

USMAN INSTITUTE OF TECHNOLOGY

ARBITRAGE



What is Arbitrage?

Arbitrage is the process of exploiting differences in the price of an asset by simultaneously buying and selling it.

EXAMPLE

Suppose an asset, gold, is quoted at Rs 27,000 per 10 gm in the Delhi bullion market and at Rs 27,500 in the Mumbai bullion market. A trader may buy 10 gm of gold in Delhi and sell it in Mumbai, making a profit of Rs 500 (Rs 27,500 - Rs 27,000). However, this trade will be profitable only if the cost of transactions is less than Rs 500 per 10 gm of gold.

Problem

Currency exchange rate to transform one unit of a currency into more than one unit of the same currency

And Other Example

suppose that 1 US Dollar buys 0.5 British pound, 1 British pound buys 10.0 French francs, and 1 French franc buys 0.21 US dollar. Then, by converting currencies, a clever trader can start with 1 US dollar and buy $0.5 * 10.0 * 0.21 = 1.05$ US dollars, making a profit of 5 percent.

Algorithm

```
for each vertex x in V do
  if x is source then
    w(x) = 0
  else
    w(x) = INFINITY
    p(x) = NULL
  end if
end for
for i = 1 to v - 1 do
  for each edge( l , j) in E do
    if w(i) + w(i, j) < w(j) then
      w(j) = w(l ) + w( l , j)
      p(j) = l
    end if
  end for
end for
for each edge(l , j) in E do
  if w(j) > w(i) + w(i, j) then
    end if
```