Introduction to Software Systems (CS6.201)

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Functions and Methods

Functions are defined using the `def` keyword.

```
def helloWorld():
    print("Hello World")
```

The type signature need not be given, since Python is dynamically typed. The return value is specified with the keyword `return` and parameters are put between brackets in the definition:

```
def grade(marks):
    if marks > 90:
        return 'A'
    elif marks > 80
        return 'B'
    else
        return 'C'
```

The formal parameter `marks` is a local variable and cannot be used outside the definition of `grade()`.

File Manipulation

Opening and Closing

A file can be opened using the `open()` function; for instance,

```
f = open(<path>, 'r')
```

The second argument is the mode to open it in – read, write or binary. Then, we can use the `read()` method to read the entire file and store it in a string.

```
contents = f.read()
```

Note that the file should be closed after reading it, using `f.close()`.

One can avoid the need to close the file manually using `with` syntax:

```
with open(<path>,'r') as f:
    contents = f.read()
print(contents)
```

File Processing

One useful function is `strip()`, which removes trailing and leading characters (spaces by default). `split()` is also commonly used to parse text separated by delimiters.

csv files can be parsed using the `reader()` function in the `csv` module. This allows commas to be present in the values (enclosed in quotes). For example,

```
f = open(<path>, 'r')
row = csv.reader(f)
for line in row:
    <code>
```