Programming Test

The Problem

Write a program with a simple UI (in C#, Delphi or Java) that calls a procedure which takes four parameters as follows:

DictionaryFile - the file name of a text file containing four letter words
StartWord - a four letter word (that you can assume is found in the DictionaryFile file)
EndWord - a four letter word (that you can assume is found in the DictionaryFile file)
ResultFile - the file name of a text file that will contain the result

The result is the shortest list of four letter words, starting with *StartWord*, and ending with *EndWord*, with a number of intermediate words that are to be found in the *DictionaryFile* file where each word differs from the previous word by precisely one letter.

For example, if *StartWord* = Spin, *EndWord* = Spot and *DictionaryFile* file contains:

Spin
Spit
Spat
Spot
Span

then *ResultFile* should contain

Spin
Spit
Spot

Two examples of incorrect results:
Spin, Span, Spat, Spot (invalid as it takes 3 changes rather than 2)
Spin, Spon, Spot (invalid as spon is not a word)

Hint: Your solution should deal with the case where the dictionary file contains {ABAA, AAAA, ABZA, ABZZ, and AAZZ} and the start and end words are AAAA and AAZZ respectively.

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Sample Dictionary File

ante
ants
calf
call
calm
clam
diet
dire
earl
edit
emit
erst
fail
fate
feat
feta
ires
irks
item
lair
lame
late
leap
lest
lets
liar
lips
lira
lisp
list
lite
male
mall
mate
matt
meal
meat
mint
mite
mitt
naps
neat
nips
nite
nits
opts
pale
pans

past
pate
pats
peal
peat
pest
pets
pier
pins
pits
plea
post
pots
rail
rant
rate
real
rest
rial
ride
ripe
rise
risk
rite
rite
shin
silt
sire
slip
slit
snap
snip
snit
span
spat
spin
spit
spot
step
stop
tale
tall
tame
tans
tape
taps
tare
tarn
teal
team
tear

tide
tied
tier
tier
tile
time
tine
tins
tint
tips
tire
tire
tops