The Four Friends

(Difficulty medium)

There are four friends that need to cross a bridge to get home. Due to the age of the bridge, only two people can cross at the same time. To make matters worse, it is night-time and there is only one torch. The torch is always required when crossing the bridge and the torch must be walked back and forth, it cannot be thrown, etc.

Each friend walks at a different speed and a pair must walk together at the rate of the slower person:

- Mary takes 1 minute to cross
- Bill takes 2 minutes to cross
- Carl takes 5 minutes to cross
- Susan takes 10 minutes to cross

In what sequence can they travel to all get across in the quickest time?
Answer:

Mary and Bill cross : 2 minutes
Mary returns : 1 minute
Carl and Susan cross : 10 minutes
Bill returns : 2 minutes
Mary and Bill cross : 2 minutes

Total : 17 minutes