

Python to c#

This is a selection of statements that will assist you in writing programs in C# if your existing knowledge is of python

	Python	C#
Comment	# This is a comment	//this is a comment
Declaring variables	Just use i = 1	//Declare before use int i; i = 1; Or declare and use Int i = 1;
Data types	Used implicitly • int • string • float • Boolean # True/False	Must be declared • int – 32 bit • char • string • float • double • boolean //true/false Other types are available
Type conversions	i = int(s) also str(), float()	i = Convert.ToInt32(s); also Convert.ToString(), Convert.ToSingle, Convert.ToDouble (i.e. ToSingle for float, 32 bit, ToDouble for double, 64 bit) (Uses Convert Class) Or .ToString method i = s.ToString
Quote Marks	“ ” or “ ”	“ ” only
Operators	+ - / * ** power % mod // integer divide	+ - / * Math.Pow(x,y) // returns x ^y % mod / integer divide with 2 integers
Add/subtract 1	x+=1 y-=1	x++; y--;
Comparison	== != and or	== != &&
Console i/o	print(s) print(s) s = input('Input a string')	Console.WriteLine(s); Console.WriteLine('Enter a string'); S = Console.ReadLine();

	Python	C#
		(uses Console Class)
Blocks	Indented 4 characters	Contained within {} and indented No need for braces when there is single statement in a block for if, while etc
If	If condition: statement	If (condition) Statement; //or If (condition) { Statement; Statement; }
ElseIf	elif	else if
Switch case	if value == x: statement elif value == y: statement else statement	switch (value) { Case x: Statement; Break; Case y: Statement; Break; Case x: Statement; Break; }
For	for i in range(10): statement	for (int i = 0; i<10; i++) statement; note you need to declare the variable that is used as the counter, and it's scope is the block of code;
For loop	for item in list: statement	foreach (int item in intArray) statement; foreach (string item in stringArray) statement; this is shown for an array
While loop	while condition: statement	while (condition) statement
Do while loop (must execute block once)	while True statements if not condition: break loop whilst condition is True	do { Statements } while (condition); loop whilst condition is true
Lists	x = [] x.append(2) x.append(3) #etc.	... List<int> x = new List<int>(); x.Add(2); x.Add(3);

	Python	C#
	# can mix data types	// declare 1 data type for all items
Arrays – 1D		// 1 data type for all items // declare size // indexed from 0 int[] intArray = new int[5]; intArray[0] = 10; intArray[1] = 20; // etc // Declare and add values int[] intArray = new int[] {1,2,3,4,5} or int[] intArray = new int[] {1,2,3,4,5}
Main program (Console programming)	# statements start here x = 1 # etc. #pyScripter template def main(): # statements start here x = 1 # etc. if __name__ == '__main__': main() # Can put import, def, class statements and blocks before 1 st line of code # start with #!/usr/bin/env python # to use linux/unix interprete	// Visual Studio Console Template using System; using System.Collections.Generic; using System.Linq; using System.Text; using System.Threading.Tasks; namespace PythonConvertCheck { class Program { static void Main(string[] args) { // Statements here } } }
Functions	def function(param, param): statements return value e.g. def add(a,b): return a+b ... y = add(2,3)	type function(type param, type param) { statements; return value; } int add(int a, intb) { return a+b; } // note return type double add(double a, double b) { return a+b } Functions and procedures can also be preceeded with private/public and static; let's ignore these for now

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Procedures	Like functions, no return statement	Functions with return type void and no return statement
File output	<pre>F = open('file.txt','w') f.write(line + '\n') f.close()</pre>	<pre>Using (StreamWriter w = new StreamWriter('file.txt') { w.WriteLine(line); })</pre> Uses StreamWriter Class
File input	<pre>f = open('file.txt','r') line = f.readline() f.close()</pre>	<pre>using (StreamReader r = new StreamReader('file.txt') { Line = r.ReadLine(); })</pre> Uses StreamReader Class
Maths functions	<pre>import math x = math.sqrt(y)</pre> or <pre>from math import * x = sqrt(y)</pre>	<pre>X = Math.Sqrt(y);</pre> Uses Math class
Random number	<pre>import random x = random.randrange(10)</pre>	<pre>Random r = new Random(); x = r.Next(10);</pre> Uses Random Class