**What are the advantages of working with built-in functions vs. your own functions in a project?**

Some advantages of working with built-in functions vs. my own, in a project, are, time, efficiency, and convenience. Instead of writing functions over and over, Python provides a library of common functions. Some of these functions are written in an optimized way that is better than what I might be able to write at a given time. Lastly, it is far more convenient to utilize proven technology that exists than provide your own functions and error handling.

**Explain how to use built-in functions, functions from module, and user-defined functions.**

**Built-in Functions:**

**Built-in functions are designed to be called and can be used in a number of ways. Math to perform calculations, string manipulation to modify, display data and many other ways to reduce the cost of time in developing code.**

**User-defined functions:**

User-defined functions are great for all kinds of things like, resolving uncommon tasks, working with explicit data, and looping through data sets.

**Functions from module:**

**A module is like a class in lower level OOP languages like, Java and C++. The differences is that modules only contain functions and statements; whereas, classes contain, fields, constructors/destructors, methods/functions, and properties or accessors/mutators (depending on the particular language).**

**What are the advantages of working with built-in functions vs. your own functions in a project?**

The creators of the Python programming language, included functions for some of the most widely used operations, such as str(), int(), len(), type(), print(), and range(). The great part about having these functions built-in is they just need an argument to pass (Lavelle, 2011). They are also easier to remember once one becomes more familiar with Python. Another advantage to built-in functions, is the ability to call the same function with different types of data. This is called “polymorphism” (Elkner, 2015). Another advantage of working with built-in functions versus programmer defined, is that the built-in functions are all stored in a special module called \_\_builtin\_\_. This allows the programmer to quickly access the function information and attributes as a group within the module (Pilgrim, 2000).

 I’d like to add that all of the built-in functions are provided so that they can be called and done so with relative ease of finding or recognizing the nomenclature of such functions based on the activity the developer is working within; for example, opening a file is simply done by calling the open() function with the name of the file to be opened as an argument passed in.

Additionally, to implement polymorphism is to define virtual methods on a super class and then use those same functions (with different behavior) on the child classes. The purpose of polymorphism is to describe an action regardless of the input types.

As far as the built-in module is concerned, yes, quickly accessing function information and attributes is a benefit, but the real benefit comes from not having to write these common coding functions over and over again.

**Explain how to use built-in functions, functions from module, and user-defined functions.**

**Built-in Functions:**Python comes with built-in functions of some of the most widely used operations, such as str(), int(), len(), and type(). A programmer can save valuable amounts of time by using these built-in functions in their day-to-day programming method. One great example of a built-in function, is the len() function. This lets a programmer know the length of an object with the parameters. The len() function is a great tool for aligning columns of text or numbers and knowing how much to indent (Foundation, 2006).

**User-defined functions:**One would want to use a programmer-defined function to complete a set of repetitive tasks within the program, and did not already have a built-in function name. For example, if the programmer wanted to print out the lyrics to a song, they could use a function to pass each line of the lyrics as an argument.

As far as user-defined functions, it’s not so much about repetitive tasks; although, looping mechanisms can certainly help with that. These functions are required for unique programs with uncommon tasks or behaviors.

**Functions from module:**Essentially, a module is just an ordinary file in form .py.Programmers can import any module into main.py using the import function before any Python .py file at the top of main.py. This enables all of the modules functions and attributes to be modified and accessed within main.py (www.en.wikibooks.org, 2016).