

## ZOOKEEPER Rules

Z1	IF	?x has hair	Z11	IF	?x is an ungulate ?x has long legs ?x has long neck ?x has tawny color ?x has dark spots
	THEN	?x is a mammal		THEN	?x is a giraffe
Z2	IF	?x gives milk			
	THEN	?x is a mammal	Z12	IF	?x is an ungulate ?x has white color ?x has black stripes
Z3	IF	?x has feathers		THEN	?x is a zebra
	THEN	?x is a bird			
Z4	IF	?x flies ?x lays eggs	Z13	IF	?x is a bird ?x does not fly ?x has long legs ?x has long neck ?x is black and white
	THEN	?x is a bird		THEN	?x is an ostrich
Z5	IF	?x is a mammal ?x eats meat	Z14	IF	?x is a bird ?x does not fly ?x swims ?x is black and white
	THEN	?x is a carnivore		THEN	?x is a penguin
Z6	IF	?x is a mammal ?x has pointed teeth ?x has claws ?x has forward-pointing eyes	Z15	IF	?x is a bird ?x is a good flyer
	THEN	?x is a carnivore		THEN	?x is an albatross
Z7	IF	?x is a mammal ?x has hoofs			
	THEN	?x is an ungulate			
Z8	IF	?x is a mammal ?x chews cud			
	THEN	?x is an ungulate			
Z9	IF	?x is a carnivore ?x has tawny color ?x has dark spots			
	THEN	?x is a cheetah			
Z10	IF	?x is a carnivore ?x has tawny color ?x has black stripes			
	THEN	?x is a tiger			

## BAGGER Rules

B1	IF	<ul style="list-style-type: none"><li>• step is check-order</li><li>• potato chips are to be bagged</li><li>• there is no Pepsi to be bagged</li></ul>	THEN	<ul style="list-style-type: none"><li>• ask the customer whether they would like a bottle of Pepsi</li></ul>	B8	IF	<ul style="list-style-type: none"><li>• step is bag-medium-items</li><li>• a medium item is to be bagged</li><li>• the current bag contains no large items</li><li>• the current bag contains &lt;12 medium items</li></ul>				
B2	IF	<ul style="list-style-type: none"><li>• step is check-order</li></ul>	DEL	<ul style="list-style-type: none"><li>• step is check-order</li></ul>	ADD	<ul style="list-style-type: none"><li>• the medium item is to be bagged</li><li>• the medium item is in the current bag</li></ul>					
B3	IF	<ul style="list-style-type: none"><li>• step is bag-large-items</li><li>• a large item is to be bagged</li><li>• the large item is a bottle</li><li>• the current bag contains &lt;6 large items</li></ul>	DEL	<ul style="list-style-type: none"><li>• <b>the</b> large item is to be bagged</li></ul>	ADD	<ul style="list-style-type: none"><li>• <b>the</b> large item is in the current bag</li></ul>	B9	IF	<ul style="list-style-type: none"><li>• step is bag-medium-items</li><li>• a medium item is to be bagged</li><li>• an empty bag is available</li></ul>		
							DEL	<ul style="list-style-type: none"><li>• the current bag is the current bag</li></ul>			
							ADD	<ul style="list-style-type: none"><li>• the empty bag is the current bag</li></ul>	B10	IF	<ul style="list-style-type: none"><li>• step is bag-medium-items</li><li>• step is bag-medium-items</li><li>• step is bag-small-items</li></ul>
B4	IF	<ul style="list-style-type: none"><li>• step is bag-large-items</li><li>• a large item is to be bagged</li><li>• the current bag contains &lt;6 large items</li></ul>	DEL	<ul style="list-style-type: none"><li>• the large item is to be bagged</li></ul>	ADD	<ul style="list-style-type: none"><li>• the large item is in the current bag</li></ul>	B11	IF	<ul style="list-style-type: none"><li>• step is bag-small-items</li><li>• a small item is to be bagged</li><li>• the current bag contains no large items</li><li>• the current bag contains no medium items</li><li>• the current bag contains &lt;18 small items</li></ul>		
B5	IF	<ul style="list-style-type: none"><li>• step is bag-large-items</li><li>• a large item is to be bagged</li><li>• an empty bag is available</li></ul>	DEL	<ul style="list-style-type: none"><li>• the current bag is the current bag</li></ul>	ADD	<ul style="list-style-type: none"><li>• the empty bag is the current bag</li></ul>		DEL	<ul style="list-style-type: none"><li>• the small item is to be bagged</li></ul>		
							ADD	<ul style="list-style-type: none"><li>• the small item is in the current bag</li></ul>	B12	IF	<ul style="list-style-type: none"><li>• step is bag-small-items</li><li>• a small item is to be bagged</li><li>• an empty bag is available</li></ul>
B6	IF	<ul style="list-style-type: none"><li>• step is bag-large-items</li></ul>	DEL	<ul style="list-style-type: none"><li>• step is bag-large-items</li></ul>	ADD	<ul style="list-style-type: none"><li>• step is bag-medium-items</li></ul>		DEL	<ul style="list-style-type: none"><li>• the current bag is the current bag</li></ul>		
B7	IF	<ul style="list-style-type: none"><li>• step is bag-medium-items</li><li>• a medium item is frozen, but not in a freezer bag</li></ul>	DEL	<ul style="list-style-type: none"><li>• <b>the</b> medium item is not in a freezer bag</li></ul>	ADD	<ul style="list-style-type: none"><li>• <b>the</b> medium item is in a freezer bag</li></ul>	B13	IF	<ul style="list-style-type: none"><li>• step is bag-small-items</li><li>• step is bag-small-items</li><li>• step is done</li></ul>		