Assignment 5

Due on 2020-11-25, 23:59:59

1. Consider the following state machine diagram that models the state behavior of the `RobotController` class.

Which one of the following is the actual starting state of a `RobotController`?

- A: Wait and respond
- B: Run and respond
- C: Run
- D: Start

2. Which of the following state machine diagram that models the state behavior of the `RobotController` class?

Which one of the following is an actual starting state of a `RobotController`?

- A: Wait and respond
- B: Run and respond
- C: Run
- D: Start

3. Which of the following is the correct sequence of changes occurring in the `RobotController` class on time that defines the behavior of `RobotController`?

- A: Start -> Run -> Stop
- B: Start -> Wait -> Run
- C: Start -> Run -> Wait
- D: Start -> Stop -> Run

4. Which of the following UML diagrams should you use when allocating resources to a project?

- A: Sequence and communication diagram
- B: Use case and activity diagram
- C: Class and collaboration diagram
- D: Data flow diagram

5. Which of the following would you use to show a state machine diagram for a robot controller?

- A: Start state, run state, wait state, stop state
- B: Wait state, run state, respond state, start state
- C: Start state, run state, respond state, stop state
- D: Respond state, run state, wait state, start state

6. Which of the following UML diagrams is used to show a sequence of events in a robot controller?

- A: Sequence and communication diagram
- B: Use case and activity diagram
- C: Class and collaboration diagram
- D: Data flow diagram

7. Which of the following is not a state in a state machine diagram for a robot controller?

- A: Start
- B: Run
- C: Stop
- D: Wait

8. Which of the following UML diagrams is used to show the behavior of a single class?

- A: Class diagram
- B: Use case diagram
- C: Activity diagram
- D: Sequence diagram

9. Consider the following state transition diagram.

Which of the following is the correct state transition diagram for the given scenario?

- A: Diagram A
- B: Diagram B
- C: Diagram C
- D: Diagram D

10. Which of the following neglects the state machine diagram for a robot controller?

- A: Use of a single state
- B: Use of multiple states
- C: Use of transitions
- D: Use of events

11. Which of the following mechanisms is implemented by a state machine to overcome the state explosion problem in the finite state machine formalism?

- A: Contexts
- B: Guards
- C: Invariants
- D: Priority rules

12. Which of the following is an example of a state transition diagram?

- A: A diagram showing the behavior of a single state
- B: A diagram showing the behavior of multiple states
- C: A diagram showing the transition of states over time
- D: A diagram showing the relationship between states and events

13. Which is the correct state machine diagram for the given scenario?

- A: Diagram A
- B: Diagram B
- C: Diagram C
- D: Diagram D