State Specification Instructions and Template

Personal Software Process for Engineers

# Table C71: State Specification Template Instructions

|  |  |
| --- | --- |
| Purpose | * To hold the state specifications for each object or program module * Even if the design does not use object-oriented methods, this template should be useful for specifying program state behavior. |
| Header | Enter the following:   * Your name and today’s date * The program name and number * The instructor’s name * The language you will use to write the program * Object/routine: List the name of the object and routine whose state behavior is being described. |
| General | Complete a segment of this template for each state. For example, with four states, the value of *n* would be “4.” There would then be four complete sections; for each section, there would be four rows of next states. Use additional space as needed. |
| State #1 | While states could merely be numbered, it is helpful to give each state a descriptive name. For example, a state machine with three states could use names such as *Empty*, *Partial*, and *Full*. |
| Description | This section holds a text description of the state. |
| Attributes | * List the variable values that characterize the state. For example, if the full state is characterized by K = = 10 and *n* = = 3, then the attribute entry would be K = = 10, *n* = = 3. * Be as precise as possible. |
| Next state #1 | * Enter here the name of State #1. * Under every state, list the names of all the other states. For example, under State *Empty*, the rows would be *Empty*, *Partial*, and *Full*. |
| Transition conditions | * For each next state, list the conditions under which a transition is made from the current state to this state. * Be as precise as possible. * If the transition is impossible, enter impossible. |
| Transition condition examples | For the state *Empty*, the transition conditions might be as follows:   * Empty: no input * Partial: any input * Full: impossible |

# Table C70: State Specification Template

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Student |  | | Date |  |
| Program |  | | Program # |  |
| Instructor |  | | Language |  |
| Object |  | Routine |  | |

|  |  |  |  |
| --- | --- | --- | --- |
| State #1 | | Description | Attributes |
|  | next state #1 | transition conditions | |
|  | next state #2 |  | |
|  | . . . |  | |
|  | . . . |  | |
|  | next state # *n* |  | |
| State #1 | | Description | Attributes |
|  | next state #1 | transition conditions | |
|  | next state #2 |  | |
|  | . . . |  | |
|  | . . . |  | |
|  | next state # *n* |  | |

...

|  |  |  |  |
| --- | --- | --- | --- |
| State #*n* | | Description | Attributes |
|  | next state #1 | transition conditions | |
|  | next state #2 |  | |
|  | . . . |  | |
|  | . . . |  | |
|  | next state # *n* |  | |

Document Markings

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