COMP 10066

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Why Testing?

- How does this course fit in to my studies?
  - Software Testing is a growing field and is becoming extremely important as software touches more of what we do on a daily basis
  - As the complex _____ as become more and mor
  - An appreciation for testing results in _____ roducing better code.
  - Many entry level positions software developers will be hired as testers first.

Lecture Summary

- **What is Testing?**

- **What is Quality?**

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- **How can we det** ?

- **How do we rela** https://eduassistpro.github.io/

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Defining Software Testing

- **Is an Empirical / methodical investigation conducted to provide information on a software program.**

Goal of Software Testing

- **What is the goal of a Software Tester?**
  - **TO FIND BUGS.**
  - ***To Find bugs as early as possible in the software development process and to make sure that they get fixed (in a reasonable ti***

Types of Testing and Application

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Defining Quality Assurance (QA)

- **Systematic Monitoring and evaluation of different aspects of a product to ensure that standards of quality are being used.**

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Goal of Quality Assurance

- **What is the goal of Quality Assurance?**
  - **Ensure that processes and procedures are followed and to improve the process with the goal that process improvements will result in improving the software.**
    - **Will redu** into the **software**

Programmers Involvement in Testing

- **Are programmers responsible for any of the activities involved in Software Quality and Testing? What are they?**
  - **YES**
  - **Build code tha** **best** **practices and p** **the** **specification**

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Defining ISO Certification

- **What is ISO?**
  - **International Standards Organization**

- **What is ISO 9000?**
  - **Standard for Q**

- **Name the two sections of the ISO s   pply to Software Development?**
    1. **ISO 9001**
    2. **ISO 9000-3**

ISO Certification

- **What are the two main goals of the ISO 9000 process?**

  1. **Targets the Development Process – How does an Organization complete its work.**

  2. **Tells an organization what process to follow to achieve quality.**

     - What ce a particular method.

ISO 9000, ISO 9000-3

- **Areas that need to be addressed for software development**

- **ISO 9000-3, Primary Areas of Concern**
  - **configuration**
  - **change control**
  - **development planning,**
  - **quality planning,**
  - **design and implementation,**
  - **testing and validation**
  - **maintenance.**

Software Testing Careers

- **What are some of the different job titles associated with Software Testing?**
  - Test Technician
  - Test Engineer
  - Software Test
  - Test Automation Specialist
  - Test Lead – Test Alah developer/m
  - Test Manager – Oversees all testing within an Organization
  - QA Engineer
  - Many software development jobs, also list software testing as a part of the job requirements

Traits of a Software Tester

- **What are some of the important traits that a good software tester should have?**
  - Like to Explore
  - Likes to Troubl
  - Relentless
  - Creative – Develop tests that will e
  - "Somewhat" of a Perfectionist
  - Tactful and Diplomatic
  - Persuasive – Needs to convince people of the importance of correcting the bugs.
  - Attention to detail

What makes Software high quality?

- **Provide some of the attributes of High Quality Software:**
    1. **Accurate/Complete Documentation**
    2. **UI follows standards for the device/OS**
    3. **Behaves:** , Consistently
    4. **Does wh** ould do

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Where does testing fall on the Software Development Lifecycle?

- **Waterfall – Thorough specification**
  - **Testing: A complete phase of testing once development is complete**
  - **Testing can be designed from the specification**
    - Should result

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https://pmvidya.com/blog/waterfall-model/

Where does testing fall on the Software Development Lifecycle?

- **Evolutionary / Agile / Spiral**
  - **Testing: Test phases are integrated throughout the development cycle.**
  - **Core Tests can be run regressively as new features are added**
    - Core tests mu
    - New tests will   e added

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Limitations of Software Testing

- **What are some of the realities or limitations of testing software that all parties involved in the development or use of software must be aware of?**
  - **Not all bugs will be found / fixed in any significantly large system.**
  - **You can't writ**
  - **Some bugs are too risky to fix.**
    - May break other components of system.
  - **It may not be worth it to fix the bug**
    - Limited number of users, simple workaround