Natural Language Processing

(a) Define the following terms in morphology:

(i) morpheme

(ii) affix

[4 marks]

(b) In English morphology, ‘y’ maps to ‘ie’ when preceded by a consonant and followed by the affix ‘s’. Give a finite state transducer that implements this spelling rule, explaining the notation that you use. Your transducer should accept the following pairings:
party/party, parties/party’s, partying/party’ing

It should reject:
partys/party’s, toies/toy’s

[12 marks]

(c) The ‘y’ to ‘ie’ mapping also applies when the affix is ‘ed’. Briefly discuss how this might be handled, taking into account that the morphology system should accept partied/party’ed and not partieed/party’ed.

[4 marks]