# Hybrid 2:

**Question 1**(1 point)

*Saved*

What is the purpose of a WBS?

Question 1 options:

|  |  |
| --- | --- |
|  | To plan durations for tasks |
|  | To plan start and end dates for tasks |
|  | To decompose a complex task (project) into smaller tasks |
|  | To set durations of zero to create milestones |

**Question 2**(1 point)

*Saved*

What is the expected format of the WBS in our course?

Question 2 options:

|  |  |
| --- | --- |
|  | Chart based |
|  | plain-text with hierarchical numbering |
|  | UML sequence diagram |
|  | unordered list |

**Question 3**(1 point)

*Saved*

In this course, what tool is used to estimate the time required to complete tasks in a WBS?

Question 3 options:

|  |  |
| --- | --- |
|  | Gantt chart |
|  | Kanban board |
|  | Scrum board |
|  | To-do List |

**Question 4**(1 point)

*Saved*

What are the two project management software options for Gantt charts in our course?

Question 4 options:

|  |  |
| --- | --- |
|  | MS Project and MS Excel |
|  | MS Word and MS Excel |
|  | MS Excel and Project Libra |
|  | MS Project and Project Libra |

**Question 5**(1 point)

*Saved*

How would you create sub-tasks in MS Word, when using the hierarchical numbering tool? (select the best answer)

Question 5 options:

|  |  |
| --- | --- |
|  | use the indent task and outdent task buttons |
|  | use tab characters for spacing |
|  | use space characters for spacing |
|  | manually type the numbers |

**Question 6**(1 point)

*Saved*

How would you create sub-tasks in MS Project and Project Libra, after entering the tasks from the WBS?

Question 6 options:

|  |  |
| --- | --- |
|  | use the indent and decrease indent buttons |
|  | use tab characters for spacing |
|  | use space characters for spacing |
|  | manually type the numbers |

**Question 7**(1 point)

*Saved*

What is the default work week calendar used in MS Project and Project Libra?

Question 7 options:

|  |  |
| --- | --- |
|  | 4 day work week |
|  | 5 day work week |
|  | 6 day work week |
|  | 7 day work week |

**Question 8**(1 point)

*Saved*

What is the easiest way to create a milestone task in MS Project and MS Excel?

Question 8 options:

|  |  |
| --- | --- |
|  | Right-click and use the insert milestone button |
|  | Set a task with a duration of zero |
|  | Set the start and end date for the task to be the same dates |
|  | Drag and drop one task onto another |

**Question 9**(1 point)

*Saved*

According to Wikipedia [1], what type of structure is a WBS?

Question 9 options:

|  |  |
| --- | --- |
|  | linear |
|  | tree |
|  | recursive |
|  | binary decision |

**Question 10**(1 point)

*Saved*

According to Wikipedia [2], the width of each horizontal bar in a Gantt chart corresponds to the \_\_\_\_\_\_\_\_\_\_.

Question 10 options:

|  |  |
| --- | --- |
|  | duration of each activity |
|  | resource cost of each activity |
|  | how many preceding tasks there are |
|  | how overdue the task is |

# Hybrid 3

**Question 1**(1 point)

*Saved*

What would be the top-down order starting with Presentation from left to right of the Layers in an N-Layered Architecture?

Question 1 options:

|  |  |
| --- | --- |
|  | Presentation Workflow Persistence Data Store |
|  | Presentation Persistence Workflow Data Store |
|  | Persistence Presentation Data Store Workflow |
|  | Presentation Data Store Persistence Workflow |

**Question 2**(1 point)

*Saved*

What is the Workflow Layer also known as according to your assigned reading on Layers?

Question 2 options:

|  |  |
| --- | --- |
|  | Presentation Layer |
|  | Business Rules Layer |
|  | Persistence Layer |
|  | Database Layer |

**Question 3**(1 point)

*Saved*

When a Layered Architecture is implemented as a Physical Architecture the Layers are referred to as \_\_\_\_\_\_\_\_\_\_.

Question 3 options:

|  |  |
| --- | --- |
|  | Packages |
|  | Stages |
|  | Areas |
|  | Tiers |

**Question 4**(1 point)

*Saved*

Which design pattern listed below is not part of the Model View Controller (MVC) design pattern based on your assigned reading?

Question 4 options:

|  |  |
| --- | --- |
|  | Strategy Pattern |
|  | Observer Pattern |
|  | Singleton Pattern |
|  | Compound Pattern |

**Question 5**(1 point)

*Saved*

In the Model View Controller (MVC) design pattern which part typically would be responsible for the applications data?

Question 5 options:

|  |  |
| --- | --- |
|  | Model |
|  | View |
|  | Controller |

**Question 6**(1 point)

*Saved*

In an application using the Model View Controller (MVC) design pattern what component would the user interact with?

Question 6 options:

|  |  |
| --- | --- |
|  | view |
|  | model |
|  | controller |

**Question 7**(1 point)

*Saved*

What type of classification is given to the UML package diagram?

Question 7 options:

|  |  |
| --- | --- |
|  | Behavior Diagram |
|  | Structure Diagram |

**Question 8**(1 point)

*Saved*

UML class diagrams show the structure of an application at the level of the \_\_\_\_\_\_\_\_\_\_.

Question 8 options:

|  |  |
| --- | --- |
|  | classes and interfaces |
|  | application architecture |
|  | deployment strategy |
|  | package structure |

**Question 9**(1 point)

*Saved*

In a UML Sequence diagram an object instance with a vertical line below it would be called a(n) \_\_\_\_\_\_\_\_\_\_.

Question 9 options:

|  |  |
| --- | --- |
|  | synchronous message |
|  | lifeline |
|  | interaction use |
|  | object creation message |

**Question 10**(1 point)

*Saved*

Which of the following is considered to be a best practice for unit testing?

Question 10 options:

|  |  |
| --- | --- |
|  | Arrange Act Assert |
|  | One Assert Per Test Method |
|  | Avoid Test Interdependence |
|  | All of the answers are correct |

# Hybrid 4

**Question 1**(1 point)

*Saved*

Which of the following would be a reason for choosing to write your own code rather than adopting a code library?

Question 1 options:

|  |  |
| --- | --- |
|  | you need customization not found in libraries |
|  | you do not want to have external dependencies |
|  | you want to learn more about coding |
|  | you need specialized optimizations |
|  | all of the answers are correct |

**Question 2**(1 point)

*Saved*

Which of the following would be a reason for adopting an API?

Question 2 options:

|  |  |
| --- | --- |
|  | the licensing locks you into a relationship with the API vendor |
|  | there are reports that the API is not well maintained and/or has security problems |
|  | the cost of using the API via recurring fees will be prohibitively expensive |
|  | licensing the API will save much money in the short and long term versus developing and maintaining an API |

**Question 3**(1 point)

*Saved*

Which of the following areas should I use a library or API instead of writing my own code?

Question 3 options:

|  |  |
| --- | --- |
|  | complex data structures |
|  | complex searching and sorting algorithms |
|  | encryption logic and processing |
|  | payment transactions |
|  | all of the answers are correct |

**Question 4**(1 point)

*Saved*

A software project you are working on requires the use of csv files which are a common data exchange format. Should you write your own code or use a library?

Question 4 options:

|  |  |
| --- | --- |
|  | use a library if possible no need to re-invent the wheel |
|  | write my own code parsing a non-standardized data exchange format should be easy |

**Question 5**(1 point)

*Saved*

Which of the following is a concern when using a code library?

Question 5 options:

|  |  |
| --- | --- |
|  | is it secure? |
|  | is it well maintained? |
|  | is there good community support? |
|  | all of the answers are correct |

**Question 6**(1 point)

*Saved*

For the MySQL Connector/Python licenses which of the following is not a third-party license?

Question 6 options:

|  |  |
| --- | --- |
|  | Cyrus SASL |
|  | Google Protocol Buffers |
|  | ~~Oracle OCI Python SDK~~ |
|  | Mozilla Public License 2.0 |

**Question 7**(1 point)

*Saved*

For the MySQL Connector/Python licenses which of the following is a standard license?

Question 7 options:

|  |  |
| --- | --- |
|  | DNSPython |
|  | Kerberos5 |
|  | GNU Lesser General Public License v2.1 February 1999 |
|  | OpenTelemetry C++ |

**Question 8**(1 point)

*Saved*

For the GNU General Public License is there a suggestion to output a short notice to the terminal on program start up?

Question 8 options:

|  |  |
| --- | --- |
|  | yes |
|  | no |

**Question 9**(1 point)

*Saved*

In the license for Google Maps is there a section on payment terms?

Question 9 options:

|  |  |
| --- | --- |
|  | yes |
|  | no |

**Question 10**(1 point)

*Saved*

In the license for Google Maps there is a section on what a customer will not do (under 3. License) which of the following is not permitted?

Question 10 options:

|  |  |
| --- | --- |
|  | copy the API |
|  | sublicense the services |
|  | resell the services |
|  | access the services for high risk activities |
|  | all of the other answers are not permitted |

## Hybrid 5

Question 1 (1 point) Which of the following is one of the most fundamental principles in software development? Question 1 options:

Layered Architecture

Model View Controller Design Pattern

Separation of Concerns

Question 2 (1 point) When applying Separation of Concerns at the system design level we prefer to Question 2 options:

have entangled relations and hard to track data-flows.

outline the boundaries for the module's awareness of each other.

have a great deal of permissiveness between modules.

Question 3(1 point) When using a layered architecture that support Separation of Concerns the lower layers should Question 3 options:

have no idea of the layers above.

know about all of the other layers and how they work internally.

only be running if the upper layers are available.

Question 4(1 point) What is the best strategy when adding a new program feature to a program designed with layered architecture or MVC? Question 4 options:

separate the feature's functionality into smaller parts then fit those parts into the appropriate layers

implement the feature in the presentation layer or view

implement the feature in the business layer or controller

implement the feature in the persistence layer or model

Question 5 (1 point) When adding a feature that will require a connection to the database to get data the best way to implement it is Question 5 options:

to make a database connection in the presentation layer as I need query inputs from the user anyway.

to put all the code into the persistence layer as the database connection is there.

to put the user interaction part into the presentation layer as data handling part in the business layer any new queries in the persistence layer.

Question 6 (1 point) When adding a feature that interacts with the user by generating a chart the best approach is Question 6 options:

to put all the logic into the persistence layer so the chart generation code has ready access to data.

to add the needed support to get the data for the chart in the persistence layer and / or business layer and generate the chart in the presentation layer.

to put all the logic into the presentation layer and open a direct connection to the database to get data.

Question 7 (1 point) If I have a web project using a MVC architecture and want to show a visual chart to the user what would be an acceptable strategy? Question 7 options:

to show the chart on screen using program logic in the model.

to show the chart on screen using program logic in the controller.

to generate a chart image file via the controller using data from the model and have the chart image file requested from the view.

Question 8 (1 point) Which of the following is an example of what not to do when modifying a program designed with layered architecture or MVC? Question 8 options:

Add new queries for the database in the persistence layer only.

Add database connections directly into the presentation layer.

Add in-memory data sorting logic to the business layer.

Question 9 (1 point) While a layer represents one or more modules that have the same role in an application what is meant by a tier? Question 9 options:

A tier is a sub set of those modules

A tier is similar to a layer conceptually however tiers also involve physical deployment onto separate computer systems

A tier is an organizational approach to versioning client-server software for example tier 1.0 or tier 2.0 and so on

Question 10 (1 point) An inexperienced programmer modifies a layered application to add a new feature that requires user interaction and data processing and a database connection. The approach they use is a single large method in the presentation layer. Which of the following are drawbacks to this approach? (choose the best answer) Question 10 options:

you cannot test the database connection data manipulation or user interface logic separately

you cannot mock the database to test the data manipulation logic

you cannot have different programmers work on implementing the feature at the same time by modifying the layers in parallel

all of the answers are drawbacks to the single method approach

## Hybrid 6

**Question 1**(1 point)

*Saved*

Which of the following approaches to learning a new programming language and creating a project in it has been shown to result in the best learning of the language?

Question 1 options:

|  |  |
| --- | --- |
|  | Use generative AI to write the code for the project then copy and paste without question |
|  | Use a code assistant to write parts of the code within an IDE |
|  | Use web resources to learn syntax libraries principles of the new language and create the project yourself |

**Question 2**(1 point)

*Saved*

What is an important skill to develop when using Artificial Intelligence (AI) Large Language Model (LLM) tools to create source code?

Question 2 options:

|  |  |
| --- | --- |
|  | Being able to copy and paste the generated code |
|  | Being able to break the project down into components so the AI is used on small aspects of the project |
|  | Being able to write generalized AI prompts |

**Question 3**(1 point)

*Saved*

As a computer programmer what is a good thing to have in the advent of AI code generation tools? (choose the best answer)

Question 3 options:

|  |  |
| --- | --- |
|  | Ability to read code slowly |
|  | A good foundation on programming theory concepts and practices |
|  | The ability to copy and paste code |

**Question 4**(1 point)

*Saved*

When taking a course on computer programming which item below outlines a responsible use of AI?

Question 4 options:

|  |  |
| --- | --- |
|  | Have the AI help me debug by examining my code the compiler error message and explaining what is wrong in the code |
|  | Have the AI explain lines of code to me so I can learn |
|  | Have the AI present small yet alternative solutions and have it compare them |
|  | All of the answers are correct |

**Question 5**(1 point)

*Saved*

Which of the following roles should AI best be used as for the purposes of learning a new programming language?

Question 5 options:

|  |  |
| --- | --- |
|  | Solution Generation - the AI writes the entire project so I can without questioning copy and paste |
|  | Personalized Learning Companion - I can chat interactively with the AI for advice and explanations as needed |
|  | Legal Advice - I can turn to the AI for legal help when it used copyrighted code in it's output without permission |

**Question 6**(1 point)

*Saved*

What is a(are) key thing(s) to keep in mind when using an AI tool to learn a new programming language?

Question 6 options:

|  |  |
| --- | --- |
|  | AI tools are assistance not replacements for understanding |
|  | AI can generate code provide explanations but you need to understand the core concepts of the programming language |
|  | Do not rely only on the AI sometimes the generated code is wrong |
|  | It is important to analyze outputs understand why the code works and learn the principles of the programming language |
|  | All of the answers are correct |

**Question 7**(1 point)

*Saved*

What is a drawback to using AI when learning a new programming language?

Question 7 options:

|  |  |
| --- | --- |
|  | AI can provide too much help at times |
|  | AI tends to provide the solutions rather than guide students toward them |
|  | AI code can lower the quality of the codebase the generated code does not fit with the rest of the project |
|  | All of the answers are correct |

**Question 8**(1 point)

*Saved*

What are best practices to keep in mind when using AI tools to learn a new programming language? (choose the best answer)

Question 8 options:

|  |  |
| --- | --- |
|  | Learn enough coding so you know what the tool is generating |
|  | Adopt the role of code reviewer to spot and improve on bad code when generated |
|  | Be on the lookout for copyright protected code slipping into the AI output |
|  | Always assume that the AI tool is a less-skilled programmer than you are |
|  | All of the answers are correct |

**Question 9**(1 point)

*Saved*

With regards to AI tools what is meant by 'Parametric Knowledge'?

Question 9 options:

|  |  |
| --- | --- |
|  | Knowledge of parameters when calling methods or functions |
|  | Information stored within an AI model during training |
|  | Some knowledge formats require parameters to define object cases |

**Question 10**(1 point)

*Saved*

Why is referencing verified human sources of knowledge still important during any learning process even when using AI?

Question 10 options:

|  |  |
| --- | --- |
|  | AI systems sometimes will get things wrong |
|  | Questioning if any source of information is correct is a good habit to get into |
|  | Sometimes AI systems 'hallucinate' generating ideas and concepts that may not exist |
|  | All of the answers are correct |