```
x<-c(s1, s2, s3, s4, s5, s6, s7, s8, s9, s10)

kfold(x, k=5, by)

for (train, test in x){

  print(train)

  print(test)

}
```

Question 1-

Your data set has 20 features. You want to choose features for your linear regression model. If you use the forward selection wrapper method, how many models do you have to evaluate assume you run the method all the way to the full feature set.

Answer1-

In Wrapper Method,

Number of features, N=20

Number of possible feature sets= $2^N = 2^{20}$

Total of 20 models are possible.

Question 1)

Answer for hillary trump question

After 3 rounds,

Henry's/Hilary's point = 1

Trump's point = 2

Points needed by Henry/Hilary to win = 3 - 1 = 2

Points needed by Trump to win = 3 - 2 = 1

Victory is at point 3.

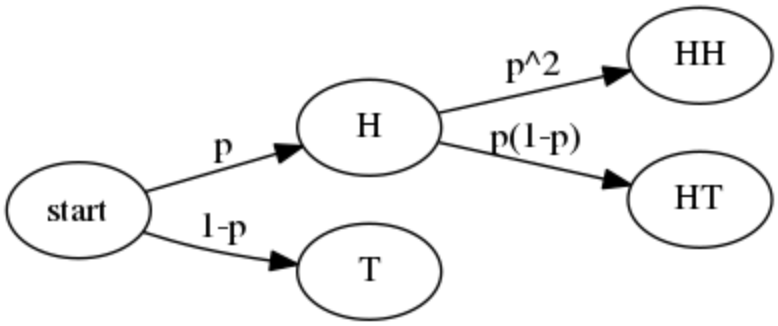
Probability that Trump wins the game = 1 - 1/3 (1/3 = points in ratio needed by trump to win)

= 2/3

Probability that henry/Hilary wins the game = 1 - 2/3

= ⅓

Drawing a tree (or even a partial tree) is the way I'd recommend approaching this sort of problem, at least if you're dealing with a reasonably-sized case set:



If you're dealing with an unfair coin, I find it helps to draw the probabilities on the edges. Where we start, you can see that we flip the coin and get heads with probability

p

p. To get heads again (and for Hillary/Henry) to win, we have to get heads *again*, so we multiply by

p

p (independent events). This gives us a probability of

p

2

p2 to get two heads and for Hillary to win.

Ila chusthe ¼

I dont know which is correct

The model is clearly under fitting the data. we do not require a model with high bias so discarding it.

Model 4.(9th degree) :

This model is highly over fitting the data by giving a lot of importance to training dataset. which can result in very bad prediction for test data set. This model cannot be relied on for prediction.

Model 2 and Model 3: Both the models (linear and cubic) seems good. we can see that model 2 (Linear) have more average cost than model 3(Cubic).we are considering cost as least square error Model 3 provides close predictions for nearly all the points while model 1 will predict unusual result for some points and a very good result for few points. overall model 3 will be the best model and more accurate towards best set predictions and are less prone to errors.

1)

```
1 <- c(5,6,3,2,2,4,1)

2 <- c(2,4,3,2,5,6,3)

3 <-c(7,1,5,2,2,6,3)

4 <-c(6,2,3,2,5,1,5)

5 <-c(2,4,1,5,2,6,3)

6<-c(2,2,4,2,2,2,2)

df <-data.frame(1,2,3,4,5,6)

df
```

Question

11) Suppose, you want to predict the class of new data point x=1 and y=1 using eucludian distance in 3-NN. In which class this data point belong to?

A) + Class
B) – Class

C) Can’t say

D) None of these

Solution: A

All three nearest point are of +class so this point will be classified as +class.

12) In the previous question, you are now want use 7-NN instead of 3-KNN which of the following x=1 and y=1 will belong to?

A) + Class
B) – Class

C) Can’t say

Solution: B

Now this point will be classified as – class because there are 4 – class and 3 +class point are in nearest circle.