1)I. Start to search beginning of the shelf.

   Compare each items with "Fitzgerald, F. Scott," book name.

   Until if you found it, then take and mark.

   If you do not found it yet, check and compare each items sequencely.

  II. start to search middle of the shelf.

   Firstly, Compare the author's last name  in the middle book with "Fitzgerald, F. Scott,".

   If you found it, then marked it.

   If you do not found it yet, go left or right side according to sequence.

   And search and compare each items with "Fitzgerald, F. Scott,".

2) I. 8 comparisons

   II. (3,5,8,12,17,19,23,27,30,45)

     3 comparisons

3) I. $6^{th}$ moth _3+5=8branches

     $8^{th}$ mont_8+13=21branches

2. They should plan 21 branches

3. 10 month_21+34=55 branches

   11 month_55+34=89 branches

   12 month_89+55=144 branches

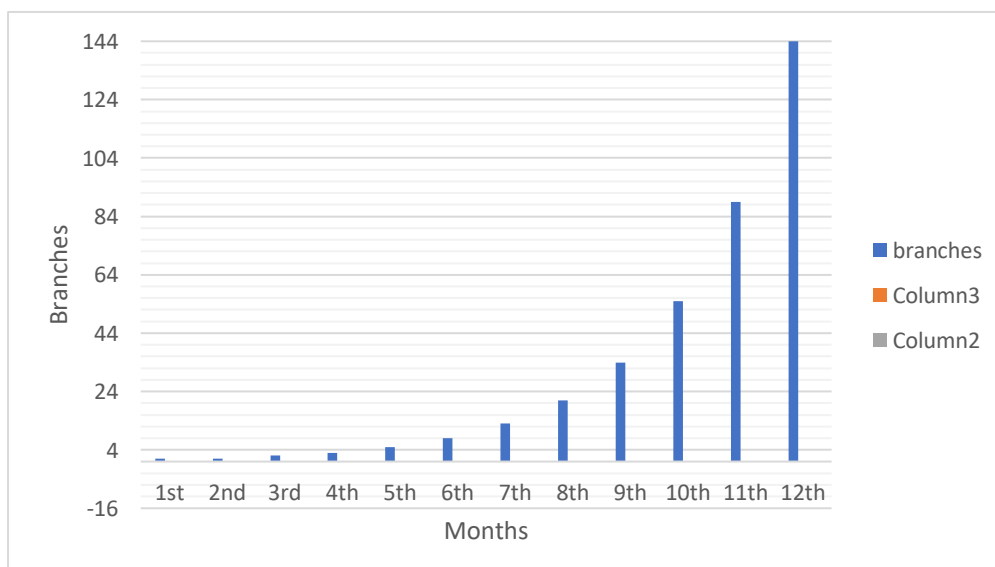4.Average= ( 8+ 13+ 21+ 34+ 55+89+144)/6

         =60.666

5.  total number of branches=144

6. 1:1/2:1 /3:1+1=2 /4;2+1+1=4 /5:4+2+1=7 /6:7+4+2=13

Fibonacci sequence -8 and this sequence-13 branches

7.highest rate is =13-7=6

8.

9. 13: 144+89=233

   14; 233+144=377

   15: 377+233=610

10.