Representation of variables:

JOB PUZZLE

There are eight variables which are the eight jobs.

There are four domains, which are the four people given.

Each job belongs to one person and a person can have no more than two jobs.

**Consistency function:**

Parameters: pointer to variable, domain chosen, current assignment

We first check if the current domain is present more than twice in the current assignment. If not, a series of if-elseif statements represent the constraints.

ZEBRA or EINSTEIN PUZZLE

There are 23 variables- five nationalities, five treats, five colors, four pets and four drinks

Domain- houses numbered 1,2,3,4 and 5 in that order.

**Consistency function:**

Parameters: pointer to variable, domain chosen, current assignment

Constraints are represented by a series of if-else if statements. Since the domain of the variables are constrained by the domain of other variables, we check if the domain of the latter has been delegated in the current assignment.

No. of state spaces searched:

1. Job puzzle

Without mrv : 15

With mrv : 8

1. Einstein puzzle

Without mrv: 624

With mrv : 77

Solutions:

1.Job puzzle:

Without mrv:

Steve has jobs nurse, clerk

Pete has jobs boxer,actor

Thelma has jobs chef,police officer

Roberta has jobs teacher, guard

With mrv:

Steve has job nurse, actor

Pete has job boxer,clerk

Thelma has job chef, police officer

Roberta has job teacher, guard

2. Einstein puzzle - same solution both mrv and without

**house1** - kitkats, Norwegian, yellow, fox

**house2**- hersheys bars, Ukranian, blue , horse, tea

**house3**- smarties, Englishman, red, snails, milk

**house4**- snickers,Spaniard, ivory, dog, orange juice

**house5**- milky ways, Japanese, green, coffee