

3.7.2 Module 3: Software Development and Design Quiz (Answers)

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DevNet Associate 3.7.2 Module 3: Software Development and Design Quiz (Answers)

1. Which software development methodology prescribes that developers follow a strict process order by completing one step in the SDLC process before proceeding to the next step.

- **Waterfall**
- Agile
- Lean
- Scrum

Explanation: The Waterfall model is the earliest SDLC approach. The phases follow a linear sequential flow, where each phase begins only when the previous phase is complete.

2. Which SDLC development methodology employs many quick iterations known as sprints?

- Extreme Programming
- Waterfall
- Lean
- **Agile**

Explanation: In the agile software development model the SDLC process is conducted in many quick iterations called sprints.

3. Which two programming components are defined as blocks of code that perform tasks when executed? (Choose two.)

- **functions**
- **methods**
- parameters
- objects
- arguments

Explanation: Methods and functions are both blocks of code that perform tasks when executed. Functions are stand alone code blocks whereas methods are code blocks associated with an object.

4. A developer wants to find the location of the Python 3 executable file. Which command should the developer use?

- locate python3
- where python3
- **which python3**
- find python3

Explanation: The Linux command **which** *application* is used to find a specific application (in specific directories as defined by the PATH environment variable).

5. Which SDLC phase concludes with functional code that satisfies customer requirements and is ready to be tested?

- maintenance
- testing
- deployment
- **implementation**

Explanation: There are six phases in the SDLC process:

1. **Requirements & analysis:** The product owner and qualified team members gather the requirements for the software to be built.
2. **Design:** Software architects and developers design the software based on the provided software request specification.
3. **Implementation:** Developers take the design documentation and develop the code according to that design. At the conclusion of this phase, functional code that implements customer requirements is ready to be tested.
4. **Testing:** Test engineers take the code and install it into the testing environment so they can follow the test plan.
5. **Deployment:** The software is installed into the production environment.
6. **Maintenance:** The development team provides support for customers and works on software improvements.

6. What are the three states of a Git file? (Choose three.)

- secured
- **staged**
- **committed**
- locked
- **modified**
- deleted

Explanation: There are three Git file states:

- Committed: The version of the file saved in the .git directory.
- Modified: The file has changed but has not been committed to the repository.
- Staged: The modified file is ready to be committed to the repository.

7. Which term is used to describe the first line of an XML document?

- preamble
- opening
- **prologue**
- introduction

Explanation: The XML prologue, which is the first line in an XML document, has a special format represented by a bracketed `<? and ?>`.

8. How does an application use a module in Python?

- by calling the module name
- through the include statement
- by using an assignment statement with a variable
- **through the import statement**

Explanation: A module, in Python, is a Python file with packaged functions. When functions contained in a module are needed in an application in Python, the application uses the **import** statement to include these functions in the application.

9. What is the role of the controller component in the Model-View-Controller (MVC) flow?

- It accepts selected data and displays it to the user.
- It provides visual representations and presentations of the data.
- **It takes user input and manipulates it to the proper format for the model.**
- It takes in user input and manipulates it to fit the format for the model or view.

Explanation: The Model-View-Controller (MVC) design pattern abstracts code and responsibility into three distinct components: model, view, and controller. The controller accepts the input, manipulates the data, and sends the manipulated data to the model.

10. Which code review method involves the developer going through the code line-by-line with the reviewer, allowing the developer to make changes on the spot?

- email pass-around
- formal
- change-based
- **over-the-shoulder**

Explanation: In an over-the-shoulder code review the developer who wrote the code goes through the code changes line by line with a reviewer who provides feedback. In this type of review the code can be changed on the spot so that the reviewer can re-review it on the spot.