LL1=1->2->3->4->6 LL2= 2->4->6->8.

IL= 2->4->6

1 <= 8ize of LL <= 104 Constraints :> K= node -> data = 104 LL1 = 10-> 20->40->50

LL2= 15-740

2L = 40

Two approaches.

) Two Pointer approach [ Efficient]

= Time complexity = 0 (N+M) Space complexity = O(1) for medityring imput

> = Q(min(N,M)) if Creating new Crit

2) Hash Set Approach

Time = O(NAM)

= 0(N) 000 (M)

Extra space for hash set

1) Two Pointer Approach

Algorithm: 1) Initialize two pointers, p1 & p2 at the heads of the two linked lists.

2) Compare the values @ p1 8p2

\* If pl->val == p2->val, add the node to the senult List & more both pointers forward.

\* If pl-> val < p2-> val, more pl forward

\* If pl-> val > p2-> val, more p2 forward

3) Repeat until either list is exhausted

4) Return the new intersection list

```
Lython Cade
                   TELL CENTALL CENTRO COURTED LININGED LIST
   class List Node:
      def __init__(self, val=0, next=None):
          Selfeval=val
           Selfo next= next
  def intersection_of_sorted_lists (head 1, head 2):
       dummy = ListNode()
      toul = dummy
p1, p2 = head1, head2
                                         [ 2 solf 3 ] Longon which (3)
      while pl and p2:
                                      greton of (1) = pliesty or story;
if pl.val == p2, val:
tail. next = List Node (pl. val)
tail=tail.next
           pl=pl.next
         p2=p2, next
                                        Children John of the state of
        elif pl. val <p2, val:
                              entire i) Initially the politice
           p1=p1.next
```

(MILE) O = planspers) and -

the true living with.

totale of ranger replaced to

has a love-squadove-ly for \*

is the second state promises formand

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1) believe the ress in Exaction hills

to move of 19 somes, Java- 29 - Ber 2-14 13 x

armof 29-2018, love-59 = 30x 6-19 18 \*

p2=p2. next

retuen dummy next

```
C code
Hinclude estations
# include statib.h-
struct List Node ?
   int val;
   struct ListMode *next; 3;
struct Listaloda "Intersection Of forted Lists (struct Listaloda" headl,
                                      struct ListNode* head 2) }
    struct ListMode durnny;
    struct ListMode tail = & durmy;
    dummy-next - NULL;
    while (head 1 XX head 2) f
       if (head 1 -> val == head 2 -> val) ?
         struct ListMode* newNode = (struct ListMode*) malloc (size of
                        struct listNode));
         neurlode, -> val = head1 -> val;
         henorhode -> next = NULL;
         tail -> next = now Node;
         tail = new Mode;
         head = head 1 -> next;
         hood2=hood2->hokt;
       I else if (head) -> val = head2 -> val){
           head = head -> next;
       Jetse
         hoad 2 - hoad 2 -> Mext;
   return dummynext;
```

```
C44)
```

Node \* find Intersection (Nocle \* head 1, Node \* head 2

Place List Norte. Part.

brodering shalltil the

much cholately down

Jist tabalatical tracks

Samuel was properly

headle fearles have

head to head that

class Node:

def -- init\_- (self, data):
self.data = data sey-next = None

def find intersection (Great , head 2):

head = None

Cuer = None

while head 1 and head 2:

if head 1. data < head 2. data: head 1 = head 1 next

elif head 1. data > head 2. data head 2 = head 2 · next

if head is None: head = None (head 1. data) cue = head

else!

CUER. next = Neole (Gread 1. data)

cuer = cuer. next-

head 1 = head 1. next

head 2 = head 2 - next

return head

Step-by-step Executron Actron heads, data head 1. data more head! forward Add '2' to intercetion & more both -2 more head 1 -Adol 4 to intersection, more both -> Add 6 to intersection more toth-Stop (one list is empty. Mone arian (duct in Pythora) to store the last riede some ( supper suggest). TH . France node devel-will wrong a queue the each node update the mapped of the latest make . The determ with consist of the value provide and. was inteled by HD.