

Program

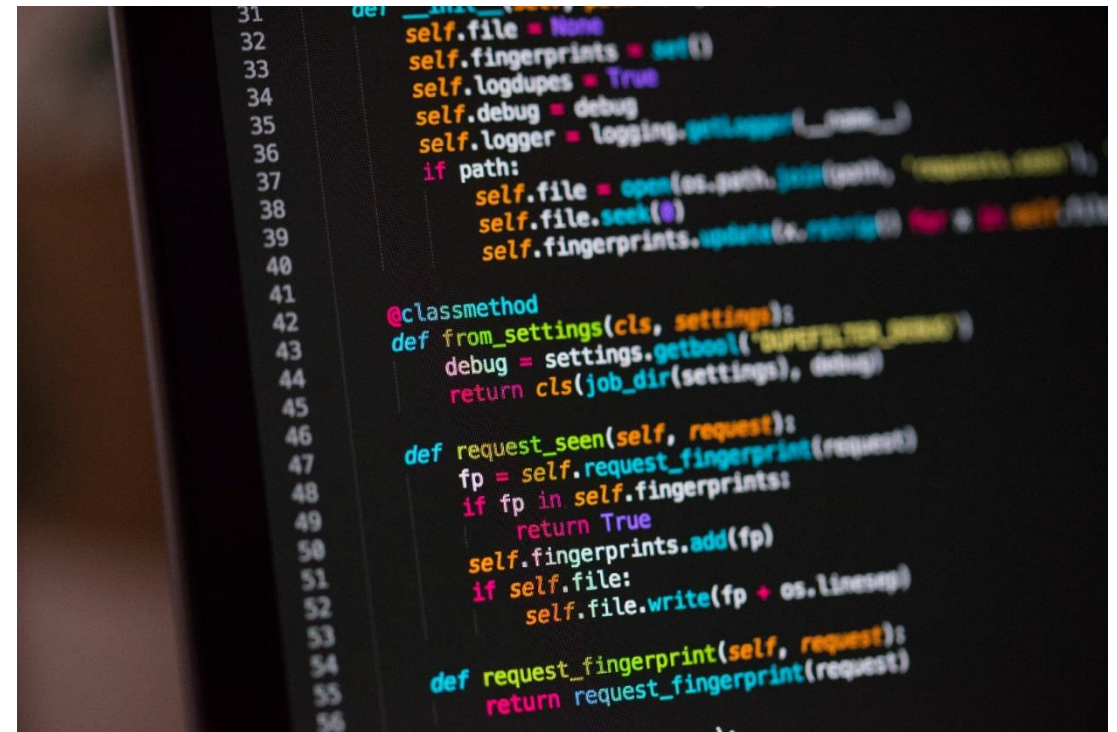
□ Program = Data Structure + Algorithm

□ Data Structure

- A data structure is a data organization, management and storage format that enables efficient access and modification. More precisely, a data structure is a collection of data values, the relationships among them, and the functions or operations that can be applied to the data.

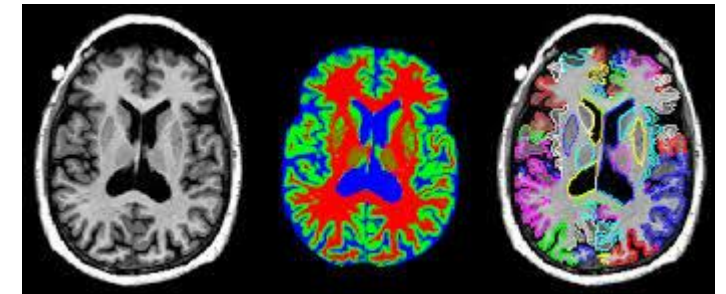
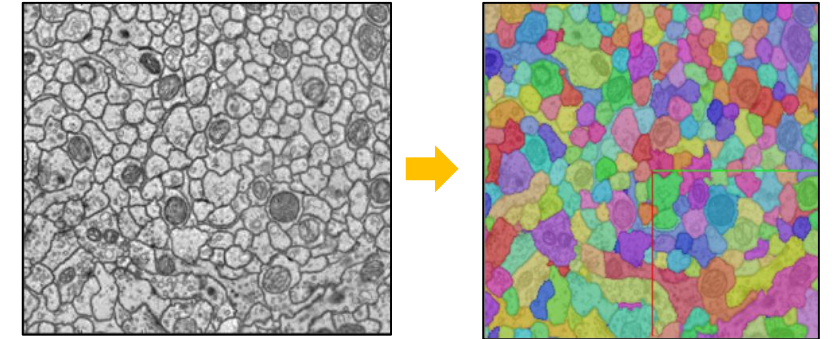
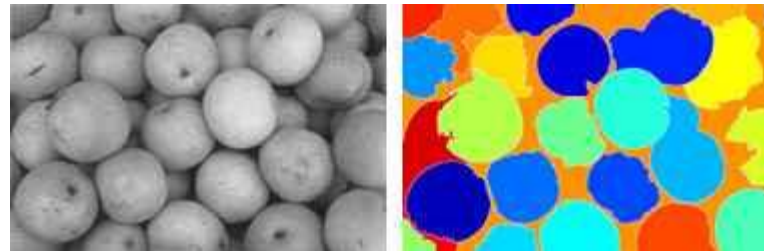
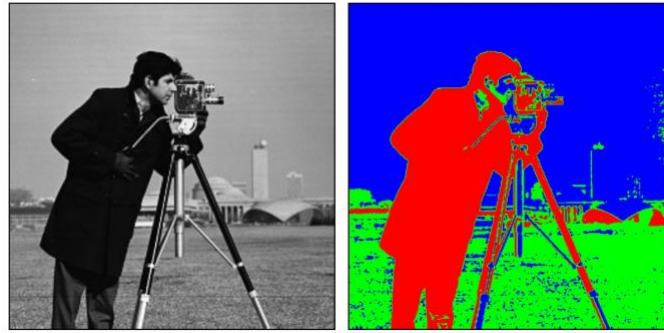
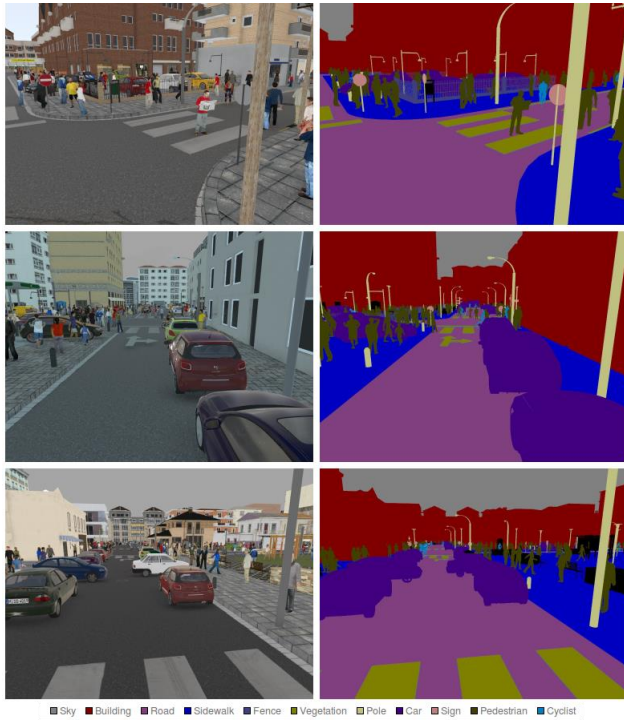
□ Algorithm

- A process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.



```
31     self.file = None
32     self.fingerprints = set()
33     self.logdupes = True
34     self.debug = debug
35     self.logger = logging.getLogger(__name__)
36     if path:
37         self.file = open(os.path.join(path, "requests.log"),
38                         "a")
39         self.file.seek(0)
40         self.fingerprints.update(s.request for s in self.requests)
41
42     @classmethod
43     def from_settings(cls, settings):
44         debug = settings.getbool("SUPERFILTER_DEBUG")
45         return cls(job_dir(settings), debug)
46
47     def request_seen(self, request):
48         fp = self.request_fingerprint(request)
49         if fp in self.fingerprints:
50             return True
51         self.fingerprints.add(fp)
52         if self.file:
53             self.file.write(fp + os.linesep)
54
55     def request_fingerprint(self, request):
56         return request_fingerprint(request)
```

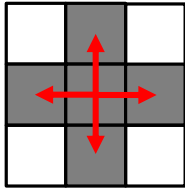
Image segmentation



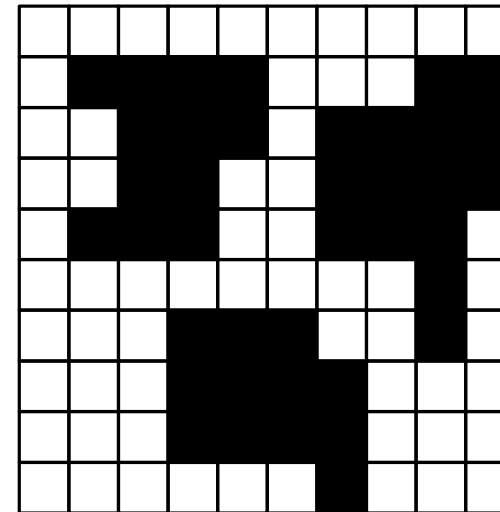
HW

□ Simple image segmentation:

➤ 4-connectivity:



□ **HW: segment left image into 3 isolated islands and count their size.**



□ = 0 ■ = 1



Island 1:
Size = 12



Island 2:
Size = 15



Island 3:
Size = 12