Object Oriented Programming – Monday 9:00

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50% continuous assessment

50% exam

* Exam in semester 2 – half python, half Java

PyCharm – Python friendly

Install Python 3 first then PyCharm

What is Computer Science

It’s a discipline that involves understanding and design of computers and computational designs

Providing a design that

* Functions as desired
* Has satisfactory performance
* Reliable and maintainable
* Meets desired cost criteria

Your focus should be on problem solving

Introduction to Python

Variables refer to data in the memory

You can name them as you wish A-X, a-z, 0-9 and \_

Small set a reserved as keywords

Python program that calculates are of circle

From math import pi

R = 12

Area = pi\*r\*\*2

Print (“the area of a circle with radius”,r,”is”, area)

A program is a sequence of statements that python interprets and executes

Data types – string, integer

Expressions – something to evaluate eg input, numeric

Comments # - single line comment

What is a computer program?

* A program is a sequence of instructions.
* To run
  + Create the sequence of instructions according to your design and the language rules
  + Turn that program into the binary commands the processor understands
  + Give the binary code to the OS so it can give it to the processor
  + OS tells the processor to run the program
  + When finished or it dies, OS cleans up

Python is an interpreted language. This means it looks at each instruction one at a time and turns it into something it can run

The function input (“Enter a value”)

Enter a value on the python screen and waits until the user types something ending with enter

* It returns a string, no matter what is given, even a number (“1” is not the same as 1, different types)

Import – imports a module

The = sign is the assignment statement, its not an equality

Print takes a list of elements in parentheses separated by commas

* If the element is a string, it prints as is
* If the element is a variable, prints the value associated with the variable
* After printing, moves on to a new line of output

Save as a “module”. Place a .py suffix, it becomes a python module

Using IDLE, if you save the file without a .py it will stop colonizing and formatting the file. Re-save with the .py, everything is fine

A Python program is

* A module
* Each module has python statements
* Each statement has expressions

There are many modules provided by python to perform common tasks

Statements are commands in Python. They do not return any values

Expressions perform some operation and return a value

White space are characters that don’t print – blank spaces, tabs etc

Empty lines are treated as a whitespace and are ignored.

Indenting blocks of code is considered good practice

Python requires indentation for blocks

Literal is a programming notation for a fixed value

A variable is a name we designate to represent an object in our program. We use names to make our program more readable so that the object is easily understood in the program