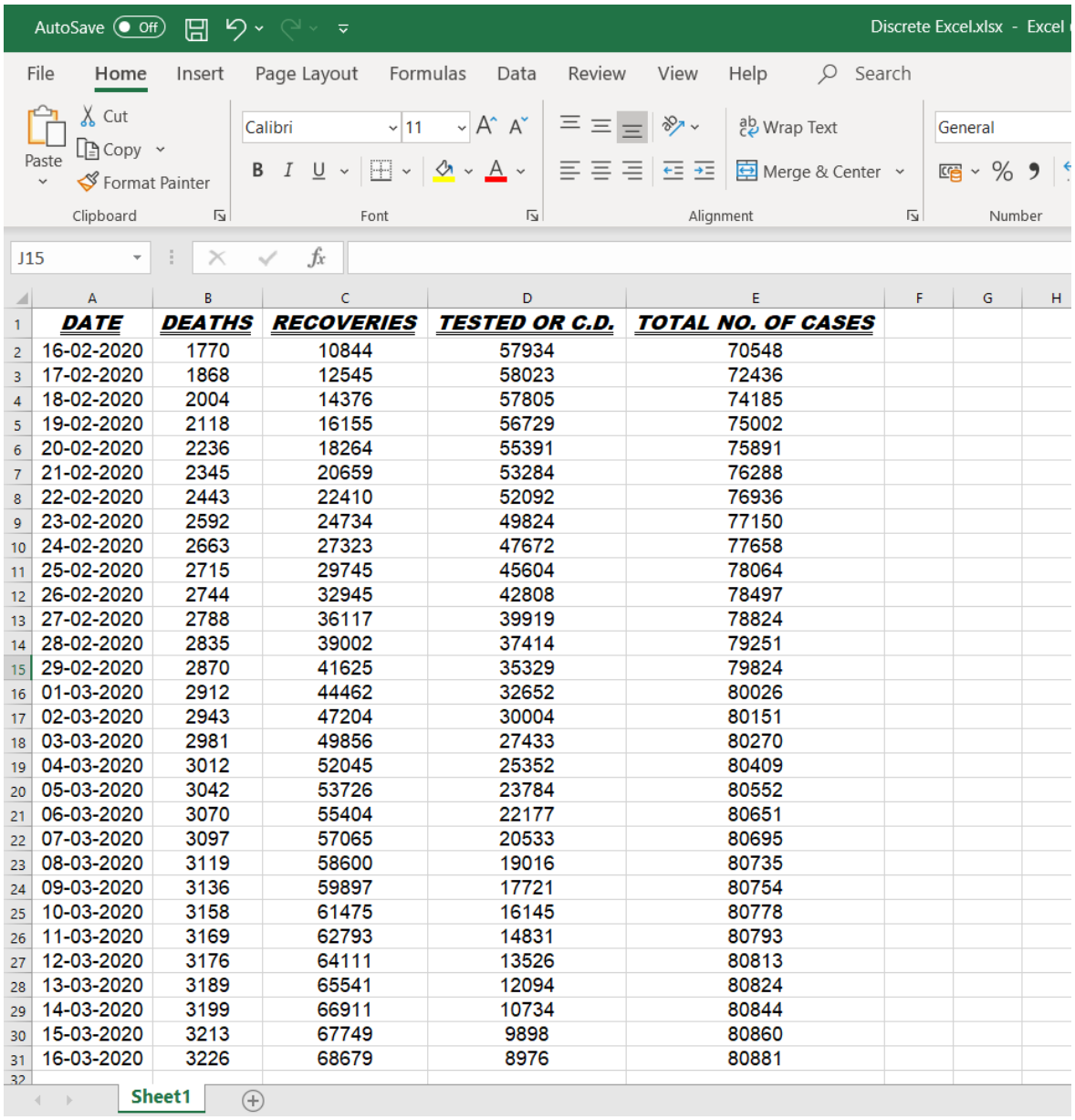
Division One

We converted the resource into Excel File and accessed the data in Python performed the **Basic Combinatorics: Rule of sum** in loop to calculate total cases of the next day in loop.

The Excel File:



	A	B	C	D	E	F	G	H
1	DATE	DEATHS	RECOVERIES	TESTED OR C.D.	TOTAL NO. OF CASES			
2	16-02-2020	1770	10844	57934	70548			
3	17-02-2020	1868	12545	58023	72436			
4	18-02-2020	2004	14376	57805	74185			
5	19-02-2020	2118	16155	56729	75002			
6	20-02-2020	2236	18264	55391	75891			
7	21-02-2020	2345	20659	53284	76288			
8	22-02-2020	2443	22410	52092	76936			
9	23-02-2020	2592	24734	49824	77150			
10	24-02-2020	2663	27323	47672	77658			
11	25-02-2020	2715	29745	45604	78064			
12	26-02-2020	2744	32945	42808	78497			
13	27-02-2020	2788	36117	39919	78824			
14	28-02-2020	2835	39002	37414	79251			
15	29-02-2020	2870	41625	35329	79824			
16	01-03-2020	2912	44462	32652	80026			
17	02-03-2020	2943	47204	30004	80151			
18	03-03-2020	2981	49856	27433	80270			
19	04-03-2020	3012	52045	25352	80409			
20	05-03-2020	3042	53726	23784	80552			
21	06-03-2020	3070	55404	22177	80651			
22	07-03-2020	3097	57065	20533	80695			
23	08-03-2020	3119	58600	19016	80735			
24	09-03-2020	3136	59897	17721	80754			
25	10-03-2020	3158	61475	16145	80778			
26	11-03-2020	3169	62793	14831	80793			
27	12-03-2020	3176	64111	13526	80813			
28	13-03-2020	3189	65541	12094	80824			
29	14-03-2020	3199	66911	10734	80844			
30	15-03-2020	3213	67749	9898	80860			
31	16-03-2020	3226	68679	8976	80881			
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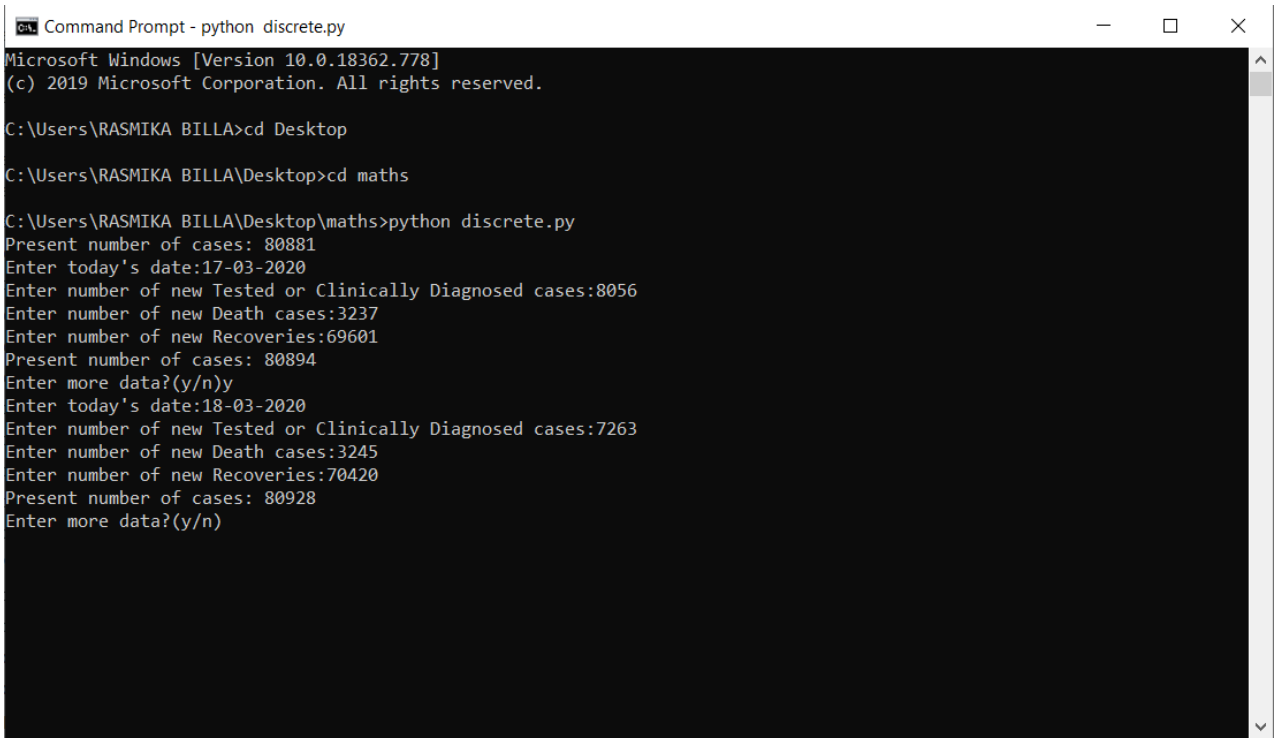
Sheet1

The code: (Python 3)

```
import xlrd
import xlwt

wb = xlrd.open_workbook(r'E:\Discrete Excel.xlsx')
sheet = wb.sheet_by_index(0)

workbook = xlwt.Workbook()
wsheet = workbook.add_sheet("New Data")

wsheet.write(0,0,'Date')
wsheet.write(0,1,'Deaths')
wsheet.write(0,2,'Recoveries')
wsheet.write(0,3,'Tested or C.D')
wsheet.write(0,4,'Total no. of cases')

r=sheet.nrows-1
c=sheet.ncols-1

print("Present number of cases:", int(sheet.cell_value(r, c)))

i=1
j=0

while True:
    ndate=input("Enter today's date:")
    ncases=input("Enter number of new Tested or Clinically Diagnosed cases:")
    ndeaths=input("Enter number of new Death cases:")
    nrec=input("Enter number of new Recoveries:")
    try:
        nc=int(ncases)
        nd=int(ndeaths)
        nr=int(nrec)
    except:
        print("Wrong input try again.")
        continue

    tcases = nc + nd + nr

    wsheet.write(i,j,ndate)
    j=j+1
    wsheet.write(i,j,nd)
    j=j+1
    wsheet.write(i,j,nr)
    j=j+1
```

```
    wsheet.write(i,j,nc)
    j=j+1
    wsheet.write(i,j,int(tcases))

    i=i+1
    j=0

    print("Present number of cases:", tcases)

    ch=input("Enter more data?(y/n)")
    if ch == 'n' or ch == 'N':
        break

workbook.save(r'D:\output.xls')
```

Output:



The resource data of further dates 17-03-2020 and 18-03-2020

The output shown by the code verifies the data given in the resource i.e. on 17-03-2020 and 18-03-2020, the total number of cases are 80,894 and 80,928 respectively.