National University of Computer and Emerging Sciences, Lahore Campus

Course:	Software Design and Analysis	Course Code:	CS-3004
Program:	BS (Computer Science)	Semester:	Fall 2023
Duration:	40 Minutes	Total Marks:	25
Quiz Date:	25-Oct-23	Roll No.	
Section:	BCS-5K	Name:	

Q1) Define Do Activity, Entry Activity and Exit Activity. Give an example for each. (10 marks)

Do Activity:

The Do Activity is an action or set of actions associated with a state that continuously runs as long as the system remains in that state. It represents the behavior or activities that are ongoing while the system is in a particular state. These activities are not tied to the entry or exit of the state but rather describe what the system does while it's in that state.

Entry Activity:

The Entry Activity of a state represents actions or behaviors that are executed when the state is entered. These actions are specific to the state itself and are performed as soon as the system transitions into that state. Entry activities can include initialization tasks, setting initial values, or any other actions that need to occur when the system enters a particular state.

Exit Activity:

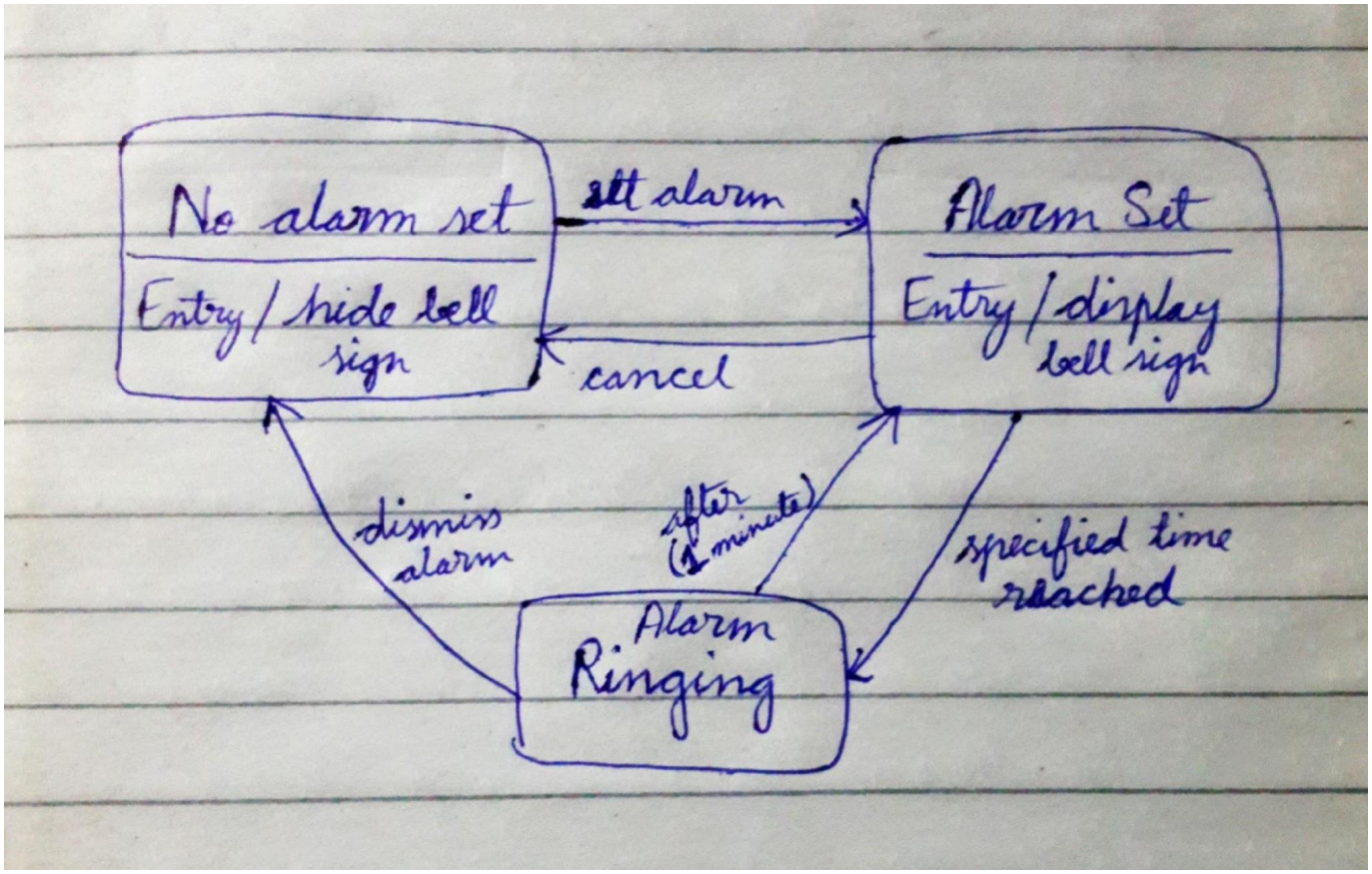
The Exit Activity of a state represents actions or behaviors that are executed when the state is exited, just before transitioning to another state. Exit activities are used to perform any tasks that are necessary as the system leaves the current state.

***Provide at least one example for each.**

Q2) Following is a description of a behavior of an alarm clock: (10 marks)

An alarm clock can have an alarm set or no alarm set. When the user sets an alarm, a bell sign will be displayed on the clock. When a user cancels an alarm, the bell sign will disappear from the clock. If user sets an alarm, the alarm will start ringing at the specified time. Now the user can either dismiss the alarm or it gets snoozed. If dismissed, there is no alarm set. If the alarm is ringing and the user has not dismissed it, then after a minute the alarm is set again as it is automatically snoozed.

Give a UML state diagram for the afore-mentioned alarm clock.



Q3) Match each entry in the first column with the entry in the second column: (5 marks)