Subject: Re: Can this be vectorized?
Posted by Bert Jagers on Tue, 26 Oct 1999 07:00:00 GMT
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Dear John,

Two solutions in Matlab: one completely vectorized, one partially.
Of course, you could also implement it as a MEX file.

```
F=find([1 diff(I) 1]);
XS=[0 cumsum(X)];
Y=XS(F(2:end))-XS(F(1:(end-1)));
```

There is one major drawback to this implementation, since

> In reality, X consists of about one million elements,

you may loose accuracy when taking the difference of two large
cummulative values. So, I tried to find another solution.

```
F=find([1 diff(I) 1]);
Y=zeros(1,length(F)-1);
for i=1:length(Y),
  Y(i)=sum(X(F(i):(F(i+1)-1)));
end;
```

The memory usage is probably comparable. In both cases there needs to
be space for the matrices I,X,F and [1 diff(I) 1], or else Matlab will
start swapping.

Best regards,

Bert Jagers