**5.**

**1.**Given a Latin square where 7 cells have been instantiated. The partial look ahead strategy reduces the domain of each variable which is in direct constraint with the instantiated variable.

The domains after instantiating 1st variable as value r:

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The domains after instantiating the 2nd variable as value g:

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The domains after instantiating the 3rd variable as value b:

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The domains after instantiating the 4th variable as value y:

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The domains after instantiating the 5th variable as g:

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The domains after instantiating the 6th variable as y:

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The domains after instantiating the 7th variable as b:

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**2.** The full look ahead strategy is obtained by maintaining arc consistency after each step:

So, when we first instantiate a variable 1 as value r, then the domains of future variables are:

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The domains after instantiating the 2nd variable as value g:

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The domains after instantiating the 3rd variable as value b:

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The domains after instantiating the 4th variable as value y:

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The domains after instantiating the 5th variable as g:

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The domains after instantiating the 6th variable as y:

We see that the domains of future variables are further reduced by MAC than that of the forward checking.

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The domains after instantiating the 7th variable as b:

We now observe that after maintaining arc consistency the domain of each variable is almost reduced to a single value which is much less than that of the one obtained by forward checking. Here the solution itself is obtained by maintaining arc consistency.

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