project for ex02). In that function:

1. Write a loop that asks the user for five integers, and stores those integer values in an array.
2. Write some code that calculates the sum and the product of the values in the integers, and outputs those results.
3. Write a function that takes an array and the size of the array, and outputs the values in that array. Call the array from your ex05 function, passing the array of 5 integers from (a)
4. Write a function that takes an array and the size of that array, then prompts the user for a value, then outputs whether or not the array contains that value.