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AP Computer Science

Grid World Case Study Part 3

**Do You Know?** (Set 3)

1. **How would you access the row value for loc1?** The row value would be access by using loc1.getRow(); Likewise, if you would like to get the column value, you could use loc1.getCol();
2. **What is the value of b after the following statement is executed?   
   Boolean b = loc1.equals(loc2);**b would equal to false, because the row and column values of loc1 and loc2 are not the same.
3. **What is the value of loc3 after the following statement?**  
   **Location loc3 = loc2.getAdjacentLocation(Location.SOUTH)**That location refers to the location immediately south of Location 2, which would equal to 4,3.
4. **What is the value of dir after the following statement?  
   int dir = loc1.getDirectionToward(new Location(6, 5));**After that statement executes, the value of dir would be 135.
5. **How does getAdjacentLocation method know which adjacent location to return?**The getAdjacentLocation method takes in a parameter, which tells it to look for NORTH, SOUTH, EAST, or WEST grid values. Depending on what heading was given, it will return the location for the grid plot that was that heading.

**Do you know?** (Set 4)

1. **How can you obtain a count of the objects in a grid?**You can get a count of the object in a grid by using the getOccupiedLocations() method, and then using .size() on that array list object.
2. **How can you check if location (10,10) is in a grid?**You can check if a location is in the grid by using Boolean isValid(Location loc); It will return true if the location is valid, and false otherwise. So, assign (10,10) to a location object, and then put it through the isValid() method.
3. **Grid contains method declarations, but no code is supplied in the methods.** **Why? Where can you find the implementation of these methods?**The full API for the Grid interface is in the Appendix.
4. **All the methods that return multiple objects return them in an ArrayList. Do you think it would be better design to return the objects in an array? Explain your answer.**No, I think ArrayLists are much better for this situation. They are much more flexible, and have a better API that can handle this type of information with ease.