Numerical differentiation Example 2

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Pseudocode of differentiation process

Pseudocode Example 2

```
START
Import libraries
Import data from a file


Assign data to lists
positions = [ p0, p1, p2, ... , pf]
times = [ t0, t1, t2, ... , tf]


Initialize list velocities.
For i=1 to (n-1)
v = (position[i]-position[i-1])/(time[i]-time[i-1])
Append v to the velocities list
Append 0 to velocities list


Initialize list accelerations.
For i=1 to (n-2)
a = (velocities[i]-velocities[i-1])/(time[i]-time[i-1])
Append a to the accelerations  list
Append two 0´s  to accelerations list


Plot graphs of positions vs times, velocities vs times, accelerations vs times


Export data in a new file


END
```

Flowchart of differentiation process