```
C:\Users\HP\Desktop\OS-Project>g++ final.cpp
C:\Users\HP\Desktop\OS-Project>a.exe
Enter Memory Size: 2000
Enter the number of processes: 9
Enter process details as stated:
Process ID: 1
Process Arrival Time: 0
Process Lifetime: 200
No of segments of Process: 2
Enter size of segments separated by space: 200 200
Process ID: 2
Process Arrival Time: 0
Process Lifetime: 2000
No of segments of Process: 1
Enter size of segments separated by space: 200
Process ID: 3
Process Arrival Time: 0
Process Lifetime: 200
No of segments of Process: 2
Enter size of segments separated by space: 200 100
Process ID: 4
Process Arrival Time: 0
Process Lifetime: 2000
No of segments of Process: 1
Enter size of segments separated by space: 100
Process ID: 5
Process Arrival Time: 0
Process Lifetime: 200
No of segments of Process: 3
Enter size of segments separated by space: 200 200 100
Process ID: 6
Process Arrival Time: 0
Process Lifetime: 2000
No of segments of Process: 1
Enter size of segments separated by space: 400
Process ID: 7
Process Arrival Time: 500
Process Lifetime: 1500
No of segments of Process: 2
Enter size of segments separated by space: 300 500
Process ID: 8
Process Arrival Time: 600
```

Process Lifetime: 1500
No of segments of Process: 3
Enter size of segments separated by space: 200 200 200
Process ID: 9
Process Arrival Time: 700
Process Lifetime: 1500
No of segments of Process: 2
Enter size of segments separated by space: 200 200
Press 1 for first fit or 2 for best fit or 3 for worst fit or any other number key for exiting: 1
----------QUEUE STATUS----------
At time t = 0, these are the processes present in Queue:
Process: 1 Arrival Time: 0
----------QUEUE STATUS----------
At time t = 0, these are the processes present in Queue:
Process: 1 Arrival Time: 0
Process: 2 Arrival Time: 0
----------QUEUE STATUS----------
At time t = 0, these are the processes present in Queue:
Process: 1 Arrival Time: 0
Process: 2 Arrival Time: 0
Process: 3 Arrival Time: 0
----------QUEUE STATUS----------
At time t = 0, these are the processes present in Queue:
Process: 1 Arrival Time: 0
Process: 2 Arrival Time: 0
Process: 3 Arrival Time: 0
Process: 4 Arrival Time: 0
----------QUEUE STATUS----------
At time t = 0, these are the processes present in Queue:
Process: 1 Arrival Time: 0
Process: 2 Arrival Time: 0
Process: 3 Arrival Time: 0
Process: 4 Arrival Time: 0
Process: 5 Arrival Time: 0
----------QUEUE STATUS----------
At time t = 0, these are the processes present in Queue:
Process: 1 Arrival Time: 0
Process: 2 Arrival Time: 0
Process: 3 Arrival Time: 0
Process: 4 Arrival Time: 0
Process: 5 Arrival Time: 0
Process: 6 Arrival Time: 0

Process: 1 added at time t = 0
----------MEMORY STATUS---------- at time t = 0
Process :- 1 Segment :- 0 Size :-200 Location :- 0 - 199
Process :- 1 Segment :- 1 Size :-200 Location :- 200 - 399
Hole Present :- Size :- 1600 Location :- 400 - 1999
Process: 2 added at time t = 0
----------MEMORY STATUS---------- at time t = 0
Process :- 1 Segment :- 0 Size :-200 Location :- 0 - 199
Process :- 1 Segment :- 1 Size :-200 Location :- 200 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599
Hole Present :- Size :- 1400 Location :- 600 - 1999
Process: 3 added at time t = 0
----------MEMORY STATUS---------- at time t = 0
Process :- 1 Segment :- 0 Size :-200 Location :- 0 - 199
Process :- 1 Segment :- 1 Size :-200 Location :- 200 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599
Process :- 3 Segment :- 0 Size :-200 Location :- 600 - 799
Process :- 3 Segment :- 1 Size :-100 Location :- 800 - 899
Hole Present :- Size :- 1100 Location :- 900 - 1999
Process: 4 added at time t = 0
----------MEMORY STATUS---------- at time t = 0
Process :- 1 Segment :- 0 Size :-200 Location :- 0 - 199
Process :- 1 Segment :- 1 Size :-200 Location :- 200 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599
Process :- 3 Segment :- 0 Size :-200 Location :- 600 - 799
Process :- 3 Segment :- 1 Size :-100 Location :- 800 - 899
Process :- 4 Segment :- 0 Size :-100 Location :- 900 - 999
Hole Present :- Size :- 1000 Location :- 1000 - 1999
Process: 5 added at time t = 0
----------MEMORY STATUS---------- at time t = 0
Process :- 1 Segment :- 0 Size :-200 Location :- 0 - 199
Process :- 1 Segment :- 1 Size :-200 Location :- 200 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599
Process :- 3 Segment :- 0 Size :-200 Location :- 600 - 799
Process :- 3 Segment :- 1 Size :-100 Location :- 800 - 899
Process :- 4 Segment :- 0 Size :-100 Location :- 900 - 999
Process :- 5 Segment :- 0 Size :-200 Location :- 1000 - 1199
Process :- 5 Segment :- 1 Size :-200 Location :- 1200 - 1399
Process :- 5 Segment :- 2 Size :-100 Location :- 1400 - 1499
Hole Present :- Size :- 500 Location :- 1500 - 1999
Process: 6 added at time t = 0
----------MEMORY STATUS---------- at time t = 0

Process :- 1 Segment :- 0 Size :-200 Location :- 0 - 199
Process :- 1 Segment :- 1 Size :-200 Location :- 200 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599
Process :- 3 Segment :- 0 Size :-200 Location :- 600 - 799
Process :- 3 Segment :- 1 Size :-100 Location :- 800 - 899
Process :- 4 Segment :- 0 Size :-100 Location :- 900 - 999
Process :- 5 Segment :- 0 Size :-200 Location :- 1000 - 1199
Process :- 5 Segment :- 1 Size :-200 Location :- 1200 - 1399
Process :- 5 Segment :- 2 Size :-100 Location :- 1400 - 1499
Process :- 6 Segment :- 0 Size :-400 Location :- 1500 - 1899
Hole Present :- Size :- 100 Location :- 1900 - 1999
Process: 1 is completed and removed at time t = 200
----------MEMORY STATUS---------- at time t = 200
Hole Present :- Size :- 200 Location :- 0 - 199
Hole Present :- Size :- 200 Location :- 200 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599
Process :- 3 Segment :- 0 Size :-200 Location :- 600 - 799
Process :- 3 Segment :- 1 Size :-100 Location :- 800 - 899
Process :- 4 Segment :- 0 Size :-100 Location :- 900 - 999
Process :- 5 Segment :- 0 Size :-200 Location :- 1000 - 1199
Process :- 5 Segment :- 1 Size :-200 Location :- 1200 - 1399
Process :- 5 Segment :- 2 Size :-100 Location :- 1400 - 1499
Process :- 6 Segment :- 0 Size :-400 Location :- 1500 - 1899
Hole Present :- Size :- 100 Location :- 1900 - 1999
Process: 3 is completed and removed at time t = 200
----------MEMORY STATUS---------- at time t = 200
Hole Present :- Size :- 200 Location :- 0 - 199
Hole Present :- Size :- 200 Location :- 200 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599
Hole Present :- Size :- 200 Location :- 600 - 799
Hole Present :- Size :- 100 Location :- 800 - 899
Process :- 4 Segment :- 0 Size :-100 Location :- 900 - 999
Process :- 5 Segment :- 0 Size :-200 Location :- 1000 - 1199
Process :- 5 Segment :- 1 Size :-200 Location :- 1200 - 1399
Process :- 5 Segment :- 2 Size :-100 Location :- 1400 - 1499
Process :- 6 Segment :- 0 Size :-400 Location :- 1500 - 1899
Hole Present :- Size :- 100 Location :- 1900 - 1999
Process: 5 is completed and removed at time t = 200
----------MEMORY STATUS---------- at time t = 200
Hole Present :- Size :- 200 Location :- 0 - 199
Hole Present :- Size :- 200 Location :- 200 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599

Hole Present :- Size :- 200 Location :- 600 - 799
Hole Present :- Size :- 100 Location :- 800 - 899
Process :- 4 Segment :- 0 Size :-100 Location :- 900 - 999
Hole Present :- Size :- 200 Location :- 1000 - 1199
Hole Present :- Size :- 200 Location :- 1200 - 1399
Hole Present :- Size :- 100 Location :- 1400 - 1499
Process :- 6 Segment :- 0 Size :-400 Location :- 1500 - 1899
Hole Present :- Size :- 100 Location :- 1900 - 1999
----------QUEUE STATUS----------
At time t = 500, these are the processes present in Queue:
Process: 7 Arrival Time: 500
Process: 7 added at time t = 500
----------MEMORY STATUS---------- at time t = 500
Process :- 7 Segment :- 0 Size :-300 Location :- 0 - 299
Hole Present :- Size :- 100 Location :- 300 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599
Hole Present :- Size :- 300 Location :- 600 - 899
Process :- 4 Segment :- 0 Size :-100 Location :- 900 - 999
Process :- 7 Segment :- 1 Size :-500 Location :- 1000 - 1499
Process :- 6 Segment :- 0 Size :-400 Location :- 1500 - 1899
Hole Present :- Size :- 100 Location :- 1900 - 1999
----------QUEUE STATUS----------
At time t = 600, these are the processes present in Queue:
Process: 8 Arrival Time: 600
----------QUEUE STATUS----------
At time t = 700, these are the processes present in Queue:
Process: 8 Arrival Time: 600
Process: 9 Arrival Time: 700
Process: 7 is completed and removed at time t = 2000
----------MEMORY STATUS---------- at time t = 2000
Hole Present :- Size :- 300 Location :- 0 - 299
Hole Present :- Size :- 100 Location :- 300 - 399
Process :- 2 Segment :- 0 Size :-200 Location :- 400 - 599
Hole Present :- Size :- 300 Location :- 600 - 899
Process :- 4 Segment :- 0 Size :-100 Location :- 900 - 999
Hole Present :- Size :- 500 Location :- 1000 - 1499
Process :- 6 Segment :- 0 Size :-400 Location :- 1500 - 1899
Hole Present :- Size :- 100 Location :- 1900 - 1999
Process: 2 is completed and removed at time t = 2000
----------MEMORY STATUS---------- at time t = 2000
Hole Present :- Size :- 300 Location :- 0 - 299
Hole Present :- Size :- 100 Location :- 300 - 399

Hole Present :- Size :- 200 Location :- 400 - 599
Hole Present :- Size :- 300 Location :- 600 - 899
Process :- 4 Segment :- 0 Size :-100 Location :- 900 - 999
Hole Present :- Size :- 500 Location :- 1000 - 1499
Process :- 6 Segment :- 0 Size :-400 Location :- 1500 - 1899
Hole Present :- Size :- 100 Location :- 1900 - 1999
Process: 4 is completed and removed at time t = 2000
----------MEMORY STATUS---------- at time t = 2000
Hole Present :- Size :- 300 Location :- 0 - 299
Hole Present :- Size :- 100 Location :- 300 - 399
Hole Present :- Size :- 200 Location :- 400 - 599
Hole Present :- Size :- 300 Location :- 600 - 899
Hole Present :- Size :- 100 Location :- 900 - 999
Hole Present :- Size :- 500 Location :- 1000 - 1499
Process :- 6 Segment :- 0 Size :-400 Location :- 1500 - 1899
Hole Present :- Size :- 100 Location :- 1900 - 1999
Process: 6 is completed and removed at time t = 2000
----------MEMORY STATUS---------- at time t = 2000
Hole Present :- Size :- 300 Location :- 0 - 299
Hole Present :- Size :- 100 Location :- 300 - 399
Hole Present :- Size :- 200 Location :- 400 - 599
Hole Present :- Size :- 300 Location :- 600 - 899
Hole Present :- Size :- 100 Location :- 900 - 999
Hole Present :- Size :- 500 Location :- 1000 - 1499
Hole Present :- Size :- 400 Location :- 1500 - 1899
Hole Present :- Size :- 100 Location :- 1900 - 1999
Process: 8 added at time t = 2000
----------MEMORY STATUS---------- at time t = 2000
Process :- 8 Segment :- 0 Size :-200 Location :- 0 - 199
Process :- 8 Segment :- 1 Size :-200 Location :- 200 - 399
Process :- 8 Segment :- 2 Size :-200 Location :- 400 - 599
Hole Present :- Size :- 1400 Location :- 600 - 1999
Process: 9 added at time t = 2000
----------MEMORY STATUS---------- at time t = 2000
Process :- 8 Segment :- 0 Size :-200 Location :- 0 - 199
Process :- 8 Segment :- 1 Size :-200 Location :- 200 - 399
Process :- 8 Segment :- 2 Size :-200 Location :- 400 - 599
Process :- 9 Segment :- 0 Size :-200 Location :- 600 - 799
Process :- 9 Segment :- 1 Size :-200 Location :- 800 - 999
Hole Present :- Size :- 1000 Location :- 1000 - 1999
Process: 8 is completed and removed at time t = 3500
----------MEMORY STATUS---------- at time t = 3500

Hole Present :- Size :- 200 Location :- 0 - 199
Hole Present :- Size :- 200 Location :- 200 - 399
Hole Present :- Size :- 200 Location :- 400 - 599
Process :- 9 Segment :- 0 Size :-200 Location :- 600 - 799
Process :- 9 Segment :- 1 Size :-200 Location :- 800 - 999
Hole Present :- Size :- 1000 Location :- 1000 - 1999
Process: 9 is completed and removed at time t = 3500
----------MEMORY STATUS---------- at time t = 3500
Hole Present :- Size :- 200 Location :- 0 - 199
Hole Present :- Size :- 200 Location :- 200 - 399
Hole Present :- Size :- 200 Location :- 400 - 599
Hole Present :- Size :- 200 Location :- 600 - 799
Hole Present :- Size :- 200 Location :- 800 - 999
Hole Present :- Size :- 1000 Location :- 1000 - 1999
Average turnaround time is: 1533.33