**Programming Paradigms ADT**

**NAME**

Text Editor – an ADT representing text editing software

**SETS**

T the set of text editing (S x S x S x S)

L the set of loading (S)

N the set of Natural numbers (∀ n.n ∈ Z Λ n ≥ 0)

C the set of Characters (∀ c.c ∈ [a..z])

S the set of Strings (N x C)

H the set of highlighting (S)

**SYNTAX**

create: | → T

destroy: T → |

init: T → T

setFile: T → L

getFile: L → T

move T x C x N → T

concatenate: S x S  → S

highlight: T x C x N → H

cut : T x H → T

copy : T x H → T

paste : T x H → T

remove: T x C x H → T

**SEMANTICS**

∀t.t∈T, ∀b.b∈L, ∀l.l∈S, ∀r.r∈S, ∀h.h∈H

pre-create():: true

post-create(t):: t = (“”, “”, “”, “”)

pre-destroy(t):: true

post-destroy(t):: t = |

pre-init():: true

post-init((\_,\_,\_,\_);t):: t = (“”, ””, ””, ””)

pre-setFile():: t = (“”, ””, ””, ””)

post-setFile(t, b):: b = t

pre-getFile():: true

post-getFile(t, b):: t = b

pre-move(t):: t = (l, ””, r, ””)

post-move(t):: t = (“”, l, r, “”)

pre-concatenate(t, l, r):: t = (l, ””, r, ””)

post-concatenate(t, l, r):: t = (l, r)

pre-highlight(t, l, r):: t = (l, “”, r, “”)

post-highlight(t, h):: t = (“”, “”, “”, h)

pre-cut(t, h):: t = (l, ””, r, h)

post-cut(t, h):: t = (l - h, ””, ””, h)

pre-copy(t, l, r, h):: t = (l, ””, r, h)

post-copy(t, l, r, h):: t = (l, ””, r, h)

pre-paste(t, l, r, h):: t = (l, ””, r, h)

post-paste(t, l, r, h):: t = (l + h, ””, r, h)

pre-remove(t, l, r):: t = (l, ””, r, “”)

post-remove():: t = (l - 1, ””, r, “”)