**1.3 Four important attributes of professional software are:**

1. Maintainability

2. Dependability and security

3. Efficiency

4. Acceptability/Usability

The four most important attributes are essentially maintainability, dependability, efficiency (performance) and usability. Other attributes that may be significant could be reusability (can it be reused in other applications), distributability (can it be distributed over a network of processors), portability (can it operate on multiple platforms e.g laptop and mobile platforms) and inter-operability (can it work with a wide range of other software systems).

**Other attributes that are also significant are:**

1. Response time (non-functional attribute)

2. Interactivity

3. Reliable

4. Evolution

1.8 I believe that professional engineers should be certified in the same ways as doctors and lawyers because like doctors and lawyers you understand who has the right credential. Software is extremely important in today’s world and it is increasing higher than any occupation . For instance, high security government software should not be made by just any guy with some knowledge of programs. We should have a way to differentiate between the people who should be in charge of creating and fixing critical programs and those who aren’t quite ready for that type of responsibility

1.9 1. PUBLIC – Software engineers shall act consistently with the public interest.

A software engineer will create non-malicious software that is robust enough to maintain the welfare of its stakeholders.

2. CLIENT AND EMPLOYER – Software engineers shall act in a manner that is in the best interests of their client and employer consistent with the public interest.

A software engineer will create software that is to the standard/specifications of those who request it.

3. PRODUCT – Software engineers shall ensure that their products and related modifications meet the highest professional standards possible.

A software engineer will create software that is acceptable, dependable, secure, efficient, and maintainable.

4. JUDGMENT – Software engineers shall maintain integrity and independence in their professional judgment.

A software engineer will practice good ethics in their profession despite any negative pressure they may receive.

5. MANAGEMENT – Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance

6. PROFESSION – Software engineers shall advance the integrity and reputation of the profession consistent with the public interest.

A software engineer will ensure that a software’s development is at least up to industry standard if not better.

7. COLLEAGUES – Software engineers shall be fair to and supportive of their colleagues.

A software engineer is an understanding, unbiased and dedicated worker within their team.

8. SELF – Software engineers shall participate in lifelong learning regarding the practice of their profession.

A software engineer continues learning as the standards of software engineering change, such that they may maintain the industry standard for development.

1.10 In working on the development of this type of system, there is a fine line between what is ethical and what is not. On one hand, citizens do not want to be tracked because they want to maintain privacy, but on the other hand it is within public interest to prevent terrorist action. Therefore, the best solution to this problem is assuring that the privacy of those being tracked is protected by the software. This means a strong consideration for the security and dependability of the software, as well as a high ethical standard set for the engineers developing it.