**Software Engineering Test 1 Review**

1. **What is customized software? Give an example of it.**
   1. Customized software is software that is designed to meet a specific customer’s needs.
   2. An example of this is would software written to support a specific business process.
2. **What is the first stage of the software development process? What takes place at this stage?**
   1. Specification
   2. Defining what the system should do
3. **Mention and briefly (in about one sentence) explain any three of the eight ethical principles produced by ACM/IEEE societies.**
   1. Public- software engineers shall act consistently with the public interest.
   2. Colleagues- Software engineers shall be fair to and supportive of their colleagues.
   3. Judgment- Software engineers shall maintain integrity and independence in their personal judgement
4. **Briefly describe the interactions among the five phases of waterfall model.**
   1. Requirements definition- System constraints and goals are established and then defined
   2. System and software definition**-** establishes the overall system architecture and describes the fundamental system abstractions and relationships
   3. Implementation and unit testing**-** Software design is realized and then units are tested to assure that each tested unit meets specification
   4. Integration and system testing**-** individual program units are integrated and tested as a complete system to make sure software requirements are met—following this, the software is delivered to the customer
   5. Operation and maintenance**-** after the system is put to use, errors are corrected and improvements are made
5. **What is acceptance testing?**
   1. The final stage of testing before being accepted for use—real data is used to assure that all initial requirements are met and to reveal any problems not seen in test data.
6. **Describe any two problems with using agile methods of software development.**
   1. Due to the rapid turnaround, agile method seems to work best when team members have a relatively high skill level and this is not always the case in larger companies.
   2. In larger companies, there may be a cultural resistance to agile methods if other methods have been used for a long time.
7. **What is pair programming? Mention any two advantages of it.**
   1. Developers work in pairs, checking each other’s work and providing the support to always do a good job
      1. Spreads knowledge across team
      2. Serves as an informal review process as every line of code is looked at by more than one person
8. **Define requirements engineering.**
   1. The process of establishing the services that the customer requires from a system and the constraints under which it operates and is developed.
9. **Define non-functional requirements. Give two examples.**
   1. Define system properties and constraints
      1. Timing
      2. Reliability
10. **How is software requirements document different from design document?**
    1. Software requirements document describes WHAT
    2. Design document describes HOW

* **Software Development Process**
  + Specification- defining what the system should do
  + Designing and Implementation- defining the organization of the system and implementing the system
  + Validation- checking that it does what the customer wants
  + Evolution- changing the system in response to changing customer needs
* **Ethical Principles**
  + Public- Software engineers shall act constantly with the public interest
  + Client and Employer- Software engineers shall act in a manner that is in the best interest of their client and employer consistent with the public interest
  + Product- Software engineers shall ensure that their products and related modifications meet the highest professional standards possible
  + Judgment- Software engineers shall maintain integrity and independence in their judgment
  + Management- Software engineering managers and leaders shall subscribe to and promote an ethical approach to the management of software development and maintenance
  + Profession- Software engineers shall advance the integrity and reputation of the profession consistent with the public interest
  + Colleagues- Software engineers shall be fair to and supportive of their colleagues
  + Self- Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession