```python
import pandas as pd
```

```python
df = pd.read_csv(r"C:\Users\user\Downloads\Assignment_1_2 (2)\Assignment_1 2\chit fund exercise.csv")
df.head(5)
```

Out[2]:

	Month	Contribution	Amount won by the bidder	Chit fund organizer commission	Net amount recd by Bid winner	Amount returned to everyone in the group
0	1	2000	40000	2500	37500	400
1	2	2000	42000	2500	39500	320
2	3	2000	45000	2500	42500	200
3	4	2000	48000	2500	45500	80
4	5	2000	40000	2500	37500	400

```python
#Adding a column for days per month by apply function
df['Days'] = df.apply(lambda add:add.Month*30.417,axis=1)
df.head(5)
```

Out[3]:

	Month	Contribution	Amount won by the bidder	Chit fund organizer commission	Net amount recd by Bid winner	Amount returned to everyone in the group	Days
0	1	2000	40000	2500	37500	400	30.417
1	2	2000	42000	2500	39500	320	60.834
2	3	2000	45000	2500	42500	200	91.251
3	4	2000	48000	2500	45500	80	121.668
4	5	2000	40000	2500	37500	400	152.085

```python
df.describe()
```

Out[4]:

	Month	Contribution	Amount won by the bidder	Chit fund organizer commission	Net amount recd by Bid winner	Amount returned to everyone in the group	Days
count	25.000000	25.0	25.000000	25.0	25.000000	25.000000	25.000000
mean	13.000000	2000.0	43800.000000	2500.0	41300.000000	248.000000	395.421000
std	7.359801	0.0	2857.738033	0.0	2857.738033	114.309521	223.863059
min	1.000000	2000.0	40000.000000	2500.0	37500.000000	0.000000	30.417000
25%	7.000000	2000.0	42000.000000	2500.0	39500.000000	200.000000	212.919000
50%	13.000000	2000.0	43000.000000	2500.0	40500.000000	280.000000	395.421000
75%	19.000000	2000.0	45000.000000	2500.0	42500.000000	320.000000	577.923000
max	25.000000	2000.0	50000.000000	2500.0	47500.000000	400.000000	760.425000

```python
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 25 entries, 0 to 24
Data columns (total 7 columns):
Month                                     25 non-null int64
Contribution                              25 non-null int64
Amount won by the bidder                  25 non-null int64
Chit fund organizer commission            25 non-null int64
Net amount recd by Bid winner             25 non-null int64
Amount returned to everyone in the group  25 non-null int64
Days                                      25 non-null float64
dtypes: float64(1), int64(6)
memory usage: 1.4 KB
```

```python
df.isnull().sum()
```

```
Month                                     0
Contribution                              0
Amount won by the bidder                  0
Chit fund organizer commission            0
Net amount recd by Bid winner             0
Amount returned to everyone in the group  0
Days                                      0
dtype: int64
```

```python
df.corr()
```

Out[7]:

	Month	Contribution	Amount won by the bidder	Chit fund organizer commission	Net amount recd by Bid winner	Amount returned to everyone in the group	Days
Month	1.000000	NaN	0.475457	NaN	0.475457	-0.475457	1.000000
Contribution	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Amount won by the bidder	0.475457	NaN	1.000000	NaN	1.000000	-1.000000	0.475457
Chit fund organizer	NaN	NaN	NaN	NaN	NaN	NaN	NaN

			commission	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Net amount recd by Bid winner	0.475457	NaN	1.000000	NaN	1.000000	-1.000000	0.475457
Amount returned to everyone in the group	-0.475457	NaN	-1.000000	NaN	-1.000000	1.000000	-0.475457
Days	1.000000	NaN	0.475457	NaN	0.475457	-0.475457	1.000000

In [8]:
```python
#Annualized Return for First month
#Intially calculate absolute value
present_NAV = 37500
initial_NAV = 2000
Absolute_returns = ((present_NAV-initial_NAV)/initial_NAV)*100
print('Absolute_returns',Absolute_returns)
#Convert months into days
AR_person_first_month = (1+Absolute_returns)**(365/df['Days'][0])-1
print('Annualized return for first month:',AR_person_first_month,'%')
```

Absolute_returns 1775.0
Annualized return for first month: 9.837578661015391e+38 %

In [9]:
```python
#Annualized Return for First month is calculated by => ((principal+gain)/principal)^(1/years)-1
present_NAV = 47500
initial_NAV = 2000
Absolute_returns = ((present_NAV-initial_NAV)/initial_NAV)*100
print('Absolute_returns',Absolute_returns)
#Convert months into days
AR_person_first_month = (1+Absolute_returns)**(365/df['Days'][24])-1
print('Annualized return for last month:',AR_person_first_month,'%')
```

Absolute_returns 2275.0
Annualized return for last month: 39.87191855436604 %

In [ ]:

In [10]:
```python
initial_NAV = 2000
present_NAV = df['Net amount recd by Bid winner']
days = df['Days']

for i in present_NAV:
    Absolute_return = round(((present_NAV-initial_NAV)/initial_NAV)*100)
    print(Absolute_return)
```

```
0     1775.0
1     1875.0
2     2025.0
3     2175.0
4     1775.0
5     1875.0
6     1925.0
7     1975.0
8     1775.0
9     1875.0
10    2025.0
11    2175.0
12    1775.0
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15    1925.0
16    1825.0
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```

In [11]:
```python
for Absolute_return in Absolute_return:
    AR_for_every_month_bid_winner = (1+Absolute_return)**(365/760)-1
    print(AR_for_every_month_bid_winner,'%')
```

```
35.35697470697645 %
36.32614487787625 %
37.73085639473705 %
39.08248133262048 %
35.35697470697645 %
36.32614487787625 %
36.800661417020464 %
37.268817576469345 %
35.35697470697645 %
36.32614487787625 %
37.73085639473705 %
39.08248133262048 %
35.35697470697645 %
36.32614487787625 %
36.800661417020464 %
36.800661417020464 %
35.8450084799326 %
36.32614487787625 %
37.73085639473705 %
37.73085639473705 %
37.268817576469345 %
38.18700588924367 %
38.6374803221869 %
39.08248133262048 %
39.956812514922085 %
```

In [ ]:

In [ ]: