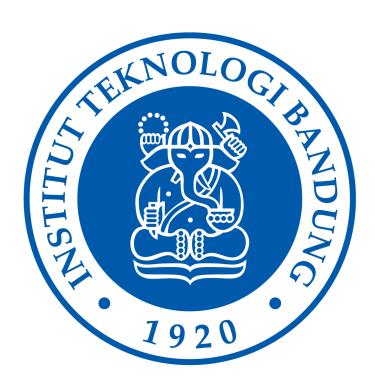
LAPORAN TUGAS BESAR IF2124 TEORI BAHASA FORMAL DAN OTOMATA

Dosen: Judhi Santoso



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Bab I

Teori Dasar

1.1. HTML

HTML (*HyperText Markup Language*) adalah bahasa markup yang digunakan untuk membuat struktur dan tampilan konten web. HTML adalah salah satu bahasa utama yang digunakan dalam pengembangan web dan digunakan untuk menggambarkan bagaimana elemen-elemen konten, seperti teks, gambar, tautan, dan media, akan ditampilkan di browser web. Ini juga bisa mencakup pengorganisasian konten dalam paragraf, daftar (berpoin atau bernomor), atau menggunakan gambar dan tabel data. Dalam HTML, terdapat banyak jenis tag yang berbeda-beda dan memiliki fungsi yang berbeda-beda juga.

Beberapa diantaranya yaitu:

- 1. HTML, merupakan sebuah tag yang wajib ada. HTML merupakan sebuah tag yang selalu berada di posisi paling luar dibandingkan dengan tag lainnya.
- 3. Body, merupakan sebuah tag yang wajib ada dalam sebuah file html dan berfungsi untuk menampung sebagian besar tag dalam html.
- 4. title, merupakan sebuah tag yang hanya boleh berada di dalam head dan berfungsi untuk mendefinisikan judul sebuah dokumen
- 5. link, merupakan sebuah tag yang berfungsi untuk mengarahkan suatu file html dengan file luaran atau ke file html lainnya.
- 6. script, mengaplikasikan suatu *script* pada sebuah laman (umumnya JavaScript)
- 7. h1, h2, h3, h4, h5, h6, berfungsi untuk menuliskan headings pada laman
- 8. p, berfungsi untuk menuliskan sebuah tampilan text atau paragraf pada laman

- 9. br, berfungsi untuk memisahkan sebuah text menjadi 2 posisi secara vertikal
- 10. em , berfungsi untuk memberikan penekanan pada sebuah text
- 11. b, berfungsi untuk menebalkan sebuah text
- 12. abbr , berfungsi untuk mendefinisikan sebuah text sesuai singkatannya
- 13. strong, berfungsi untuk mendefinisikan sebuah text dengan kepentingan yang kuat, biasanya juga ditampilkan dalam text bold
- 14. small, berfungsi untuk mendefinisikan text secara kecil, biasanya seperti *copyrights*
- 15. hr, berfungsi untuk membagi bagian pada laman
- 16. div, merupakan elemen yang berfungsi layaknya kotak dengan ukuran tertentu
- 17. a, berfungsi untuk mengarahkan pengguna ke laman luar
- 18. img, berfungsi untuk menampilkan foto di laman
- 19. button, berfungsi untuk menampilkan tombol yang bisa dihubungkan ke fitur
- 20. form, berfungsi untuk mendapat inputan dari pengguna
- 21. input, umumnya diaplikasikan pada form, menerima input dengan berbagai cara
- 22. table, berfungsi untuk menampilkan tabel pada laman
- 23. tr, berfungsi untuk mendefinisikan baris pada tabel
- 24. td, berfungsi untuk mendefinisikan satuan data *cell* standard
- 25. th, berfungsi untuk mendefinisikan header cell pada HTML

Dalam HTML, Konsep "nested elements" memainkan peran penting dalam mendefinisikan struktur dan tata letak konten dalam halaman web. Ketika sebuah elemen ditempatkan di dalam elemen lain, ini menciptakan hubungan hierarkis yang dapat mempengaruhi bagaimana konten ditampilkan dan diinterpretasikan oleh browser. Misalnya, elemen seperti '<div>' atau '' sering digunakan sebagai kontainer untuk mengelompokkan elemen lain, memungkinkan pengembang untuk mengatur dan memformat sekumpulan elemen secara bersamaan. Praktik ini tidak hanya meningkatkan keterbacaan kode, tetapi

juga memudahkan manajemen layout, terutama dengan penggunaan CSS (Cascading Style Sheets) untuk styling.

Di sisi lain, *void elements* atau elemen kosong, seperti '
br', '<img', dan '<input', tidak memerlukan tag penutup karena mereka secara inheren tidak mengandung konten tambahan. Elemen-elemen ini menyederhanakan markup dan sangat berguna untuk menyisipkan elemen spesifik tanpa memerlukan struktur tambahan. Misalnya, '
br' digunakan untuk memasukkan jeda baris dalam teks, '<img' untuk menyertakan gambar, dan '<input' untuk membuat bidang input dalam formulir. Kedua konsep ini, nested dan void elements, menunjukkan fleksibilitas HTML dalam mengatur konten web dengan berbagai cara.

Mengikuti perkembangan teknologi dan tren desain web, HTML secara teratur diperbarui dengan fitur-fitur baru. Setiap versi baru dari HTML, seperti transisi dari HTML4 ke HTML5, membawa peningkatan dalam hal kemampuan multimedia, integrasi API, dan semantik yang lebih baik. HTML5, misalnya, memperkenalkan elemen seperti '<canvas>' untuk grafik 2D, '<video>' dan '<audio>' untuk media, serta elemen semantik seperti '<article>', '<section>', '<nav>', dan '<footer>' yang membantu dalam mendefinisikan bagian-bagian dari halaman web. Peningkatan ini tidak hanya memperluas kemungkinan apa yang dapat dibuat dalam halaman web, tetapi juga memudahkan mesin pencari dan alat aksesibilitas untuk memahami dan menavigasi konten dengan lebih baik.

Kemampuan untuk menguasai tag dan elemen HTML ini, baik nested maupun void, menjadi kunci untuk pengembang web dalam menciptakan halaman yang tidak hanya terstruktur dengan baik, tapi juga responsif dan aksesibel. Dengan penggunaan HTML yang tepat, halaman web dapat dirancang untuk beradaptasi dengan berbagai perangkat dan ukuran layar, memberikan pengalaman pengguna yang konsisten dan inklusif. Selain itu, aksesibilitas yang baik dari halaman web juga meningkatkan SEO (Search Engine Optimization), memastikan bahwa konten dapat diakses oleh audiens yang lebih luas. Dengan demikian, pemahaman yang mendalam tentang HTML dan perkembangannya merupakan aset berharga dalam dunia pengembangan web yang dinamis.

1.2. Pushdown Automata

Pushdown Automaton (PDA) adalah konsep yang sangat penting dalam dunia teori komputasi, yang merupakan bagian integral dari ilmu komputer teoretis. PDA ini unik karena dilengkapi dengan stack, yang seperti rak buku temporer untuk menyimpan simbol-simbol. Bayangkan stack ini sebagai tumpukan piring; kamu bisa menambahkan piring ke atas tumpukan (push) atau mengambil piring teratas (pop). Ini memungkinkan PDA untuk melakukan segala macam trik keren dalam mengolah data.

Berikut adalah komponen-komponen utama yang membentuk struktur PDA:

- 1. Q, alias Kumpulan Keadaan Terbatas : Ini merupakan himpunan keadaan yang dimiliki oleh PDA, di mana setiap keadaan memiliki peran tertentu dalam proses komputasi.
- 2. ∑, Kumpulan Simbol Input : Himpunan ini terdiri dari simbol-simbol yang digunakan sebagai input dalam PDA. Setiap simbol input ini memicu transisi antar keadaan dalam PDA.
- 3. Γ, Kumpulan Simbol Pushdown: Ini adalah himpunan simbol yang dapat didorong ke dalam atau dikeluarkan dari stack. Simbol-simbol ini berbeda dari simbol input dan memiliki fungsi khusus dalam stack untuk memfasilitasi proses komputasi PDA.
- 4. q0, Keadaan Awal : Keadaan awal PDA merupakan titik permulaan dari setiap proses komputasi. Dari keadaan ini, PDA mulai bereaksi terhadap simbol input dan melakukan transisi ke keadaan selanjutnya.
- 5. Z, Simbol Pushdown Awal: Ini adalah simbol yang secara default terletak di dalam stack saat PDA mulai beroperasi. Simbol ini seringkali berfungsi sebagai penanda dasar stack, membantu dalam proses pengelolaan simbol yang ditambahkan atau dihapus.
- 6. F, Kumpulan Keadaan Akhir : Himpunan ini berisi keadaan-keadaan yang dianggap sebagai akhir dari proses komputasi. Ketika PDA mencapai salah satu dari keadaan ini, dianggap bahwa ia telah menyelesaikan tugas komputasinya.

PDA sangat memainkan peran penting dalam memahami bahasa formal dan automata, terutama dalam bahasa yang bersifat konteks-bebas. Jadi, kalau kamu tertarik dengan dunia algoritma dan cara kerja komputer, memahami PDA itu kayak membuka kotak Pandora. Pemahaman yang mendalam tentang PDA akan membuka wawasan baru dalam studi algoritma dan proses pengolahan data, dan juga memberikan landasan teoritis yang kuat untuk berbagai aplikasi praktis dalam ilmu komputer.

1.3 Pengaplikasian PDA dalam HTML

Penggunaan Pushdown Automata (PDA) dalam analisis dan validasi struktur HTML merupakan contoh aplikasi teori komputasi yang sangat efektif dalam pengembangan web. HTML, sebagai bahasa markup, berbagi kesamaan dengan bahasa konteks-bebas dan dapat dianalisis dengan prinsip-prinsip yang digunakan dalam PDA. Strukturnya yang sering bersarang, di mana satu tag tertanam di dalam tag lain, menciptakan hirarki yang mirip dengan struktur pohon yang ada dalam Context-Free Grammar (CFG). Dalam hal ini, PDA menggunakan stack, yang beroperasi pada prinsip LIFO (Last In, First Out), untuk melacak tag-tag HTML yang dibuka dan belum ditutup.

Proses parsing HTML menggunakan PDA mengikuti beberapa langkah utama. Pertama, pada saat pembukaan tag, seperti ketika sebuah tag `<div>` ditemukan, PDA akan 'push' tag ini ke dalam stack. Ini menandai awal dari sebuah elemen bersarang. Kemudian, pada saat penutupan tag, seperti ketika tag `</div>` ditemukan, PDA akan 'pop' tag dari stack dan memeriksa apakah tag yang di-pop cocok dengan tag penutup yang ditemui. Jika cocok, ini menunjukkan bahwa blok HTML telah selesai secara benar dan proses parsing dapat berlanjut; jika tidak cocok, ini menandakan adanya kesalahan dalam struktur HTML yang perlu diperbaiki.

Selanjutnya, PDA memanfaatkan stack ini untuk melakukan validasi struktur HTML. Validasi ini memastikan bahwa setiap tag pembuka memiliki tag penutup yang sesuai dan bahwa tag-tag tersebut bersarang dengan benar. Aspek ini sangat penting untuk menghindari kesalahan sintaks yang dapat berdampak

negatif pada rendering halaman web. Selain itu, PDA juga mengelola elemen-elemen kosong dan bersarang dalam HTML. Untuk void elements, yang tidak memerlukan tag penutup, PDA hanya mengabaikannya dalam hal manipulasi stack. Sedangkan untuk elemen bersarang, PDA menangani mereka dengan cermat melalui operasi push dan pop untuk memastikan integritas struktural dokumen HTML.

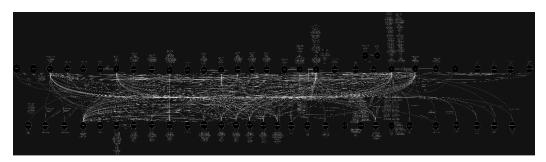
Melalui pendekatan ini, PDA tidak hanya memberikan alat untuk memvalidasi HTML tetapi juga membantu dalam memahami struktur dokumen HTML secara lebih mendalam. Pemahaman tentang bagaimana PDA bekerja dalam konteks HTML menunjukkan bagaimana prinsip-prinsip teori komputasi dapat diterapkan dalam pengembangan web praktis. Ini memastikan bahwa dokumen HTML dikonstruksi dengan benar, yang merupakan faktor kunci untuk pengalaman pengguna yang optimal di internet. Dengan demikian, PDA memberikan dasar teoritis yang kuat bagi siapa saja yang ingin terlibat dalam proses pengembangan dan analisis HTML, memperkaya pemahaman mereka tentang struktur dan standar kode yang efektif.

Bab II

Hasil Pushdown Automata

2.1 Hasil PDA

Rancangan PDA yang telah kita rancang dapat terlihat pada gambar yang terlampir.



Gambar 2.1.1 Hasil Rancangan PDA yang telah digambar

Jika ingin melihat hasil gambar diagram PDA yang lebih jelas, silahkan menuju pranala dari pembuatan diagram di diagrams.net yang terdapat pada Bab 4.

2.2 Finite Set of States (Q)

Dalam pengaplikasian tugas besar ini, beberapa state yang kami buat guna menerapkan PDA seperti berikut.

Q = { START, HEAD, BODY, HEADGLOBAL, INSIDETITLEHEAD, INSIDESCRIPTHEAD, SCRIPTVALIDHEAD, TRANSITIONHEADBODY, TRANSITIONBODYHTML, INDIV, INDIVGLOBAL, INEM, INEMTDINTR, INEMTHINTR, INSIDETITLEBODY, INSIDESCRIPTBODY, INSIDEH1BODY, INSIDEH2BODY, INSIDEH3BODY, INSIDEH4BODY, INSIDEH5BODY, INSIDEH6BODY, INSIDEPBODY, INSIDEBUTTONBODY, INTABLE, INSIDEFORMBODY, TDINTRCONTENT, THINTRCONTENT, INTRINTABLE, INB, INBTDINTR, INBTHINTR, INABBR, INABBRTDINTR, INABBRTHINTR, INSTRONG,

INSTRONGTDINTR, INSTRONGTHINTR, INSMALL, INSMALLTDINTR, INSMALLTHINTR, GOTDIV, INTABLEGLOBAL, INTRINTABLEGLOBAL, GOTTABLE, BODYGLOBAL, SCRIPTVALIDBODY, SCRIPTVALIDINDIV, HREFVALIDBODY, HREFVALIDINDIV, TYPEVALIDBODY, TYPEVALIDINDIV, ACTIONVALIDBODY, ACTIONVALIDINDIV, METHODVALIDBODY, METHODVALIDINDIV, END, FINAL }

2.3 Alphabet (Σ)

Dalam rancangan PDA juga dilakukan perencanaan atau rancangan *input symbol* yang didapatkan sebagai token dari HTML *parser* yang dibuat adalah sebagai berikut.

```
\Sigma = \{ < \text{html}, >, < \text{head}, id, class, style, < \text{title}, < \text{script}, src, < \text{link}, rel, =, X, href, STR, </ \text{title}, < / \text{script}, < / \text{head}, < \text{body}, < / \text{body}, < \text{h1}, < \text{h2}, < \text{h3}, < \text{h4}, < \text{h5}, < \text{h6}, < p, < \text{br}, < / \text{em}, e, < \text{em}, < / \text{b}, < / \text{abbr}, < \text{abbr}, < / \text{strong}, < \text{strong}, < / \text{small}, < \text{hr}, < / \text{a}, < \text{a}, < \text{img}, alt, < / \text{button}, < \text{button}, type, < / \text{form}, action, method, < input, < / \text{table}, < \text{div}, < / \text{div}, < \text{td}, < \text{th}, < / \text{td}, < / \text{th}, < / \text{tr}, < / \text{table}, < / \text{h1}, < / \text{h2}, < / \text{h3}, < / \text{h4}, < / \text{h5}, < / \text{h6}, < / p, <!--, -->, < / \text{html} \}
```

2.4 Stack Symbols (Γ)

Dalam rancangan PDA ini juga dibutuhkan beberapa *stack symbol* yang dimasukkan dan dikeluarkan dari dalam *stack*. Berikut merupakan simbol-simbol yang digunakan dalam perancangan PDA.

 Γ = { Z, OHTML, CHTML, OHEAD, CHEAD, OTITLE, OSCRIPT, OLINK, REL, =, X, HREF, ID, STYLE, CLASS, CTITLE, CSCRIPT, SRC, OBODY, CBODY, DIV, FORM, OH1, OH2, OH3, OH4, OH5, OH6, OP, OBR, CEM, OEM, CH1, CH2, CH3, CH4, CH5, CH6, CP, CA, CBUTTON, CTABLE, CTD, CTH, CB, OB, NB, CABBR, OABBR, CSTRONG, OSTRONG, CSMALL, OSMALL, OHR, OA, OIMG, ALT, OBUTTON, OFORM, OINPUT, OTABLE, ODIV, CDIV, CFORM, OTR, OTD, OTH, CTR, TYPE, ACTION, METHOD, <!--}

2.5 Transition Function (δ)

Untuk melakukan realisasi terhadap rancangan PDA yang telah dilakukan, kami melakukan implementasi dengan membuat *transition function* yang

sekiranya akan dibutuhkan untuk membuat parser HTML dengan rancangan PDA yang telah dibuat. Rancangan *transition function* adalah sebagai berikut.

a. Current State: START

```
\delta(\text{START}, < \text{html}, Z) = \{(\text{START}, \text{OHTMLZ})\}
\delta(\text{START}, >, \text{OHTML}) = \{(\text{HEAD}, \text{CHTMLOHTML})\}
\delta(\text{START}, <!--, Z) = \{(\text{START}, <!--Z)\}
\delta(\text{START}, <!--, \text{CHTML}) = \{(\text{START}, <!--\text{CHTML})\}
\delta(\text{START}, \text{STR}, <!--) = \{(\text{START}, <!--)\}
\delta(\text{START}, --->, <!--) = \{(\text{START}, e)\}
```

b. Current State: HEAD

```
\delta(\text{HEAD}, \leq \text{head}, \text{CHTML}) = \{(\text{HEAD}, \text{OHEADCHTML})\}
\delta(\text{HEAD},>,\text{OHEAD}) = \{(\text{HEAD},\text{CHEADOHEAD})\}
\delta(\text{HEAD}, < \text{title}, \text{CHEAD}) = \{(\text{HEAD}, \text{OTITLECHEAD})\}
\delta(\text{HEAD,id,OTITLE}) = \{(\text{HEADGLOBAL,IDOTITLE})\}
\delta(\text{HEAD,class,OTITLE}) = \{(\text{HEADGLOBAL, CLASSOTITLE})\}
\delta(\text{HEAD},\text{style},\text{OTITLE}) = \{(\text{HEADGLOBAL},\text{STYLEOTITLE})\}
\delta(\text{HEAD}, >, \text{OTITLE}) = \{(\text{INSIDETITLEHEAD}, \text{CTITLEOTITLE})\}
\delta(\text{HEAD}, < \text{script}, \text{CHEAD}) = \{(\text{HEAD}, \text{OSCRIPTCHEAD})\}
\delta(HEAD, id, OSCRIPT) = \{(HEADGLOBAL, IDOSCRIPT)\}
\delta(\text{HEAD,class,OSCRIPT}) = \{(\text{HEADGLOBAL, CLASSOSCRIPT})\}
\delta(HEAD, style, OSCRIPT) = \{(HEADGLOBAL, STYLEOSCRIPT)\}
\delta(HEAD,src,OSCRIPT) = \{(SCRIPTVALIDHEAD,SRCOSCRIPT)\}
\delta(\text{HEAD}, \text{OSCRIPT}) = \{(\text{INSIDESCRIPTHEAD}, \text{CSCRIPTOSCRIPT})\}
\delta(\text{HEAD}, <\text{link}, \text{CHEAD}) = \{(\text{HEAD}, \text{OLINKCHEAD})\}
\delta(\text{HEAD,id,OLINK}) = \{(\text{HEADGLOBAL,IDOLINK})\}
\delta(\text{HEAD,class,OLINK}) = \{(\text{HEADGLOBAL,CLASSOLINK})\}
\delta(HEAD,style,OLINK) = \{(HEADGLOBAL,STYLEOLINK)\}
\delta(\text{HEAD},\text{rel},\text{OLINK}) = \{(\text{HEAD},\text{REL})\}
\delta(\text{HEAD},=,\text{REL}) = \{(\text{HEAD},=)\}
\delta(\text{HEAD}, X, =) = \{(\text{HEAD}, X)\}
```

```
δ(HEAD,>,X) = {(HEAD, e)}
δ(HEAD,href,X) = {(HEAD, HREF)}
δ(HEAD,=,HREF) = {(HEAD, =)}
δ(HEAD,href,OLINK) = {(HEAD, HREFOLINK)}
δ(HEAD,</head,CHEAD) = {(TRANSITIONHEADBODY, e)}
δ(HEAD,<!--,CHTML) = {(HEAD, <!--CHTML)}
δ(HEAD,<!--,CHEAD) = {(HEAD, <!--CHEAD)}
δ(HEAD,STR,<!--) = {(HEAD, <!--)}
δ(HEAD,-->,<!--) = {(HEAD, e)}
```

c. Current State: BODY

```
\delta(BODY,id,OHEAD) = \{(HEADGLOBAL,IDOHEAD)\}
\delta(BODY,class,OHEAD) = \{(HEADGLOBAL, CLASSOHEAD)\}
\delta(BODY, style, OHEAD) = \{(HEADGLOBAL, STYLEOHEAD)\}
\delta(BODY, < body, CHTML) = \{(BODY, OBODYCHTML)\}
\delta(BODY,id,OBODY) = \{(BODYGLOBAL, IDOBODY)\}
\delta(BODY, class, OBODY) = \{(BODYGLOBAL, CLASSOBODY)\}
\delta(BODY, style, OBODY) = \{(BODYGLOBAL, STYLEOBODY)\}
\delta(BODY,>,OBODY) = \{(BODY,CBODYOBODY)\}
\delta(BODY, </body, CBODY) = \{(TRANSITIONBODYHTML, e)\}
\delta(BODY, < title, CBODY) = \{(BODY, OTITLECBODY)\}
\delta(BODY,id,OTITLE) = \{(BODYGLOBAL,IDOTITLE)\}
\delta(BODY, class, OTITLE) = \{(BODYGLOBAL, CLASSOTITLE)\}
\delta(BODY,style,OTITLE) = \{(BODYGLOBAL,STYLEOTITLE)\}
\delta(BODY,>,OTITLE) = \{(INSIDETITLEBODY, CTITLEOTITLE)\}
\delta(BODY, < link, CBODY) = \{(BODY, OLINKCBODY)\}
\delta(BODY,id,OLINK) = \{(BODYGLOBAL,IDOLINK)\}
\delta(BODY,class,OLINK) = \{(BODYGLOBAL, CLASSOLINK)\}
\delta(BODY, style, OLINK) = \{(BODYGLOBAL, STYLEOLINK)\}
\delta(BODY,rel,OLINK) = \{(BODY,REL)\}
\delta(BODY,=,REL) = \{(BODY,=)\}
```

```
\delta(BODY,X,=) = \{(BODY,X)\}
\delta(BODY,>,X) = \{(BODY, e)\}
\delta(BODY,href,X) = \{(BODY,HREF)\}
\delta(BODY,=,HREF) = \{(BODY,=)\}
\delta(BODY,href,OLINK) = \{(BODY,HREFOLINK)\}
\delta(BODY, < script, CBODY) = \{(BODY, OSCRIPTCBODY)\}
\delta(BODY,id,OSCRIPT) = \{(BODYGLOBAL,IDOSCRIPT)\}
\delta(BODY,class,OSCRIPT) = \{(BODYGLOBAL, CLASSOSCRIPT)\}
\delta(BODY, style, OSCRIPT) = \{(BODYGLOBAL, STYLEOSCRIPT)\}
\delta(BODY,src,OSCRIPT) = \{(SCRIPTVALIDBODY,SRCOSCRIPT)\}
\delta(BODY,>,OSCRIPT) = \{(INSIDESCRIPTBODY, CSCRIPTOSCRIPT)\}
\delta(BODY, \leq h1, CBODY) = \{(BODY, OH1CBODY)\}
\delta(BODY,id,OH1) = \{(BODYGLOBAL, IDOH1)\}
\delta(BODY,class,OH1) = \{(BODYGLOBAL, CLASSOH1)\}
\delta(BODY,style,OH1) = \{(BODYGLOBAL, STYLEOH1)\}
\delta(BODY,>,OH1) = \{(INSIDEH1BODY, CH1OH1)\}
\delta(BODY, \leq h2, CBODY) = \{(BODY, OH2CBODY)\}
\delta(BODY,id,OH2) = \{(BODYGLOBAL, IDOH2)\}
\delta(BODY,class,OH2) = \{(BODYGLOBAL, CLASSOH2)\}
\delta(BODY,style,OH2) = \{(BODYGLOBAL, STYLEOH2)\}
\delta(BODY,>,OH2) = \{(INSIDEH2BODY, CH2OH2)\}
\delta(BODY, < h3, CBODY) = \{(BODY, OH3CBODY)\}
\delta(BODY,id,OH3) = \{(BODYGLOBAL,IDOH3)\}
\delta(BODY,class,OH3) = \{(BODYGLOBAL, CLASSOH3)\}
\delta(BODY, style, OH3) = \{(BODYGLOBAL, STYLEOH3)\}
\delta(BODY,>,OH3) = \{(INSIDEH3BODY, CH3OH3)\}
\delta(BODY, < h4, CBODY) = \{(BODY, OH4CBODY)\}
\delta(BODY,id,OH4) = \{(BODYGLOBAL, IDOH4)\}
\delta(BODY,class,OH4) = \{(BODYGLOBAL, CLASSOH4)\}
\delta(BODY, style, OH4) = \{(BODYGLOBAL, STYLEOH4)\}
\delta(BODY,>,OH4) = \{(INSIDEH4BODY, CH4OH4)\}
```

```
\delta(BODY, < h5, CBODY) = \{(BODY, OH5CBODY)\}
\delta(BODY,id,OH5) = \{(BODYGLOBAL, IDOH5)\}
\delta(BODY,class,OH5) = \{(BODYGLOBAL, CLASSOH5)\}
\delta(BODY, style, OH5) = \{(BODYGLOBAL, STYLEOH5)\}
\delta(BODY,>,OH5) = \{(INSIDEH5BODY, CH5OH5)\}
\delta(BODY, < h6, CBODY) = \{(BODY, OH6CBODY)\}
\delta(BODY,id,OH6) = \{(BODYGLOBAL, IDOH6)\}
\delta(BODY,class,OH6) = \{(BODYGLOBAL, CLASSOH6)\}
\delta(BODY, style, OH6) = \{(BODYGLOBAL, STYLEOH6)\}
\delta(BODY,>,OH6) = \{(INSIDEH6BODY, CH6OH6)\}
\delta(BODY, < p, CBODY) = \{(BODY, OPCBODY)\}
\delta(BODY,id,OP) = \{(BODYGLOBAL, IDOP)\}
\delta(BODY,class,OP) = \{(BODYGLOBAL, CLASSOP)\}
\delta(BODY, style, OP) = \{(BODYGLOBAL, STYLEOP)\}
\delta(BODY,>,OP) = \{(INSIDEPBODY, CPOP)\}
\delta(BODY, \langle br, CBODY \rangle) = \{(BODY, OBRCBODY)\}
\delta(BODY,id,OBR) = \{(BODYGLOBAL, IDOBR)\}
\delta(BODY,class,OBR) = \{(BODYGLOBAL, CLASSOBR)\}
\delta(BODY, style, OBR) = \{(BODYGLOBAL, STYLEOBR)\}
\delta(BODY, >, OBR) = \{(BODY, e)\}
\delta(BODY, \leq m, CBODY) = \{(BODY, OEMCBODY)\}
\delta(BODY, >, CEM) = \{(INEM, CEMOEM)\}
\delta(BODY, < b, CBODY) = \{(BODY, OBCBODY)\}
\delta(BODY, >, CB) = \{(INB, CBOB)\}
\delta(BODY, < abbr, CBODY) = \{(BODY, OABBRCBODY)\}
\delta(BODY, >, CABBR) = \{(INABBR, CABBROABBR)\}
\delta(BODY, \leq STRONGCBODY) = \{(BODY, OSTRONGCBODY)\}
\delta(BODY,>,CSTRONG) = \{(INSTRONG, CSTRONGOSTRONG)\}
\delta(BODY, \leq SMALLCBODY) = \{(BODY, OSMALLCBODY)\}
\delta(BODY,>,CSMALL) = \{(INSMALL, CSMALLOSMALL)\}
\delta(BODY, < hr, CBODY) = \{(BODY, OHRCBODY)\}
```

```
\delta(BODY,id,OHR) = \{(BODYGLOBAL,IDOHR)\}
\delta(BODY,class,OHR) = \{(BODYGLOBAL, CLASSOHR)\}
\delta(BODY,style,OHR) = \{(BODYGLOBAL, STYLEOHR)\}
\delta(BODY,>,OHR) = \{(BODY, e)\}
\delta(BODY, < a, CBODY) = \{(BODY, OACBODY)\}
\delta(BODY,id,OA) = \{(BODYGLOBAL,IDOA)\}
\delta(BODY,class,OA) = \{(BODYGLOBAL, CLASSOA)\}
\delta(BODY,style,OA) = \{(BODYGLOBAL, STYLEOA)\}
\delta(BODY,href,OA) = \{(HREFVALIDBODY,HREFOA)\}
\delta(BODY,>,OA) = \{(INSIDEABODY, CAOA)\}
\delta(BODY, \leq img, CBODY) = \{(BODY, OIMGCBODY)\}
\delta(BODY,id,OIMG) = \{(BODYGLOBAL, IDOIMG)\}
\delta(BODY,class,OIMG) = \{(BODYGLOBAL, CLASSOIMG)\}
\delta(BODY,style,OIMG) = \{(BODYGLOBAL, STYLEOIMG)\}
\delta(BODY, src, OIMG) = \{(BODY, SRC)\}\
\delta(BODY,=,SRC) = \{(BODY,=)\}
\delta(BODY,X,=) = \{(BODY,X)\}
\delta(BODY, >, X) = \{(BODY, e)\}
\delta(BODY,alt,X) = \{(BODY,ALT)\}
\delta(BODY,=,ALT) = \{(BODY,=)\}
\delta(BODY,alt,OIMG) = \{(BODY,ALTOIMG)\}
\delta(BODY, < button, CBODY) = \{(BODY, OBUTTONCBODY)\}
\delta(BODY,id,OBUTTON) = \{(BODYGLOBAL,IDOBUTTON)\}
\delta(BODY,class,OBUTTON) = \{(BODYGLOBAL, CLASSOBUTTON)\}
\delta(BODY, style, OBUTTON) = \{(BODYGLOBAL, STYLEOBUTTON)\}
\delta(BODY, type, OBUTTON) = \{(TYPEVALIDBODY, TYPEOBUTTON)\}
\delta(BODY, >, OBUTTON) = \{(INSIDEBUTTONBODY, <
CBUTTONOBUTTON)}
\delta(BODY, < form, CBODY) = \{(BODY, OFORMCBODY)\}
\delta(BODY,id,OFORM) = \{(BODYGLOBAL,IDOFORM)\}
\delta(BODY, class, OFORM) = \{(BODYGLOBAL, CLASSOFORM)\}
```

```
\delta(BODY,style,OFORM) = \{(BODYGLOBAL,STYLEOFORM)\}
\delta(BODY,action,OFORM) = \{(ACTIONVALIDBODY,
ACTIONOFORM)}
\delta(BODY, method, OFORM) = \{(METHODVALIDBODY, 
METHODOFORM)}
\delta(BODY,>,OFORM) = \{(INDIV, FORM)\}
\delta(BODY, \leq IDV, OINPUTCBODY) = \{(BODY, OINPUTCBODY)\}
\delta(BODY,id,OINPUT) = \{(BODYGLOBAL,IDOINPUT)\}
\delta(BODY, class, OINPUT) = \{(BODYGLOBAL, CLASSOINPUT)\}
\delta(BODY, style, OINPUT) = \{(BODYGLOBAL, STYLEOINPUT)\}
\delta(BODY, type, OINPUT) = \{(TYPEVALIDBODY, TYPEOINPUT)\}
\delta(BODY,>,OINPUT) = \{(BODY, e)\}
\delta(BODY,src,OIMG) = \{(BODY,SRC)\}
\delta(BODY,=,SRC) = \{(BODY,=)\}
\delta(BODY,X,=) = \{(BODY,X)\}
\delta(BODY, >, X) = \{(BODY, e)\}
\delta(BODY,alt,X) = \{(BODY,ALT)\}
\delta(BODY,=,ALT) = \{(BODY,=)\}
\delta(BODY,alt,OIMG) = \{(BODY,ALTOIMG)\}
\delta(BODY, \leq table, CBODY) = \{(BODY, OTABLECBODY)\}
\delta(BODY,id,OINPUT) = \{(BODYGLOBAL,IDOINPUT)\}
\delta(BODY, class, OINPUT) = \{(BODYGLOBAL, CLASSOINPUT)\}
\delta(BODY, style, OINPUT) = \{(BODYGLOBAL, STYLEOINPUT)\}
\delta(BODY,>,OTABLE) = \{(INTABLE, CTABLEOTABLE)\}
\delta(BODY, < div, CBODY) = \{(BODY, ODIVCBODY)\}
\delta(BODY,id,ODIV) = \{(BODYGLOBAL, IDODIV)\}
\delta(BODY,class,ODIV) = \{(BODYGLOBAL, CLASSODIV)\}
\delta(BODY, style, ODIV) = \{(BODYGLOBAL, STYLEODIV)\}
\delta(BODY,>,ODIV) = \{(INDIV, DIV)\}
\delta(BODY, <!--, CHTML) = \{(BODY, <!--CHTML)\}
\delta(BODY, <!--, CBODY) = \{(BODY, <!--CBODY)\}
```

```
\delta(BODY,STR,<!--) = \{(BODY,<!--)\}
\delta(BODY,-->,<!--) = \{(BODY,e)\}
\delta(BODY,>,OEM) = \{(INEM,CEMOEM)\}
\delta(BODY,>,OB) = \{(INB,CBOB)\}
\delta(BODY,>,OABBR) = \{(INABBR,CABBROABBR)\}
\delta(BODY,>,OSTRONG) = \{(INSTRONG,CSTRONGOSTRONG)\}
\delta(BODY,>,OSMALL) = \{(INSMALL,CSMALLOSMALL)\}
```

d. Current State: HEADGLOBAL

```
\delta(\text{HEADGLOBAL},=,\text{ID}) = \{(\text{HEADGLOBAL},=)\}

\delta(\text{HEADGLOBAL},=,\text{STYLE}) = \{(\text{HEADGLOBAL},=)\}

\delta(\text{HEADGLOBAL},=,\text{CLASS}) = \{(\text{HEADGLOBAL},=)\}

\delta(\text{HEADGLOBAL},X,=) = \{(\text{HEAD},e)\}
```

e. Current State: INSIDETITLEHEAD

```
\delta(\text{INSIDETITLEHEAD}, \text{STR,CTITLE}) = \{(\text{INSIDETITLEHEAD}, \text{CTITLE})\}
\delta(\text{INSIDETITLEHEAD}, </ \text{title}, \text{CTITLE}) = \{(\text{INSIDETITLEHEAD}, \text{e})\}
\delta(\text{INSIDETITLEHEAD}, >, \text{OTITLE}) = \{(\text{HEAD}, \text{e})\}
\delta(\text{INSIDETITLEHEAD}, <!--, \text{CTITLE}) = \{(\text{INSIDETITLEHEAD}, <!--)\}
\delta(\text{INSIDETITLEHEAD}, \text{STR}, <!--) = \{(\text{INSIDETITLEHEAD}, <!--)\}
\delta(\text{INSIDETITLEHEAD}, --->, <!--) = \{(\text{INSIDETITLEHEAD}, \text{e})\}
```

f. Current State: INSIDESCRIPTHEAD

```
δ(INSIDESCRIPTHEAD,STR,CSCRIPT) = {(INSIDESCRIPTHEAD, CSCRIPT)}
δ(INSIDESCRIPTHEAD,</script,CSCRIPT) = {(INSIDESCRIPTHEAD, e)}
δ(INSIDESCRIPTHEAD,>,OSCRIPT) = {(HEAD, e)}
```

```
δ(INSIDESCRIPTHEAD,<!--,CSCRIPT) = {(INSIDESCRIPTHEAD, <!--CSCRIPT)}
δ(INSIDESCRIPTHEAD,STR,<!--) = {(INSIDESCRIPTHEAD, <!--)}
δ(INSIDESCRIPTHEAD,-->,<!--) = {(INSIDESCRIPTHEAD, e)}
```

g. Current State: SCRIPTVALIDHEAD

```
\delta(\text{SCRIPTVALIDHEAD},=,\text{SRC}) = \{(\text{SCRIPTVALIDHEAD},=)\}
\delta(\text{SCRIPTVALIDHEAD},X,=) = \{(\text{HEAD},e)\}
```

h. Current State: TRANSITIONHEADBODY

 $\delta(TRANSITIONHEADBODY,>,OHEAD) = \{(BODY, e)\}$

i. Current State: TRANSITIONBODYHTML

 $\delta(TRANSITIONBODYHTML,>,OBODY) = \{(END, e)\}$

j. Current State: INDIV

```
δ(INDIV,<link,DIV) = {(INDIV, OLINKDIV)}
δ(INDIV,<link,FORM) = {(INDIV, OLINKFORM)}
δ(INDIV,id,OLINK) = {(INDIVGLOBAL, IDOLINK)}
δ(INDIV,class,OLINK) = {(INDIVGLOBAL, CLASSOLINK)}
δ(INDIV,style,OLINK) = {(INDIVGLOBAL, STYLEOLINK)}
δ(INDIV,rel,OLINK) = {(INDIV, REL)}
δ(INDIV,=,REL) = {(INDIV, =)}
δ(INDIV,X,=) = {(INDIV, X)}
δ(INDIV,href,X) = {(INDIV, HREF)}
δ(INDIV,+REF) = {(INDIV, =)}
δ(INDIV,+REF) = {(INDIV, EFOLINK)}
δ(INDIV,+REF) = {(INDIV, OSCRIPTDIV)}
δ(INDIV,<script,DIV) = {(INDIV, OCSRIPTFORM)}
δ(INDIV,id,OSCRIPT) = {(INDIVGLOBAL, CLASSOSCRIPT)}</pre>
```

```
\delta(INDIV,style,OSCRIPT) = \{(INDIVGLOBAL, STYLEOSCRIPT)\}
\delta(INDIV,src,OSCRIPT) = \{(SCRIPTVALIDINDIV, SRCOSCRIPT)\}
\delta(INDIV,>,OSCRIPT) = \{(INSIDESCRIPTBODY, CSCRIPTOSCRIPT)\}
\delta(INDIV, < h1, DIV) = \{(INDIV, OH1DIV)\}
\delta(INDIV, < h1, FORM) = \{(INDIV, OH1FORM)\}
\delta(INDIV,id,OH1) = \{(INDIVGLOBAL,IDOH1)\}
\delta(INDIV,class,OH1) = \{(INDIVGLOBAL, CLASSOH1)\}
\delta(INDIV,style,OH1) = \{(INDIVGLOBAL, STYLEOH1)\}
\delta(INDIV,>,OH1) = \{(INSIDEH1BODY, CH1OH1)\}
\delta(INDIV, < h2, DIV) = \{(INDIV, OH2DIV)\}
\delta(INDIV, < h2, FORM) = \{(INDIV, OH2FORM)\}
\delta(INDIV,id,OH2) = \{(INDIVGLOBAL, IDOH2)\}
\delta(INDIV,class,OH2) = \{(INDIVGLOBAL, CLASSOH2)\}
\delta(INDIV,style,OH2) = \{(INDIVGLOBAL, STYLEOH2)\}
\delta(INDIV,>,OH2) = \{(INSIDEH2BODY, CH2OH2)\}
\delta(INDIV, < h3, DIV) = \{(INDIV, OH3DIV)\}
\delta(INDIV, < h3, FORM) = \{(INDIV, OH3FORM)\}
\delta(INDIV,id,OH3) = \{(INDIVGLOBAL, IDOH3)\}
\delta(INDIV,class,OH3) = \{(INDIVGLOBAL, CLASSOH3)\}
\delta(INDIV,style,OH3) = \{(INDIVGLOBAL, STYLEOH3)\}
\delta(INDIV,>,OH3) = \{(INSIDEH3BODY, CH3OH3)\}
\delta(INDIV, < h4, DIV) = \{(INDIV, OH4DIV)\}
\delta(INDIV, < h4, FORM) = \{(INDIV, OH4FORM)\}
\delta(INDIV,id,OH4) = \{(INDIVGLOBAL, IDOH4)\}
\delta(INDIV,class,OH4) = \{(INDIVGLOBAL, CLASSOH4)\}
\delta(INDIV,style,OH4) = \{(INDIVGLOBAL, STYLEOH4)\}
\delta(INDIV,>,OH4) = \{(INSIDEH4BODY, CH4OH4)\}
\delta(INDIV, < h5, DIV) = \{(INDIV, OH5DIV)\}
\delta(INDIV, < h5, FORM) = \{(INDIV, OH5FORM)\}
\delta(INDIV,id,OH5) = \{(INDIVGLOBAL, IDOH5)\}
\delta(INDIV,class,OH5) = \{(INDIVGLOBAL, CLASSOH5)\}
```

```
\delta(INDIV, style, OH5) = \{(INDIVGLOBAL, STYLEOH5)\}
\delta(INDIV,>,OH5) = \{(INSIDEH5BODY, CH5OH5)\}
\delta(INDIV, < h6, DIV) = \{(INDIV, OH6DIV)\}
\delta(INDIV, < h6, FORM) = \{(INDIV, OH6FORM)\}
\delta(INDIV,id,OH6) = \{(INDIVGLOBAL, IDOH6)\}
\delta(INDIV,class,OH6) = \{(INDIVGLOBAL, CLASSOH6)\}
\delta(INDIV,style,OH5) = \{(INDIVGLOBAL, STYLEOH6)\}
\delta(INDIV,>,OH6) = \{(INSIDEH6BODY, CH6OH6)\}
\delta(INDIV, \langle p, DIV \rangle) = \{(INDIV, OPDIV)\}
\delta(INDIV, < p, FORM) = \{(INDIV, OPFORM)\}
\delta(INDIV,id,OP) = \{(INDIVGLOBAL,IDOP)\}
\delta(INDIV,class,OP) = \{(INDIVGLOBAL, CLASSOP)\}
\delta(INDIV,style,OH5) = \{(INDIVGLOBAL,STYLEOP)\}
\delta(INDIV,>,OP) = \{(INSIDEPBODY, CPOP)\}
\delta(INDIV, < br, DIV) = \{(INDIV, OBRDIV)\}
\delta(INDIV, < br, FORM) = \{(INDIV, OBRFORM)\}
\delta(INDIV,id,OBR) = \{(INDIVGLOBAL, IDOBR)\}
\delta(INDIV,class,OBR) = \{(INDIVGLOBAL, CLASSOBR)\}
\delta(INDIV,style,OBR) = \{(INDIVGLOBAL, STYLEOBR)\}
\delta(INDIV,>,OBR) = \{(INDIV, e)\}
\delta(INDIV, \leq m, DIV) = \{(INDIV, OEMDIV)\}
\delta(INDIV, \leq m, FORM) = \{(INDIV, OEMFORM)\}
\delta(INDIV,>,CEM) = \{(INEM, CEMOEM)\}
\delta(INDIV, < b, DIV) = \{(INDIV, OBDIV)\}
\delta(INDIV, < b, FORM) = \{(INDIV, OBFORM)\}
\delta(INDIV,>,CB) = \{(INB, CBDIV)\}
\delta(INDIV, <abbr,DIV) = \{(INDIV, OABBRDIV)\}
\delta(INDIV, <abbr, FORM) = \{(INDIV, OABBRFORM)\}
\delta(INDIV,>,CABBR) = \{(INABBR, CABBRDIV)\}
\delta(INDIV, < strong, DIV) = \{(INDIV, OSTRONGDIV)\}
\delta(INDIV, < strong, FORM) = \{(INDIV, OSTRONGFORM)\}
```

```
\delta(INDIV,>,CSTRONG) = \{(INSTRONG, CSTRONGDIV)\}
\delta(INDIV, \leq small, DIV) = \{(INDIV, OSMALLDIV)\}
\delta(INDIV,>,CSMALL) = \{(INSMALL, CSMALLDIV)\}
\delta(INDIV, \langle hr, DIV \rangle) = \{(INDIV, OHRDIV)\}
\delta(INDIV, < hr, FORM) = \{(INDIV, OHRFORM)\}
\delta(INDIV,id,OHR) = \{(INDIVGLOBAL,IDOHR)\}
\delta(INDIV,class,OHR) = \{(INDIVGLOBAL, CLASSOHR)\}
\delta(INDIV,style,OHR) = \{(INDIVGLOBAL, STYLEOHR)\}
\delta(INDIV,>,OHR) = \{(INDIV, e)\}
\delta(INDIV, < a,DIV) = \{(INDIV, OADIV)\}
\delta(INDIV, < a, FORM) = \{(INDIV, OAFORM)\}
\delta(INDIV,id,OA) = \{(INDIVGLOBAL,IDOA)\}
\delta(INDIV,class,OA) = \{(INDIVGLOBAL, CLASSOA)\}
\delta(INDIV,style,OA) = \{(INDIVGLOBAL, STYLEOA)\}
\delta(INDIV,href,OA) = \{(HREFVALIDINDIV, HREFOA)\}
\delta(INDIV,>,OA) = \{(INSIDEABODY, CAOA)\}
\delta(INDIV, \leq img, DIV) = \{(INDIV, OIMGDIV)\}
\delta(INDIV, \leq img, FORM) = \{(INDIV, OIMGFORM)\}
\delta(INDIV,id,OIMG) = \{(INDIVGLOBAL, IDOIMG)\}
\delta(INDIV,class,OIMG) = \{(INDIVGLOBAL, CLASSOIMG)\}
\delta(INDIV,style,OIMG) = \{(INDIVGLOBAL, STYLEOIMG)\}
\delta(INDIV, src, OIMG) = \{(INDIV, SRC)\}
\delta(INDIV = SRC) = \{(INDIV = )\}
\delta(INDIV,X,=) = \{(INDIV,X)\}
\delta(INDIV,>,X) = \{(INDIV, e)\}
\delta(INDIV,alt,X) = \{(INDIV,ALT)\}
\delta(INDIV_{,=,}ALT) = \{(INDIV_{,=)}\}
\delta(INDIV,alt,OIMG) = \{(INDIV,ALTOIMG)\}
\delta(INDIV, < button, DIV) = \{(INDIV, OBUTTONDIV)\}
\delta(INDIV, < button, FORM) = \{(INDIV, OBUTTONFORM)\}
\delta(INDIV,id,OBUTTON) = \{(INDIVGLOBAL,IDOBUTTON)\}
```

```
\delta(INDIV,class,OBUTTON) = \{(INDIVGLOBAL, CLASSOBUTTON)\}
\delta(INDIV,style,OBUTTON) = \{(INDIVGLOBAL, STYLEOBUTTON)\}
\delta(INDIV,type,OBUTTON) = \{(TYPEVALIDINDIV, TYPEOBUTTON)\}
\delta(INDIV,>,OBUTTON) = \{(INSIDEBUTTONBODY,
CBUTTONOBUTTON)}
\delta(INDIV, </form, FORM) = \{(INDIV, CFORM)\}
\delta(INDIV, < form, DIV) = \{(INDIV, OFORMDIV)\}
\delta(INDIV, < form, FORM) = \{(INDIV, OFORMFORM)\}
\delta(INDIV,id,OFORM) = \{(INDIVGLOBAL,IDOFORM)\}
\delta(INDIV,class,OFORM) = \{(INDIVGLOBAL, CLASSOFORM)\}
\delta(INDIV,style,OFORM) = \{(INDIVGLOBAL,STYLEOFORM)\}
\delta(INDIV,action,OFORM) = \{(ACTIONVALIDINDIV,
ACTIONOFORM)}
\delta(INDIV,method,OFORM) = \{(METHODVALIDINDIV,
METHODOFORM)}
\delta(INDIV,>,OFORM) = \{(INDIV, FORM)\}
\delta(INDIV, \leq input, DIV) = \{(INDIV, OINPUTDIV)\}
\delta(INDIV, \leq INDIV, OINPUTFORM)
\delta(INDIV,id,OINPUT) = \{(INDIVGLOBAL,IDOINPUT)\}
\delta(INDIV,class,OINPUT) = \{(INDIVGLOBAL, CLASSOINPUT)\}
\delta(INDIV,style,OINPUT) = \{(INDIVGLOBAL, STYLEOINPUT)\}
\delta(INDIV,type,OINPUT) = \{(TYPEVALIDINDIV, TYPEOINPUT)\}
\delta(INDIV,>,OINPUT) = \{(INDIV, e)\}
\delta(INDIV,src,OIMG) = \{(INDIV,SRC)\}
\delta(INDIV,=,SRC) = \{(INDIV,=)\}
\delta(INDIV,X,=) = \{(INDIV,X)\}
\delta(INDIV,>,X) = \{(INDIV, e)\}
\delta(INDIV,alt,X) = \{(INDIV,ALT)\}
\delta(INDIV,=,ALT) = \{(INDIV,=)\}
\delta(INDIV,alt,OIMG) = \{(INDIV,ALTOIMG)\}
\delta(INDIV, < table, DIV) = \{(INDIV, OTABLEDIV)\}
```

```
\delta(INDIV, < table, FORM) = \{(INDIV, OTABLEFORM)\}
\delta(INDIV,id,OINPUT) = \{(INDIVGLOBAL,IDOINPUT)\}
\delta(INDIV,class,OINPUT) = \{(INDIVGLOBAL, CLASSOINPUT)\}
\delta(INDIV,style,OINPUT) = \{(INDIVGLOBAL, STYLEOINPUT)\}
\delta(INDIV,>,OTABLE) = \{(INTABLE, CTABLEOTABLE)\}
\delta(INDIV,STR,DIV) = \{(INDIV,DIV)\}
\delta(INDIV, </div, DIV) = \{(INDIV, CDIV)\}
\delta(INDIV,e,DIV) = \{(INDIV,DIV)\}
\delta(INDIV, \leq div, DIV) = \{(INDIV, DIVDIV)\}
\delta(INDIV, \leq div, FORM) = \{(INDIV, DIVFORM)\}
\delta(INDIV,id,DIV) = \{(INDIVGLOBAL, IDDIV)\}
\delta(INDIV,class,DIV) = \{(INDIVGLOBAL, CLASSDIV)\}
\delta(INDIV,style,DIV) = \{(INDIVGLOBAL, STYLEDIV)\}
\delta(INDIV, < div, FORM) = \{(INDIV, DIVFORM)\}
\delta(INDIV,>,DIV) = \{(INDIV,DIV)\}
\delta(INDIV,>,CDIV) = \{(GOTDIV, e)\}
\delta(INDIV,>,CFORM) = \{(GOTDIV, e)\}
\delta(INDIV,>,OEM) = \{(INEM, CEMOEM)\}
\delta(INDIV,>,OABBR) = \{(INABBR, CABBROABBR)\}
\delta(INDIV,>,OB) = \{(INB, CBOB)\}
\delta(INDIV,>,OSTRONG) = \{(INSTRONG, CSTRONGOSTRONG)\}
\delta(INDIV,>,OSMALL) = \{(INSMALL, CSMALLOSMALL)\}
\delta(INDIV, < link, CBODY) = \{(INDIV, OLINKCBODY)\}
\delta(INDIV,id,OLINK) = \{(BODYGLOBAL, IDOLINK)\}
\delta(INDIV,class,OLINK) = \{(BODYGLOBAL, CLASSOLINK)\}
\delta(INDIV,style,OLINK) = \{(BODYGLOBAL, STYLEOLINK)\}
\delta(INDIV,rel,OLINK) = \{(INDIV, REL)\}
\delta(INDIV,=,REL) = \{(INDIV,=)\}
\delta(INDIV,X,=) = \{(INDIV,X)\}
\delta(INDIV,>,X) = \{(INDIV, e)\}
\delta(INDIV,href,X) = \{(INDIV,HREF)\}
```

```
δ(INDIV,=,HREF) = {(INDIV, =)}
δ(INDIV,href,OLINK) = {(INDIV, HREFOLINK)}
δ(INDIV,<script,CBODY) = {(INDIV, OSCRIPTCBODY)}
δ(INDIV,id,OSCRIPT) = {(INDIVGLOBAL, IDOSCRIPT)}
δ(INDIV,class,OSCRIPT) = {(INDIVGLOBAL, CLASSOSCRIPT)}
δ(INDIV,style,OSCRIPT) = {(INDIVGLOBAL, STYLEOSCRIPT)}
δ(INDIV,src,OSCRIPT) = {(SCRIPTVALIDBODY, SRCOSCRIPT)}
δ(INDIV,>,OSCRIPT) = {(INSIDESCRIPTBODY, CSCRIPTOSCRIPT)}
δ(INDIV,<!--,DIV) = {(INDIV, <!--DIV)}
δ(INDIV,<!--,FORM) = {(INDIV, <!--FORM)}
δ(INDIV,<!--,CDIV) = {(INDIV, <!--CDIV)}
δ(INDIV,<---,CDIV) = {(INDIV, <!--CDIV)}
δ(INDIV,---,CDIV) = {(INDIV, <!--CDIV)}
```

k. Current State: INDIVGLOBAL

```
\delta(INDIVGLOBAL,=,ID) = {(INDIVGLOBAL, =)}

\delta(INDIVGLOBAL,=,CLASS) = {(INDIVGLOBAL, =)}

\delta(INDIVGLOBAL,=,STYLE) = {(INDIVGLOBAL, =)}

\delta(INDIVGLOBAL,X,=) = {(INDIV, e)}
```

l. Current State: INEM

```
\delta(\text{INEM,STR,CEM}) = \{(\text{INEM, CEM})\}
\delta(\text{INEM,</em,CEM}) = \{(\text{INEM, e})\}
\delta(\text{INEM,>,OEM}) = \{(\text{INEM, e})\}
\delta(\text{INEM,e,CTITLE}) = \{(\text{INSIDETITLEBODY, CTITLE})\}
\delta(\text{INEM,e,CSCRIPT}) = \{(\text{INSIDESCRIPTBODY, CSCRIPT})\}
\delta(\text{INEM,e,CH1}) = \{(\text{INSIDEH1BODY, CH1})\}
\delta(\text{INEM,e,CH2}) = \{(\text{INSIDEH2BODY, CH2})\}
\delta(\text{INEM,e,CH3}) = \{(\text{INSIDEH3BODY, CH3})\}
\delta(\text{INEM,e,CH4}) = \{(\text{INSIDEH4BODY, CH4})\}
\delta(\text{INEM,e,CH5}) = \{(\text{INSIDEH5BODY, CH5})\}
```

```
\delta(INEM,e,CH6) = \{(INSIDEH6BODY,CH6)\}
   \delta(INEM,e,CP) = \{(INSIDEPBODY,CP)\}
   \delta(INEM,e,DIV) = \{(INDIV,DIV)\}
   \delta(INEM,e,CA) = \{(INSIDEABODY,CA)\}
   \delta(INEM,e,CBUTTON) = \{(INSIDEBUTTONBODY,CBUTTON)\}
   \delta(INEM,e,CTABLE) = \{(INTABLE,CTABLE)\}
   \delta(INEM,e,CBODY) = \{(BODY,CBODY)\}
   \delta(INEM, <!--,CEM) = \{(INEM, <!--CEM)\}
   \delta(INEM,STR,<!--) = \{(INEM,<!--)\}
   \delta(INEM, -->, <!--) = \{(INEM, e)\}
m. Current State: INEMTDINTR
```

```
\delta(INEMTDINTR,STR,CEM) = \{(INEM,CEM)\}
\delta(INEMTDINTR, < /em, CEM) = \{(INEM, e)\}
\delta(INEMTDINTR, >, OEM) = \{(INEM, e)\}
\delta(INEMTDINTR, <!--,CEM) = \{(INEMTDINTR, <!--CEM)\}
```

n. Current State: INEMTHINTR

```
\delta(INEMTHINTR,STR,CEM) = \{(INEM,CEM)\}
\delta(INEMTHINTR, < /em, CEM) = \{(INEM, e)\}
\delta(INEMTHINTR, >, OEM) = \{(INEM, e)\}
\delta(INEMTHINTR, <!--,CEM) = \{(INEMTDINTR, <!--CEM)\}
```

o. Current State: INSIDETITLEBODY

```
\delta(INSIDETITLEBODY, <em, CTITLE) = {(INSIDETITLEBODY,
OEMCTITLE)}
\delta(INSIDETITLEBODY, \langle b, CTITLE \rangle = \{(INSIDETITLEBODY, b, CTITLE) \}
OBCTITLE)}
\delta(INSIDETITLEBODY, <abbr, CTITLE) = {(INSIDETITLEBODY,
OABBRCTITLE)}
```

```
δ(INSIDETITLEBODY, <strong, CTITLE) = {(INSIDETITLEBODY,
   OSTRONGCTITLE)}
   \delta(INSIDETITLEBODY, < small, CTITLE) = {(INSIDETITLEBODY,
   OSMALLCTITLE)}
   \delta(INSIDETITLEBODY,STR,CTITLE) = {(INSIDETITLEBODY,
   CTITLE)}
   δ(INSIDETITLEBODY,</title,CTITLE) = {(INSIDETITLEBODY, e)}
   \delta(INSIDETITLEBODY,>,OTITLE) = \{(BODY, e)\}
   \delta(INSIDETITLEBODY,>,OEM) = \{(INEM, CEMOEM)\}
   \delta(INSIDETITLEBODY,>,OSTRONG) = {(INSTRONG,
   CSTRONGOSTRONG)}
   \delta(INSIDETITLEBODY,>,OSMALL) = \{(INSMALL,
   CSMALLOSMALL)}
   \delta(INSIDETITLEBODY, >, OABBR) = \{(INABBR, CABBROABBR)\}
   \delta(INSIDETITLEBODY,>,OB) = {(INB, CBOB)}
p. Current State: INSIDESCRIPTBODY
   \delta(INSIDESCRIPTBODY, <em, CSCRIPT) = {(INSIDESCRIPTBODY,
   OEMCSCRIPT)}
   δ(INSIDESCRIPTBODY, <b, CSCRIPT) = {(INSIDESCRIPTBODY,
   OBCSCRIPT)}
   \delta(INSIDESCRIPTBODY, <abbr, CSCRIPT) = {(INSIDESCRIPTBODY,
   OABBRCSCRIPT)}
   \delta(INSIDESCRIPTBODY, < strong, CSCRIPT) = {(INSIDESCRIPTBODY,
   OSTRONGCSCRIPT)}
   δ(INSIDESCRIPTBODY, < small, CSCRIPT) = {(INSIDESCRIPTBODY,
   OSMALLCSCRIPT)}
   \delta(INSIDESCRIPTBODY,STR,CSCRIPT) = {(INSIDESCRIPTBODY,
   CSCRIPT)}
   \delta(INSIDESCRIPTBODY, </script, CSCRIPT) = {(INSIDESCRIPTBODY,
   e)}
```

```
\delta(INSIDESCRIPTBODY,>,OSCRIPT) = {(INSIDESCRIPTBODY, e)}
   \delta(INSIDESCRIPTBODY,e,DIV) = {(INDIV, DIV)}
   \delta(INSIDESCRIPTBODY,e,CBODY) = {(BODY, CBODY)}
   \delta(INSIDESCRIPTBODY, e, FORM) = \{(INDIV, FORM)\}
   \delta(INSIDESCRIPTBODY,>,OEM) = \{(INEM, CEMOEM)\}
   \delta(INSIDESCRIPTBODY,>,OSTRONG) = {(INSTRONG,
   CSTRONGOSTRONG)}
   \delta(INSIDESCRIPTBODY,>,OSMALL) = {(INSMALL,
   CSMALLOSMALL)}
   \delta(INSIDESCRIPTBODY,>,OABBR) = {(INABBR, CABBROABBR)}
   \delta(INSIDESCRIPTBODY,>,OB) = {(INB, CBOB)}
   \delta(INSIDESCRIPTBODY, <!--, CSCRIPT) = \{(INSIDESCRIPTBODY, <!--, CSCRIPT)\}
   <!--CSCRIPT)}
   δ(INSIDESCRIPTBODY,STR,<!--) = {(INSIDESCRIPTBODY, <!--)}
   \delta(INSIDESCRIPTBODY, -->, <!--) = \{(INSIDESCRIPTBODY, e)\}
q. Current State: INSIDEH1BODY
   \delta(INSIDEH1BODY, <em, CH1) = {(INSIDEH1BODY, OEMCH1)}
   \delta(INSIDEH1BODY, \langle b, CH1 \rangle = \{ (INSIDEH1BODY, OBCH1) \}
   \delta(INSIDEH1BODY, <abbr, CH1) = {(INSIDEH1BODY, OABBRCH1)}
   \delta(INSIDEH1BODY, < strong, CH1) = {(INSIDEH1BODY,
   OSTRONGCH1)}
   δ(INSIDEH1BODY, <small, CH1) = {(INSIDEH1BODY, OSMALLCH1)}
   \delta(INSIDEH1BODY,STR,CH1) = {(INSIDEH1BODY, CH1)}
   \delta(INSIDEH1BODY,</h1,CH1) = {(INSIDEH1BODY, e)}
   \delta(INSIDEH1BODY,>,OH1) = \{(INSIDEH1BODY, e)\}
   \delta(INSIDEH1BODY,e,DIV) = {(INDIV, DIV)}
   \delta(INSIDEH1BODY,e,FORM) = {(INDIV, FORM)}
   \delta(INSIDEH1BODY,e,CBODY) = {(BODY, CBODY)}
   \delta(INSIDEH1BODY,>,OEM) = \{(INEM, CEMOEM)\}
```

```
\delta(INSIDEH1BODY,>,OSTRONG) = {(INSTRONG,
   CSTRONGOSTRONG)}
   \delta(INSIDEH1BODY,>,OSMALL) = {(INSMALL, CSMALLOSMALL)}
   \delta(INSIDEH1BODY,>,OABBR) = {(INABBR, CABBROABBR)}
   \delta(INSIDEH1BODY,>,OB) = {(INB, CBOB)}
   \delta(INSIDEH1BODY, <!--,CH1) = \{(INSIDEH1BODY, <!--CH1)\}
   \delta(INSIDEH1BODY,STR,<!--) = \{(INSIDEH1BODY,<!--)\}
   \delta(INSIDEH1BODY, -->, <!--) = \{(INSIDEH1BODY, e)\}
r. Current State: INSIDEH2BODY
   \delta(INSIDEH2BODY,<em,CH2) = {(INSIDEH2BODY, OEMCH2)}
   \delta(INSIDEH2BODY, \langle b, CH2 \rangle = \{ (INSIDEH2BODY, OBCH2) \}
   \delta(INSIDEH2BODY, <abbr, CH2) = {(INSIDEH2BODY, OABBRCH2)}
   \delta(INSIDEH2BODY, < strong, CH2) = {(INSIDEH2BODY,
   OSTRONGCH2)}
   \delta(INSIDEH2BODY, <small, CH2) = {(INSIDEH2BODY, OSMALLCH2)}
   \delta(INSIDEH2BODY,STR,CH2) = \{(INSIDEH2BODY,CH2)\}
   \delta(INSIDEH2BODY, < /h2, CH2) = \{(INSIDEH2BODY, e)\}
   \delta(INSIDEH2BODY,>,OH2) = {(INSIDEH2BODY, e)}
   \delta(INSIDEH2BODY,e,DIV) = {(INDIV, DIV)}
   \delta(INSIDEH2BODY,e,FORM) = {(INDIV, FORM)}
   \delta(INSIDEH2BODY,e,CBODY) = {(BODY, CBODY)}
   \delta(INSIDEH2BODY,>,OEM) = {(INEM, CEMOEM)}
   \delta(INSIDEH2BODY,>,OABBR) = {(INABBR, CABBROABBR)}
   \delta(INSIDEH2BODY,>,OB) = {(INB, CBOB)}
   \delta(INSIDEH2BODY,>,OSTRONG) = {(INSTRONG,
   CSTRONGOSTRONG)}
   \delta(INSIDEH2BODY,>,OSMALL) = {(INSMALL, CSMALLOSMALL)}
   \delta(INSIDEH2BODY, <!--,CH2) = \{(INSIDEH2BODY, <!--CH2)\}
   \delta(INSIDEH2BODY,STR,<!--) = \{(INSIDEH2BODY,<!--)\}
   \delta(INSIDEH2BODY, -->, <!--) = \{(INSIDEH2BODY, e)\}
```

s. Current State: INSIDEH3BODY

```
\delta(INSIDEH3BODY, <em, CH3) = {(INSIDEH3BODY, OEMCH3)}
\delta(INSIDEH3BODY, \langle b, CH3 \rangle = \{ (INSIDEH3BODY, OBCH3) \}
δ(INSIDEH3BODY, <abbr, CH3) = {(INSIDEH3BODY, OABBRCH3)}
\delta(INSIDEH3BODY, <strong, CH3) = {(INSIDEH3BODY,
OSTRONGCH3)}
δ(INSIDEH3BODY, <small, CH3) = {(INSIDEH3BODY, OSMALLCH3)}
\delta(INSIDEH3BODY,STR,CH3) = {(INSIDEH3BODY, CH3)}
\delta(INSIDEH3BODY,</h3,CH3) = {(INSIDEH3BODY, e)}
\delta(INSIDEH3BODY,>,OH3) = {(INSIDEH3BODY, e)}
\delta(INSIDEH3BODY,e,DIV) = {(INDIV, DIV)}
\delta(INSIDEH3BODY,e,FORM) = {(INDIV, FORM)}
\delta(INSIDEH3BODY,e,CBODY) = {(BODY, CBODY)}
\delta(INSIDEH3BODY,>,OEM) = {(INEM, CEMOEM)}
\delta(INSIDEH3BODY,>,OSTRONG) = {(INSTRONG,
CSTRONGOSTRONG)}
\delta(INSIDEH3BODY,>,OABBR) = {(INABBR, CABBROABBR)}
\delta(INSIDEH3BODY,>,OB) = {(INB, CBOB)}
δ(INSIDEH3BODY,>,OSMALL) = {(INSMALL, CSMALLOSMALL)}
\delta(INSIDEH3BODY, <!--,CH3) = \{(INSIDEH3BODY, <!--CH3)\}
\delta(INSIDEH3BODY,STR,<!--) = \{(INSIDEH3BODY,<!--)\}
\delta(INSIDEH3BODY,-->,<!--) = {(INSIDEH3BODY, e)}
```

t. Current State: INSIDEH4BODY

```
δ(INSIDEH4BODY,<em,CH4) = {(INSIDEH4BODY, OEMCH4)}
δ(INSIDEH4BODY,<b,CH4) = {(INSIDEH4BODY, OBCH4)}
δ(INSIDEH4BODY,<abbr,CH4) = {(INSIDEH4BODY, OABBRCH4)}
δ(INSIDEH4BODY,<strong,CH4) = {(INSIDEH4BODY,
OSTRONGCH4)}
δ(INSIDEH4BODY,<small,CH4) = {(INSIDEH4BODY, OSMALLCH4)}
```

```
\delta(INSIDEH4BODY,STR,CH4) = {(INSIDEH4BODY, CH4)}
   \delta(INSIDEH4BODY,</h4,CH4) = {(INSIDEH4BODY, e)}
   \delta(INSIDEH4BODY,>,OH4) = {(INSIDEH4BODY, e)}
   \delta(INSIDEH4BODY,e,DIV) = {(INDIV, DIV)}
   \delta(INSIDEH4BODY,e,FORM) = {(INDIV, FORM)}
   \delta(INSIDEH4BODY,e,CBODY) = {(BODY, CBODY)}
   \delta(INSIDEH4BODY,>,OEM) = \{(INEM, CEMOEM)\}
   \delta(INSIDEH4BODY,>,OSTRONG) = {(INSTRONG,
   CSTRONGOSTRONG)}
   δ(INSIDEH4BODY,>,OSMALL) = {(INSMALL, CSMALLOSMALL)}
   \delta(INSIDEH4BODY,>,OB) = {(INB, CBOB)}
   \delta(INSIDEH4BODY,>,OABBR) = {(INABBR, CABBROABBR)}
   \delta(INSIDEH4BODY,<!--,CH4) = {(INSIDEH4BODY, <!--CH4)}
   \delta(INSIDEH4BODY,STR,<!--) = \{(INSIDEH4BODY,<!--)\}
   \delta(INSIDEH4BODY,-->,<!--) = {(INSIDEH4BODY, e)}
u. Current State: INSIDEH5BODY
   \delta(INSIDEH5BODY, <em, CH5) = {(INSIDEH5BODY, OEMCH5)}
   \delta(INSIDEH5BODY, \langle b, CH5 \rangle = \{ (INSIDEH5BODY, OBCH5) \}
   \delta(INSIDEH5BODY, <abbr, CH5) = {(INSIDEH5BODY, OABBRCH5)}
   \delta(INSIDEH5BODY, < strong, CH5) = {(INSIDEH5BODY,
   OSTRONGCH5)}
   δ(INSIDEH5BODY, <small, CH5) = {(INSIDEH5BODY, OSMALLCH5)}
   \delta(INSIDEH5BODY,STR,CH5) = {(INSIDEH5BODY, CH5)}
   \delta(INSIDEH5BODY,</h5,CH5) = {(INSIDEH5BODY, e)}
   \delta(INSIDEH5BODY,>,OH5) = {(INSIDEH5BODY, e)}
   \delta(INSIDEH5BODY,e,DIV) = {(INDIV, DIV)}
   \delta(INSIDEH5BODY,e,FORM) = {(INDIV, FORM)}
   \delta(INSIDEH5BODY,e,CBODY) = {(BODY, CBODY)}
   \delta(INSIDEH5BODY,>,OEM) = \{(INEM, CEMOEM)\}
   \delta(INSIDEH5BODY,>,OABBR) = {(INABBR, CABBROABBR)}
```

```
\delta(INSIDEH5BODY,>,OSTRONG) = {(INSTRONG,
   CSTRONGOSTRONG)}
   \delta(INSIDEH5BODY,>,OSMALL) = {(INSMALL, CSMALLOSMALL)}
   \delta(INSIDEH5BODY,>,OB) = {(INB, CBOB)}
   \delta(INSIDEH5BODY,<!--,CH5) = {(INSIDEH5BODY,<!--CH5)}
   \delta(INSIDEH5BODY,STR,<!--) = \{(INSIDEH5BODY,<!--)\}
   \delta(INSIDEH5BODY, -->, <!--) = \{(INSIDEH5BODY, e)\}
v. Current State: INSIDEH6BODY
   \delta(INSIDEH6BODY, <em, CH6) = {(INSIDEH6BODY, OEMCH6)}
   \delta(INSIDEH6BODY, \langle b, CH6 \rangle = \{ (INSIDEH6BODY, OBCH6) \}
   δ(INSIDEH6BODY, <abbr, CH6) = {(INSIDEH6BODY, OABBRCH6)}
   \delta(INSIDEH6BODY, < strong, CH6) = {(INSIDEH6BODY,
   OSTRONGCH6)}
   δ(INSIDEH6BODY, <small, CH6) = {(INSIDEH6BODY, OSMALLCH6)}
   \delta(INSIDEH6BODY,STR,CH6) = {(INSIDEH6BODY, CH6)}
   \delta(INSIDEH6BODY,</h6,CH6) = {(INSIDEH6BODY, e)}
   \delta(INSIDEH6BODY,>,OH6) = {(INSIDEH6BODY, e)}
   \delta(INSIDEH6BODY,e,DIV) = {(INDIV, DIV)}
   \delta(INSIDEH6BODY,e,FORM) = {(INDIV, FORM)}
   \delta(INSIDEH6BODY,e,CBODY) = {(BODY, CBODY)}
   \delta(INSIDEH6BODY,>,OEM) = {(INEM, CEMOEM)}
   \delta(INSIDEH6BODY,>,OSTRONG) = {(INSTRONG,
   CSTRONGOSTRONG)}
   δ(INSIDEH6BODY,>,OSMALL) = {(INSMALL, CSMALLOSMALL)}
   \delta(INSIDEH6BODY,>,OB) = {(INB, CBOB)}
```

 δ (INSIDEH6BODY,>,OABBR) = {(INABBR, CABBROABBR)}

 δ (INSIDEH6BODY,<!--,CH6) = {(INSIDEH6BODY, <!--CH6)}

 $\delta(INSIDEH6BODY,STR,<!--) = \{(INSIDEH6BODY,<!--)\}$

 $\delta(INSIDEH6BODY, -->, <!--) = \{(INSIDEH6BODY, e)\}$

w. Current State: INSIDEPBODY

```
\delta(INSIDEPBODY, <em, CP) = {(INSIDEPBODY, OEMCP)}
\delta(INSIDEPBODY, \langle b, CP \rangle = \{ (INSIDEPBODY, OBCP) \}
\delta(INSIDEPBODY, <abbr, CP) = {(INSIDEPBODY, OABBRCP)}
\delta(INSIDEPBODY, < strong, CP) = \{(INSIDEPBODY, OSTRONGCP)\}
\delta(INSIDEPBODY, \leq small, CP) = \{(INSIDEPBODY, OSMALLCP)\}
\delta(INSIDEPBODY,STR,CP) = {(INSIDEPBODY, CP)}
\delta(INSIDEPBODY, </p, CP) = \{(INSIDEPBODY, e)\}
\delta(INSIDEPBODY,>,OP) = {(INSIDEPBODY, e)}
\delta(INSIDEPBODY,e,DIV) = {(INDIV, DIV)}
\delta(INSIDEPBODY,e,FORM) = {(INDIV, FORM)}
\delta(INSIDEPBODY,e,CBODY) = {(BODY, CBODY)}
\delta(INSIDEPBODY,>,OEM) = {(INEM, CEMOEM)}
\delta(INSIDEPBODY,>,OSTRONG) = {(INSTRONG,
CSTRONGOSTRONG)}
δ(INSIDEPBODY,>,OSMALL) = {(INSMALL, CSMALLOSMALL)}
\delta(INSIDEPBODY,>,OABBR) = \{(INABBR, CABBROABBR)\}
\delta(INSIDEPBODY,>,OB) = {(INB, CBOB)}
\delta(INSIDEPBODY, <!--, CP) = \{(INSIDEPBODY, <!--CP)\}
\delta(INSIDEPBODY,STR,<!--) = \{(INSIDEPBODY,<!--)\}
\delta(INSIDEPBODY, -->, <!--) = \{(INSIDEPBODY, e)\}
```

x. Current State: INSIDEABODY

```
δ(INSIDEABODY,<em,CA) = {(INSIDEABODY, OEMCA)}
δ(INSIDEABODY,<b,CA) = {(INSIDEABODY, OBCA)}
δ(INSIDEABODY,<abbr,CA) = {(INSIDEABODY, OABBRCA)}
δ(INSIDEABODY,<strong,CA) = {(INSIDEABODY, OSTRONGCA)}
δ(INSIDEABODY,<small,CA) = {(INSIDEABODY, OSMALLCA)}
δ(INSIDEABODY,STR,CA) = {(INSIDEABODY, CA)}
δ(INSIDEABODY,</a,CA) = {(INSIDEABODY, e)}
δ(INSIDEABODY,>,OA) = {(INSIDEABODY, e)}
```

```
\delta(INSIDEABODY,e,DIV) = \{(INDIV,DIV)\}
   \delta(INSIDEABODY,e,CBODY) = {(BODY, CBODY)}
   \delta(INSIDEABODY,e,FORM) = {(INDIV, FORM)}
   \delta(INSIDEABODY,>,OEM) = \{(INEM, CEMOEM)\}
   \delta(INSIDEABODY,>,OABBR) = {(INABBR, CABBROABBR)}
   \delta(INSIDEABODY,>,OSTRONG) = {(INSTRONG,
   CSTRONGOSTRONG)}
   δ(INSIDEABODY,>,OSMALL) = {(INSMALL, CSMALLOSMALL)}
   \delta(INSIDEABODY,>,OB) = {(INB, CBOB)}
   \delta(INSIDEABODY, <!--,CA) = \{(INSIDEABODY, <!--,CA)\}
   \delta(INSIDEABODY,STR,<!--) = \{(INSIDEABODY,<!--)\}
   \delta(INSIDEABODY, -->, <!--) = \{(INSIDEABODY, e)\}
y. Current State: INSIDEBUTTONBODY
   \delta(INSIDEBUTTONBODY, <em, CBUTTON) =
   {(INSIDEBUTTONBODY, OEMCBUTTON)}
   \delta(INSIDEBUTTONBODY, \langle b, CBUTTON \rangle = \{(INSIDEBUTTONBODY, \langle b, CBUTTON \rangle \} \}
   OBCBUTTON)}
   \delta(INSIDEBUTTONBODY, <abbr, CBUTTON) =
   {(INSIDEBUTTONBODY, OABBRCBUTTON)}
   \delta(INSIDEBUTTONBODY, < strong, CBUTTON) =
   {(INSIDEBUTTONBODY, OSTRONGCBUTTON)}
   \delta(INSIDEBUTTONBODY, < small, CBUTTON) =
   {(INSIDEBUTTONBODY, OSMALLCBUTTON)}
   \delta(INSIDEBUTTONBODY,STR,CBUTTON) =
   {(INSIDEBUTTONBODY, CBUTTON)}
   \delta(INSIDEBUTTONBODY,</button,CBUTTON) =
   {(INSIDEBUTTONBODY, e)}
   \delta(INSIDEBUTTONBODY,>,OBUTTON) = {(INSIDEBUTTONBODY,
   e)}
   \delta(INSIDEBUTTONBODY, e, DIV) = \{(INDIV, DIV)\}
```

```
\delta(INSIDEBUTTONBODY,e,CBODY) = {(BODY, CBODY)}
   \delta(INSIDEBUTTONBODY,e,FORM) = {(INDIV, FORM)}
   \delta(INSIDEBUTTONBODY,>,OEM) = {(INEM, CEMOEM)}
   \delta(INSIDEBUTTONBODY,>,OABBR) = \{(INABBR, CABBROABBR)\}
   \delta(INSIDEBUTTONBODY,>,OB) = \{(INB, CBOB)\}
   \delta(INSIDEBUTTONBODY,>,OSMALL) = {(INSMALL,
   CSMALLOSMALL)}
   \delta(INSIDEBUTTONBODY,>,OSTRONG) = {(INSTRONG,
   CSTRONGOSTRONG)}
   \delta(INSIDEBUTTONBODY,<!--,CBUTTON) =
   {(INSIDEBUTTONBODY, <!--CBUTTON)}
   δ(INSIDEBUTTONBODY,STR,<!--) = {(INSIDEBUTTONBODY, <!--)}
   \delta(INSIDEBUTTONBODY,-->,<!--) = {(INSIDEBUTTONBODY, e)}
z. Current State: INTABLE
   \delta(INTABLE, \le m, CTABLE) = \{(INTABLE, OEMCTABLE)\}
   \delta(INTABLE, < b, CTABLE) = \{(INTABLE, OBCTABLE)\}
   \delta(INTABLE, < abbr, CTABLE) = \{(INTABLE, OABBRCTABLE)\}
   \delta(INTABLE, < strong, CTABLE) = \{(INTABLE, OSTRONGCTABLE)\}
   \delta(INTABLE, < small, CTABLE) = \{(INTABLE, OSMALLCTABLE)\}
   \delta(INTABLE, \langle tr, CTABLE \rangle) = \{(INTABLE, OTRCTABLE)\}
   \delta(INTABLE,id,OTR) = \{(INTABLEGLOBAL,IDOTR)\}
   \delta(INTABLE, class, OTR) = \{(INTABLEGLOBAL, CLASSOTR)\}
   \delta(INTABLE, style, OTR) = \{(INTABLEGLOBAL, STYLEOTR)\}
   \delta(INTABLE, >, OTR) = \{(INTRINTABLE, CTROTR)\}
   \delta(INTABLE, >, OEM) = \{(INEM, CEMOEM)\}
   \delta(INTABLE, >, OSMALL) = \{(INSMALL, CSMALLOSMALL)\}
   \delta(INTABLE,>,OB) = \{(INB, CBOB)\}
   \delta(INTABLE, >, OSTRONG) = \{(INSTRONG, CSTRONGOSTRONG)\}
   \delta(INTABLE, >, OABBR) = \{(INABBR, CABBROABBR)\}
   \delta(INTABLE, < td, CTABLE) = \{(INTABLE, OTDCTABLE)\}
```

```
δ(INTABLE,class,OTD) = {(INTABLEGLOBAL, CLASSOTD)}
   \delta(INTABLE, style, OTD) = \{(INTABLEGLOBAL, STYLEOTD)\}
   \delta(INTABLE, < th, CTABLE) = \{(INTABLE, OTHCTABLE)\}
   \delta(INTABLE,id,OTH) = \{(INTABLEGLOBAL,IDOTH)\}
   \delta(INTABLE, class, OTH) = \{(INTABLEGLOBAL, CLASSOTH)\}
   \delta(INTABLE, style, OTH) = \{(INTABLEGLOBAL, STYLEOTH)\}
   \delta(INTABLE, </table, CTABLE) = \{(INTABLE, e)\}
   \delta(INTABLE, >, OTABLE) = \{(GOTTABLE, e)\}
   \delta(INTABLE, <!--,CTABLE) = \{(INTABLE, <!--CTABLE)\}
   \delta(INTABLE, <!--, CTABLE) = \{(CTD, <!--CTD)\}
   \delta(INTABLE,STR,<!--) = \{(INTABLE,<!--)\}
   \delta(INTABLE, -->, <!--) = \{(INTABLE, e)\}
aa. Current State: INSIDEFORMBODY
   \delta(INSIDEFORMBODY, <em, FORM) = {(INSIDEFORMBODY,
   OEMFORM)}
   \delta(INSIDEFORMBODY, \langle b, FORM \rangle = \{(INSIDEFORMBODY, b, FORM)\}
   OBFORM)}
   \delta(INSIDEFORMBODY, <abbr, FORM) = {(INSIDEFORMBODY,
   OABBRFORM)}
   \delta(INSIDEFORMBODY, \leqstrong, FORM) = {(INSIDEFORMBODY,
   OSTRONGFORM)}
   \delta(INSIDEFORMBODY, < small, FORM) = {(INSIDEFORMBODY,
   OSMALLFORM)}
   \delta(INSIDEFORMBODY, STR, FORM) = {(INSIDEFORMBODY, FORM)}
   \delta(INSIDEFORMBODY,e,FORM) = {(INDIV, FORM)}
   \delta(INSIDEFORMBODY,e,DIV) = {(INDIV, DIV)}
   \delta(INSIDEFORMBODY,e,CBODY) = {(BODY, CBODY)}
   \delta(INSIDEFORMBODY,>,OEM) = \{(INEM, CEMOEM)\}
```

 δ (INSIDEFORMBODY,>,OABBR) = {(INABBR, CABBROABBR)}

 $\delta(INTABLE,id,OTD) = \{(INTABLEGLOBAL,IDOTD)\}$

```
\delta(INSIDEFORMBODY,>,OB) = {(INB, CBOB)}
                \delta(INSIDEFORMBODY,>,OSMALL) = {(INSMALL,
                CSMALLOSMALL)}
                \delta(INSIDEFORMBODY,>,OSTRONG) = {(INSTRONG,
                CSTRONGOSTRONG)}
                \delta(INSIDEFORMBODY, <!--, FORM) = \{(INSIDEFORMBODY, <!--, FORM)\}
                <!--FORM)}
                δ(INSIDEFORMBODY,STR,<!--) = {(INSIDEFORMBODY, <!--)}
                \delta(INSIDEFORMBODY, -->, <!--) = \{(INSIDEFORMBODY, e)\}
ab. Current State: TDINTRCONTENT
                \delta(TDINTRCONTENT, \le m, CTD) = \{(TDINTRCONTENT, OEMCTD)\}
                δ(TDINTRCONTENT, <b,CTD) = {(TDINTRCONTENT, OBCTD)}
                \delta(TDINTRCONTENT, < abbr, CTD) = \{(TDINTRCONTENT, < abbr, CTD)\}
                OABBRCTD)}
                \delta(TDINTRCONTENT, < strong, CTD) = \{(TDINTRCONTENT, 
                OSTRONGCTD)}
                \delta(TDINTRCONTENT, < small, CTD) = \{(TDINTRCONTENT, < small, CTD) = \}
                OSMALLCTD)}
                \delta(TDINTRCONTENT, STR, CTD) = \{(TDINTRCONTENT, CTD)\}
                \delta(TDINTRCONTENT, < /td, CTD) = \{(TDINTRCONTENT, e)\}
                \delta(TDINTRCONTENT, >, OTD) = \{(INTRINTABLE, e)\}
                \delta(TDINTRCONTENT, >, OEM) = \{(INEMTDINTR, CEMOEM)\}
                \delta(TDINTRCONTENT,>,OB) = \{(INBTDINTR, CBOB)\}
                \delta(TDINTRCONTENT,>,OABBR) = \{(INABBRTDINTR,
                CABBROABBR)}
                \delta(TDINTRCONTENT, >, OSMALL) = \{(INSMALLTDINTR,
                CSMALLOSMALL)}
                \delta(TDINTRCONTENT, >, OSTRONG) = \{(INSTRONGTDINTR, <, OSTRONG, <, 
                CSTRONGOSTRONG)}
                δ(TDINTRCONTENT,<!--,CTD) = {(TDINTRCONTENT,<!--CTD)}
```

```
\delta(TDINTRCONTENT,STR,<!--) = \{(TDINTRCONTENT,<!--)\}

\delta(TDINTRCONTENT,-->,<!--) = \{(TDINTRCONTENT, e)\}
```

ac. Current State: THINTRCONTENT

```
\delta(THINTRCONTENT, \leq m, CTH) = \{(THINTRCONTENT, OEMCTH)\}
\delta(THINTRCONTENT, < b, CTH) = \{(THINTRCONTENT, OBCTH)\}
\delta(THINTRCONTENT, < abbr, CTH) = \{(THINTRCONTENT, < abbr, CTH)\}
OABBRCTH)}
\delta(THINTRCONTENT, < strong, CTH) = \{(THINTRCONTENT, 
OSTRONGCTH)}
\delta(THINTRCONTENT, < small, CTH) = \{(THINTRCONTENT, < small, CTH) = \}
OSMALLCTH)}
\delta(THINTRCONTENT, STR, CTH) = \{(THINTRCONTENT, CTH)\}
\delta(THINTRCONTENT, </th, CTH) = \{(THINTRCONTENT, e)\}
\delta(THINTRCONTENT, >, OTH) = \{(INTRINTABLE, e)\}
\delta(THINTRCONTENT, >, OEM) = \{(INEMTHINTR, CEMOEM)\}
\delta(THINTRCONTENT, >, OB) = \{(INBTHINTR, CBOB)\}
\delta(THINTRCONTENT, >, OSTRONG) = \{(INSTRONGTHINTR,
CSTRONGOSTRONG)}
\delta(THINTRCONTENT, >, OABBR) = \{(INABBRTHINTR,
CABBROABBR)}
\delta(THINTRCONTENT, >, OSMALL) = \{(INSMALLTHINTR,
CSMALLOSMALL)}
δ(THINTRCONTENT,<!--,CTH) = {(THINTRCONTENT, <!--CTH)}
\delta(THINTRCONTENT, STR, <!--) = \{(THINTRCONTENT, <!--)\}
\delta(THINTRCONTENT, -->, <!--) = \{(THINTRCONTENT, e)\}
```

ad. Current State: INTRINTABLE

```
\delta(INTRINTABLE,<em,CTD) = {(INTRINTABLE, OEMCTD)}
\delta(INTRINTABLE,<em,CTH) = {(INTRINTABLE, OEMCTH)}
\delta(INTRINTABLE,<b,CTD) = {(INTRINTABLE, OBCTD)}
```

```
\delta(INTRINTABLE, < b, CTH) = \{(INTRINTABLE, OBCTH)\}
\delta(INTRINTABLE, < abbr,CTD) = \{(INTRINTABLE, OABBRCTD)\}
\delta(INTRINTABLE, < abbr, CTH) = \{(INTRINTABLE, OABBRCTH)\}
\delta(INTRINTABLE, < strong, CTD) = \{(INTRINTABLE, OSTRONGCTD)\}
\delta(INTRINTABLE, < strong, CTH) = \{(INTRINTABLE, OSTRONGCTH)\}
\delta(INTRINTABLE, < small, CTD) = \{(INTRINTABLE, OSMALLCTD)\}
\delta(INTRINTABLE, < small, CTH) = \{(INTRINTABLE, OSMALLCTH)\}
\delta(INTRINTABLE, < th, CTR) = \{(INTRINTABLE, OTHCTR)\}
\delta(INTRINTABLE,id,OTH) = \{(INTRINTABLEGLOBAL,IDOTH)\}
\delta(INTRINTABLE, class, OTH) = \{(INTRINTABLEGLOBAL, otherwise)\}
CLASSOTH)}
\delta(INTRINTABLE, style, OTH) = \{(INTRINTABLEGLOBAL,
STYLEOTH)}
\delta(INTRINTABLE,>,OTH) = \{(THINTRCONTENT, CTHOTH)\}
\delta(INTRINTABLE, < td, CTR) = \{(INTRINTABLE, OTDCTR)\}
\delta(INTRINTABLE,id,OTD) = \{(INTRINTABLEGLOBAL,IDOTD)\}
\delta(INTRINTABLE, class, OTD) = \{(INTRINTABLEGLOBAL,
CLASSOTD)}
\delta(INTRINTABLE, style, OTD) = \{(INTRINTABLEGLOBAL,
STYLEOTD)}
\delta(INTRINTABLE, >, OTD) = \{(TDINTRCONTENT, CTDOTD)\}
\delta(INTRINTABLE, >, OEM) = \{(INTRINTABLE, e)\}
\delta(INTRINTABLE, </td, CTD) = \{(INTRINTABLE, e)\}
\delta(INTRINTABLE, >, OTD) = \{(INTRINTABLE, e)\}
\delta(INTRINTABLE, </th, CTH) = \{(INTRINTABLE, e)\}
\delta(INTRINTABLE, >, OTH) = \{(INTRINTABLE, e)\}
\delta(INTRINTABLE, </tr, CTR) = \{(INTRINTABLE, e)\}
\delta(INTRINTABLE, >, OTR) = \{(INTABLE, e)\}
\delta(INTRINTABLE, <!--,CTR) = \{(INTRINTABLE, <!--CTR)\}
\delta(INTRINTABLE, <!--,CTD) = \{(INTRINTABLE, <!--CTD)\}
\delta(INTRINTABLE,STR,<!--) = \{(INTRINTABLE,<!--)\}
```

```
\delta(INTRINTABLE, -->, <!--) = \{(INTRINTABLE, e)\}
```

ag. Current State: INB

ah. Current State: INBTDINTR

$$\delta(INBTDINTR,STR,NB) = \{(INB, NB)\}$$

$$\delta(INBTDINTR,
$$\delta(INBTDINTR, >,NB) = \{(INB, e)\}$$

$$\delta(INBTDINTR,$$$$

ai. Current State: INBTHINTR

```
\delta(INBTHINTR,STR,NB) = \{(INB,NB)\}
      \delta(INBTHINTR, </b, NB) = \{(INB, e)\}
      \delta(INBTHINTR,>,NB) = \{(INB, e)\}
      \delta(INBTHINTR, <!--,CB) = \{(INBTDINTR, <!--,CB)\}
aj. Current State: INABBR
      \delta(INABBR,STR,CABBR) = \{(INABBR,CABBR)\}
      \delta(INABBR, < /abbr, CABBR) = \{(INABBR, e)\}
      \delta(INABBR, >, OABBR) = \{(INABBR, e)\}
      \delta(INABBR,e,CTITLE) = \{(INSIDETITLEBODY,CTITLE)\}
      \delta(INABBR,e,CSCRIPT) = \{(INSIDESCRIPTBODY,CSCRIPT)\}
      \delta(INABBR,e,CH1) = \{(INSIDEH1BODY,CH1)\}
      \delta(INABBR,e,CH2) = \{(INSIDEH2BODY,CH2)\}
      \delta(INABBR,e,CH3) = \{(INSIDEH3BODY,CH3)\}
      \delta(INABBR,e,CH4) = {(INSIDEH4BODY, CH4)}
      \delta(INABBR,e,CH5) = {(INSIDEH5BODY, CH5)}
      \delta(INABBR,e,CH6) = {(INSIDEH6BODY, CH6)}
      \delta(INABBR,e,CP) = {(INSIDEPBODY, CP)}
      \delta(INABBR,e,DIV) = \{(INDIV,DIV)\}
      \delta(INABBR,e,CA) = {(INSIDEABODY, CA)}
      \delta(INABBR,e,CBUTTON) = \{(INSIDEBUTTONBODY,CBUTTON)\}
      \delta(INABBR, e, CTABLE) = \{(INTABLE, CTABLE)\}
      \delta(INABBR,e,CBODY) = {(BODY, CBODY)}
      \delta(INABBR, <!--,CABBR) = \{(INABBR, <!--CABBR)\}
      \delta(INABBR,STR,<!--) = \{(INABBR,<!--)\}
      \delta(INABBR, -->, <!--) = \{(INABBR, e)\}
ak. Current State: INABBRTDINTR
      \delta(INABBRTDINTR,STR,CABBR) = \{(INABBR,CABBR)\}
      \delta(INABBRTDINTR, </abbr, CABBR) = \{(INABBR, e)\}
      \delta(INABBRTDINTR, >, OABBR) = \{(INABBR, e)\}
```

```
\delta(\text{INABBRTDINTR}, <!--, \text{CABBR}) = \{(\text{INABBRTDINTR}, <!--, \text{CABBR})\}
```

al. Current State: INABBRTHINTR

```
δ(INABBRTHINTR,STR,CABBR) = {(INABBR, CABBR)}
δ(INABBRTHINTR,</abbr,CABBR) = {(INABBR, e)}
δ(INABBRTHINTR,>,OABBR) = {(INABBR, e)}
δ(INABBRTHINTR,<!--,CABBR) = {(INABBRTDINTR,<!--CABBR)}
```

am. Current State: INSTRONG

```
δ(INSTRONG,STR,CSTRONG) = {(INSTRONG, CSTRONG)}
\delta(INSTRONG, </strong, CSTRONG) = \{(INSTRONG, e)\}
\delta(INSTRONG, >, OSTRONG) = \{(INSTRONG, e)\}
\delta(INSTRONG, e, CTITLE) = \{(INSIDETITLEBODY, CTITLE)\}
\delta(INSTRONG, e, CSCRIPT) = \{(INSIDESCRIPTBODY, CSCRIPT)\}
\delta(INSTRONG,e,CH1) = {(INSIDEH1BODY, CH1)}
\delta(INSTRONG,e,CH2) = \{(INSIDEH2BODY,CH2)\}
\delta(INSTRONG,e,CH3) = {(INSIDEH3BODY, CH3)}
\delta(INSTRONG, e, CH4) = \{(INSIDEH4BODY, CH4)\}
\delta(INSTRONG,e,CH5) = {(INSIDEH5BODY, CH5)}
\delta(INSTRONG,e,CH6) = {(INSIDEH6BODY, CH6)}
\delta(INSTRONG, e, CP) = \{(INSIDEPBODY, CP)\}
\delta(INSTRONG,e,DIV) = \{(INDIV,DIV)\}
\delta(INSTRONG,e,CA) = {(INSIDEABODY, CA)}
\delta(INSTRONG,e,CBUTTON) = {(INSIDEBUTTONBODY, CBUTTON)}
\delta(INSTRONG, e, CTABLE) = \{(INTABLE, CTABLE)\}
\delta(INSTRONG,e,CBODY) = \{(BODY,CBODY)\}
\delta(INSTRONG, <!--,CSTRONG) = \{(INSTRONG, <!--CSTRONG)\}
\delta(INSTRONG,STR,<!--) = \{(INSTRONG,<!--)\}
\delta(INSTRONG, -->, <!--) = \{(INSTRONG, e)\}
```

an. Current State: INSTRONGTDINTR

```
\delta(INSTRONGTDINTR,STR,CSTRONG) = \{(INSTRONG,CSTRONG)\}
      \delta(INSTRONGTDINTR, < /strong, CSTRONG) = \{(INSTRONG, e)\}
      \delta(INSTRONGTDINTR,>,OSTRONG) = \{(INSTRONG, e)\}
      \delta(INSTRONGTDINTR, <!--, CSTRONG) = \{(INSTRONGTDINTR,
      <!--CSTRONG)}
ao. Current State: INSTRONGTHINTR
      \delta(INSTRONGTHINTR,STR,CSTRONG) = \{(INSTRONG,CSTRONG)\}
      \delta(INSTRONGTHINTR, < /strong, CSTRONG) = \{(INSTRONG, e)\}
      \delta(INSTRONGTHINTR,>,OSTRONG) = \{(INSTRONG, e)\}
      \delta(INSTRONGTHINTR, <!--, CSTRONG) = \{(INSTRONGTDINTR,
      <!--CSTRONG)}
ap. Current State: INSMALL
      \delta(INSMALL,STR,CSMALL) = \{(INSMALL,CSMALL)\}
      \delta(INSMALL, </small, CSMALL) = \{(INSMALL, e)\}
      \delta(INSMALL, >, OSMALL) = \{(INSMALL, e)\}
      \delta(INSMALL,e,CTITLE) = \{(INSIDETITLEBODY,CTITLE)\}
      \delta(INSMALL,e,CSCRIPT) = \{(INSIDESCRIPTBODY,CSCRIPT)\}
      \delta(INSMALL,e,CH1) = \{(INSIDEH1BODY,CH1)\}
      \delta(INSMALL,e,CH2) = \{(INSIDEH2BODY,CH2)\}
      \delta(INSMALL,e,CH3) = \{(INSIDEH3BODY,CH3)\}
      \delta(INSMALL,e,CH4) = {(INSIDEH4BODY, CH4)}
      \delta(INSMALL,e,CH5) = {(INSIDEH5BODY, CH5)}
      \delta(INSMALL,e,CH6) = \{(INSIDEH6BODY,CH6)\}
      \delta(INSMALL,e,CP) = \{(INSIDEPBODY,CP)\}
      \delta(INSMALL,e,DIV) = \{(INDIV,DIV)\}
      \delta(INSMALL,e,CA) = {(INSIDEABODY, CA)}
      \delta(INSMALL,e,CBUTTON) = \{(INSIDEBUTTONBODY,CBUTTON)\}
      \delta(INSMALL, e, CTABLE) = \{(INTABLE, CTABLE)\}
      \delta(INSMALL,e,CBODY) = {(BODY, CBODY)}
```

```
\begin{split} &\delta(\text{INSMALL},<!\text{--},\text{CSMALL}) = \{(\text{INSMALL},<!\text{--}\text{CSMALL})\} \\ &\delta(\text{INSMALL},\text{STR},<!\text{--}) = \{(\text{INSMALL},<!\text{--})\} \\ &\delta(\text{INSMALL},\text{--}>,<!\text{--}) = \{(\text{INSMALL},\text{e})\} \end{split}
```

aq. Current State: INSMALLTDINTR

```
\begin{split} &\delta(\text{INSMALLTDINTR}, \text{STR}, \text{CSMALL}) = \{(\text{INSMALL}, \text{CSMALL})\} \\ &\delta(\text{INSMALLTDINTR}, </\text{small}, \text{CSMALL}) = \{(\text{INSMALL}, \text{e})\} \\ &\delta(\text{INSMALLTDINTR}, >, \text{OSMALL}) = \{(\text{INSMALL}, \text{e})\} \\ &\delta(\text{INSMALLTDINTR}, <!--, \text{CSMALL}) = \{(\text{INSMALLTDINTR}, <!--, \text{CSMALL})\} \end{split}
```

ar. Current State: INSMALLTHINTR

```
δ(INSMALLTHINTR,STR,CSMALL) = {(INSMALL, CSMALL)}
δ(INSMALLTHINTR,</small,CSMALL) = {(INSMALL, e)}
δ(INSMALLTHINTR,>,OSMALL) = {(INSMALL, e)}
δ(INSMALLTHINTR,<!--,CSMALL) = {(INSMALLTDINTR,
<!--CSMALL)}
```

as. Current State: GOTDIV

```
\delta(GOTDIV,e,DIV) = {(INDIV, DIV)}

\delta(GOTDIV,e,CBODY) = {(BODY, CBODY)}

\delta(GOTDIV,e,FORM) = {(INDIV, FORM)}
```

at. Current State: INTABLEGLOBAL

```
\delta(INTABLEGLOBAL,=,ID) = {(INTABLEGLOBAL, =)}
\delta(INTABLEGLOBAL,=,CLASS) = {(INTABLEGLOBAL, =)}
\delta(INTABLEGLOBAL,=,STYLE) = {(INTABLEGLOBAL, =)}
\delta(INTABLEGLOBAL,X,=) = {(BODY, e)}
```

au. Current State: INTRINTABLEGLOBAL

```
δ(INTRINTABLEGLOBAL,=,ID) = {(INTRINTABLEGLOBAL, =)}
```

```
\delta(INTRINTABLEGLOBAL,=,CLASS) = \{(INTRINTABLEGLOBAL,\\ =)\} \delta(INTRINTABLEGLOBAL,=,STYLE) = \{(INTRINTABLEGLOBAL,\\ =)\}
```

av. Current State: GOTTABLE

```
\delta(GOTTABLE,e,DIV) = {(INDIV, DIV)}
\delta(GOTTABLE,e,CBODY) = {(BODY, CBODY)}
\delta(GOTTABLE,e,FORM) = {(INDIV, FORM)}
```

aw. Current State: BODYGLOBAL

```
\delta(BODYGLOBAL,=,ID) = \{(BODYGLOBAL,=)\}

\delta(BODYGLOBAL,=,CLASS) = \{(BODYGLOBAL,=)\}

\delta(BODYGLOBAL,=,STYLE) = \{(BODYGLOBAL,=)\}

\delta(BODYGLOBAL,X,=) = \{(BODY,e)\}
```

ax. Current State: SCRIPTVALIDBODY

```
\delta(\text{SCRIPTVALIDBODY},=,\text{SRC}) = \{(\text{SCRIPTVALIDBODY},=)\}
\delta(\text{SCRIPTVALIDBODY},X,=) = \{(\text{BODY},e)\}
```

ay. Current State: SCRIPTVALIDINDIV

```
\delta(SCRIPTVALIDINDIV,=,SRC) = \{(SCRIPTVALIDINDIV,=)\}
 \delta(SCRIPTVALIDINDIV,X,=) = \{(INDIV, e)\}
```

az. Current State: HREFVALIDBODY

```
\delta(HREFVALIDBODY,=,HREF) = \{(HREFVALIDBODY,=)\}
 \delta(HREFVALIDBODY,X,=) = \{(BODY, e)\}
```

ba. Current State: HREFVALIDINDIV

```
\delta(HREFVALIDINDIV,=,HREF) = \{(HREFVALIDINDIV,=)\}
 \delta(HREFVALIDINDIV,X,=) = \{(INDIV,e)\}
```

bb. Current State: TYPEVALIDBODY

```
\delta(\text{TYPEVALIDBODY},=,\text{TYPE}) = \{(\text{TYPEVALIDBODY},=)\}
 \delta(\text{TYPEVALIDBODY},X,=) = \{(\text{BODY}, e)\}
```

bc. Current State: TYPEVALIDINDIV

$$\delta(\text{TYPEVALIDINDIV},=,\text{TYPE}) = \{(\text{TYPEVALIDINDIV},=)\}$$

 $\delta(\text{TYPEVALIDINDIV},X,=) = \{(\text{INDIV},e)\}$

bd. Current State: ACTIONVALIDBODY

$$\delta(ACTIONVALIDBODY,=,ACTION) = \{(ACTIONVALIDBODY,=)\}$$

 $\delta(ACTIONVALIDBODY,X,=) = \{(BODY,e)\}$

be. Current State: ACTIONVALIDINDIV

$$\delta(\text{ACTIONVALIDINDIV},=,\text{ACTION}) = \{(\text{ACTIONVALIDINDIV},=)\}$$

$$\delta(\text{ACTIONVALIDINDIV},X,=) = \{(\text{INDIV},e)\}$$

bf. Current State: METHODVALIDBODY

```
δ(METHODVALIDBODY,=,METHOD) = {(METHODVALIDBODY,
=)}
δ(METHODVALIDBODY,X,=) = {(BODY, e)}
```

bg. Current State: METHODVALIDINDIV

```
δ(METHODVALIDINDIV,=,METHOD) = {(METHODVALIDINDIV,
=)}
δ(METHODVALIDINDIV,X,=) = {(INDIV, e)}
```

bh. Current State: END

$$\delta(\text{END}, ,$$

$$\delta(\text{END}, < /\text{html}, \text{CHTML}) = \{(\text{END}, e)\}$$

 $\delta(\text{END}, >, \text{OHTML}) = \{(\text{FINAL}, e)\}$

bi. Current State: FINAL

$$\delta(\text{FINAL}, ,$$

bj. Current state: ALTVALIDBODY

$$\delta(ALTVALIDBODY,=,HREF) = \{(ALTVALIDBODY,=)\}$$

 $\delta(ALTVALIDBODY,X,=) = \{(BODY, e)\}$

bk. Current state: ALTVALIDINDIV

$$\delta(ALTVALIDINDIV,=,HREF) = \{(ALTVALIDINDIV,=)\}$$

 $\delta(ALTVALIDINDIV,X,=) = \{(INDIV,e)\}$

2.6 Start State (q0)

q0 atau *starting state* adalah yang digunakan untuk memulai jalan awalnya PDA. Pada rancangan PDA ini, q0 adalah STATE, yang mana PDA akan diterima jika dimulai dengan *input symbol* awalannya adalah tag pembuka html atau <html.

2.7 Initial Stack Symbol (Z0)

Z0 atau *initial stack symbol* merupakan simbol yang digunakan untuk memulai inisialisasi stack PDA untuk pertama kalinya. Pada PDA kali ini, digunakan *stack symbol Z* sebagai awal inisialisasi isi pertama dari stack PDA.

2.8 Accepting States (F)

PDA ini diintegrasikan dengan menggunakan *empty stack acceptance* sehingga sebuah *string* masukan dikatakan benar jika isian dari *stack* telah kosong. Sebagai *accepting states* (F) adalah state END yang bertujuan untuk melakukan penghabisan tag html yang tersisa pada stack. Pada state ini juga, kondisi PDA akan berada dalam keadaan kosong sehingga sebuah *inputan string* akan dinyatakan benar juga jika stack kosong pada state ini.

Bab III

Implementasi dan Pengujian

3.1 Spesifikasi Teknis Program

3.1.1 Struktur Data

```
STRUKTUR DATA PDA
Definisi type value dari key
pda = {
   'states' : list of char,
   'input_symbols' : list of string,
   'stack_symbols' : list of string,
   'start_state' : string,
   'start_stack_symbols' : string,
   'final' : list of string,
   'pda_type' : char,
   'transition' : list of object,
}
Definisi type value 'transition' / object
'Transition' = {
   'current' : string,
   'input' : string,
   'top' : string,
   'next' : string,
   'push' : string,
```

3.1.2 Fungsi dan Prosedur

Program terbagi menjadi 2 file Python yaitu main.py dan pda.py. Di dalam file main.py berisi program utama yang menerima argumen dan berisi fungsi untuk meng parse konten dari html itu sendiri yang bernama print_html_tags_and_text. Di dalam main.py, akan dilakukan pengimportan file PDA. File pda.py berisi fungsi baca_pda, printpda, dan processingpda yang berfungsi untuk meng parse pda dari pda.txt

```
File: pda.py

def bacapda(path: str) -> dict

Fungsi ini membaca path atau nama file dari PDA yang telah
didefinisikan lalu memprosesnya menjadi suatu dictionary yang
merupakan struktur data dari PDA.
```

def processingpda(pda : dict, html : list)

Prosedur ini menerima PDA yang merupakan suatu dictionary dan list yang berisi token-token yang telah diparsing dari html

def printpda(string)

Prosedur ini mencetak isi dari token PDA yang digunakan untuk testing sebelum dimasukkan ke fungsi processingpda

File: main.py

def print_html_tags_and_text(file_path : string) -> list
Fungsi ini akan menerima path dari filename atau file html yang
ingin di cek kebenarannya. Kemudian, file HTML tersebut akan
diparse menjadi beberapa token sesuai dengan ketentuan yang
berlaku. Contohnya seperti adanya text akan di tokenisasi
menjadi STR. Setelah file HTML diproses, fungsi ini akan
mengembalikan token-token yang diproses dalam suatu list.

3.1.3 Antarmuka

Interaksi antara program dengan pengguna dapat dijalankan dengan menggunakan program berikut:

```
> python main.py pda.txt "inputAcc.html"
```

pda.txt merupakan file hasil konfigurasi state PDA yang telah dibuat dan "InputAcc.html" dapat diganti dengan file html yang ingin di cek kebenarannya.

Terdapat 2 jenis keluaran dari program ini yakni:

1. **Accepted**, yang ditampilkan pada CLI dengan luaran seperti berikut.

```
PS C:\Users\Asus\Desktop\ITB PENTING - Copy\semester 3\tlCongratulations, No problems detected
```

Gambar 1.1.3.1. Luaran jika sintaks html masukan benar

2. **Syntax Error**, yang akan ditampilkan berupa *Error warning* yang berisi kesalahan sintaks yang terjadi pada line tertentu dan ekspektasi yang seharusnya untuk mengoreksi sintaks tersebut.

```
PS C:\Users\Asus\Desktop\ITB PENTING - Copy\
Error warning :
    Error in line number 7
expected an 'src' before '<h1'</pre>
```

Gambar 1.1.3.2. Luaran jika sintaks html masukan salah

3.2 Uji Kasus

3.2.1 Studi Kasus 1

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan sebuah kesalahan atau **REJECTED** karena tag head muncul setelah tag body. Berikut merupakan tampilan luaran program.

```
• PS C:\Users\Asus\Desktop\ITB PENTING - Copy\semester 3\tbfo\TBFO-PDA-K01-PIN-KHIONG-HOK-88> python main.py pda.txt "studi-kasus-1.html"

Error warning:
    Error in line number 1
    expected an '<a href="text-description">text-description</a> after '\(\frac{1}{2}\)'

expected an '<a href="text-description">text-description</a>.
```

Gambar 1.2.1.1. Hasil luaran program terhadap studi kasus 1

3.2.2 Studi Kasus 2

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan sebuah kesalahan atau **REJECTED** karena tag pertama bukan html. Berikut merupakan tampilan luaran program.

Gambar 1.2.2.1. Hasil luaran program terhadap studi kasus 2

3.2.3 Studi Kasus 3

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan sebuah kesalahan atau **REJECTED** karena tidak punya tag head. Berikut merupakan tampilan luaran program.

Gambar 1.2.3.1. Hasil luaran program terhadap studi kasus 3

3.2.4 Studi Kasus 4

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan program yang diterima atau **ACCEPTED**. Berikut merupakan tampilan luaran program.

```
    PS C:\Users\Asus\Desktop\ITB PENTING - Copy\semester 3\tbfo\TBFO-PDA-K01-PIN-KHIONG-HOK-88> python main.py pda.txt "studi-kasus-4.html"
    Congratulations, No problems detected
```

Gambar 1.2.4.1. Hasil luaran program terhadap studi kasus 4

3.2.5 Studi Kasus 5

```
<html>
  <head>
    <title>Simple Webpage</title>
  </head>
 <body>
   <!-- Bagian utama web -->
   <h1>Hello, World!</h1>
   <h2>Welcome to my page</h2>
    <hr>
   <img src="./welcome.jpeg" alt="Welcome Banner">
   This is a <em>simple</em> webpage.
   <!-- Custom element -->
   <div id="footer" class="footer"> This is the end of the
page </div>
  </body>
</html>
```

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan program yang diterima atau **ACCEPTED**. Berikut merupakan tampilan luaran program.

```
• PS C:\Users\Asus\Desktop\ITB PENTING - Copy\semester 3\tbfo\TBFO-PDA-K01-PIN-KHIONG-HOK-88> python main.py pda.txt "studi-kasus-5.html"

Error warning:

Error in line number 15

expected an 'X' after '='
```

Gambar 1.2.5.1. Hasil luaran program terhadap studi kasus 5

3.2.6 Studi kasus 6

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan sebuah kesalahan atau **REJECTED** karena tag img tidak memiliki attribute wajib src. Berikut merupakan tampilan luaran program.

```
PS C:\Users\Asus\Desktop\IIB PENTING - Copy\semester 3\tbfo\TBFO-PDA-K01-PIN-KHIONG-HOK-88> python main.py pda.txt "studi-kasus-6.html"

Error warning :
    Error in line number 10
    expected an 'src' before 'sp'
```

Gambar 1.2.6.1. Hasil luaran program terhadap studi kasus 6

3.2.7 Studi Kasus 7

```
<html>
<head>
<title>Simple Webpage</title>

</head>
<body>
<h2>HTML Forms</h2>

<form action="/action_page.php" method="POST">
<h5 class="label">First name:</h5><br>
```

```
<input type="text" id="fname"><br>
  <h5 class="label">Last name:</h5><br>
  <input type="text" id="lname"><br>
  <br/>
  <button type="submit">Submit</button>
</form>

If you click the "Submit" button, the form-data will be sent to a page called "/action_page.php".
</body>
</body>
</html>
```

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan program yang diterima atau **ACCEPTED**. Berikut merupakan tampilan luaran program.

```
• PS C:\Users\Asus\Desktop\ITB PENTING - Copy\semester 3\tbfo\TBFO-PDA-K01-PIN-KHIONG-HOK-88> python main.py pda.txt "studi-kasus-7.html" Congratulations, No problems detected
```

Gambar 1.2.7.1. Hasil luaran program terhadap studi kasus 7

3.2.8 Studi Kasus 8

```
<html>
<head>
  <title>Simple Webpage</title>
</head>
<body>
<h2>HTML Forms</h2>
<form action="/action page.php" method="TEMBAK">
  <div id="label">First name:</div><br>
  <input type="text" id="fname"><br>
  <div id="label">Last name:</div><br>
  <input type="text" id="lname"><br><br>
  <button type="submit">Submit
</form>
If you click the "Submit" button, the form-data will be
sent to a page called "/action page.php".
</body>
</html>
```

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan sebuah kesalahan atau **REJECTED** karena method yang dimiliki oleh tag form bukan "GET" maupun "POST". Berikut merupakan tampilan luaran program.

```
P5 C:\Users\Asus\Desktop\ITB PENTING - Copy\semester 3\tbfo\TBFO-PDA-K01-PIN-KHIONG-HOK-88> python main.py pda.txt "studi-kasus-8.html"

Error warning :
    Error in line number 10
    expected an 'X' before '>'
```

Gambar 1.2.8.1. Hasil luaran program terhadap studi kasus 8

3.2.9 Studi Kasus 9

```
<html>
<head>
    <title>Simple Webpage</title>
    <script>
        document.getElementById("demo").innerHTML = "Hello
JavaScript!";
        </script>
        </head>
        <body>

<h1>The script element</h1>

</body>
</html>
```

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan program yang diterima atau **ACCEPTED**. Berikut merupakan tampilan luaran program.

```
• PS C:\Users\Asus\Desktop\ITB PENTING - Copy\semester 3\tbfo\TBFO-PDA-K01-PIN-KHIONG-HOK-88> python main.py pda.txt "studi-kasus-9.html" Congratulations, No problems detected
```

Gambar 1.2.9.1. Hasil luaran program terhadap studi kasus 9

3.2.10 Studi Kasus 10

```
<html>
<head>
<title>Simple Webpage</title>
<script>
document.getElementById("demo").innerHTML = "Hello
JavaScript!";
</script>
</head>
<body>
<hl>The script element</hl>

id="demo">
```

```
</body>
</html>
```

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan sebuah kesalahan atau **REJECTED** karena bukan *void element* dan tag tersebut seharusnya ditutup. Berikut merupakan tampilan luaran program.

```
• PS C:\Users\Asus\Desktop\ITB PENTING - Copy\semester 3\tbfo\TBFO-PDA-K01-PIN-KHIONG-HOK-88> python main.py pda.txt "studi-kasus-10.html"

Error warning:
    Error in line number 14
    expected an '
expected an '
'
| before '
```

Gambar 1.2.10.1. Hasil luaran program terhadap studi kasus 10

3.2.11 Studi Kasus 11

```
<html>
   <head>
       <title>Simple Webpage</title>
       <script>
           document.getElementById("demo").innerHTML =
"Hello JavaScript!";
       </script>
   </head>
   <body>
       <h1>The script element</h1>
       <a>Not going anywhere</a><br>
       <a href="https://www.google.co.id/">Might send you
somewhere</a>
       </body>
</html>
```

Harapan luaran program yang diharapkan adalah bahwa program akan menyatakan bahwa kode html yang dibaca merupakan program yang diterima atau **ACCEPTED**. Berikut merupakan tampilan luaran program.

```
● PS C:\Users\Asus\Desktop\ITB PENTING - Copy\semester 3\tbfo\TBFO-PDA-K01-PIN-KHIONG-HOK-88> python main.py pda.txt "studi-kasus-11.html"

Congratulations, No problems detected
```

Gambar 1.2.11.1. Hasil luaran program terhadap studi kasus 11

Bab IV

Tautan dan Pembagian Tugas

4.1 Link Repository GitHub

Pranala untuk menuju *github repository* dalam proses pengembangan program HTML *Checker* dengan *Pushdown Automata* (PDA) ditulis sebagai berikut.

https://github.com/ChaiGans/TBFO-PDA-K01-PIN-KHIONG-HOK-88

4.2 Link Diagram State

Pranala untuk menuju media penggambaran diagram *Pushdown Automata* (PDA) untuk membuat program HTML *Checker* terlampir pada link berikut ini. https://app.diagrams.net/#G1v1A6rtk5iZ4k8zckfYfKV3S071xGQoIh

4.3 Pembagian Tugas

No	Nama	Tugas
1.	Filbert	Memindahkan pda.txt ke dalam bentuk diagram, membuat HTML parser menjadi token
2.	Elbert Chailes	Merancang PDA secara keseluruhan dan dituangkan ke dalam pda.txt, membantu dalam pembuatan HTML parser menjadi token
3.	Farel Winalda	Memindahkan pda.txt ke dalam bentuk diagram, membuat program PDA parser

Bab V DAFTAR PUSTAKA

HTML TUTORIAL:

https://www.w3schools.com/html/default.asp

PDA REFERENCE:

https://www.geeksforgeeks.org/introduction-of-pushdown-automata/