*:96 Overheads

Part 2a: Solutions

More about this course about Internet application protocols can be found at URL:

`http://www.dsv.su.se/~jpalme/internet-course/Int-app-prot-kurs.html`

Last update: 2002-01-23 12:42

Exercise 1

Specify, using ABNF, the syntax for a directory path, like

`users/smith/file` or

`users/smith/WWW/file`

with none, one or more directory names, followed by a file name.

Solution

```
path = ["/"] *( directory-name "/" ) file-name
directory-name = 1*(ALPHA/DIGIT/"-")
DIGIT          =  %x30-39
```

is equivalent to:

```
DIGIT          =  "0" / "1" / "2" / "3" / "4" / "5"
                  / "6" / "7" / "8" / "9"
ALPHA          =  %x41-5A / %x61-7A   ; A-Z / a-z
```

Exercise 2

Specify, using ABNF, the syntax for Folding Linear White Space, i.e. any sequences of spaces or tabs or newlines, provided there is at least one space or tab after each newline.

Examples:

"→ →"

"→ ¶
→"

" ¶
→"

From: John Smith ¶
→ <js@foo.bar.net> ¶
(typed by Mary Smith)
Date: 24 Mar 2000

Assume SP = Space, HT = Tab,
CR = Carriage Return, LF = Line Feed

Solution

```
LWSP  = 1*( SP / HT / ( CR LF ( SP / HT )))
```

Exercise 3

Specify the syntax of an e-mail header field with the following properties:

Name: “Weather”

Values: “Sunny” or “Cloudy” or “Raining” or “Snowing”

Optional parameters: ";" followed by parameter, "=" and integer value

Parameters: “temperature” and “humidity”

Examples:

```
Weather: Sunny; temperature=20; humidity=50
Weather: Cloudy
```

Solution

```
weather-header = "Weather:" LWSP weathertype 0*2(parameter)
weathertype    = "Sunny" / "Cloudy" / "Raining" / "Snowing"
parameter      = ";" LWSP ("temperature" / "humidity" ) "="
                 1*DIGIT
```

Exercise 4

An identifier in a programming language is allowed to contain between 1 and 6 letters and digits, the first character must be a letter. Only upper case character are used. Write an ABNF specification for the syntax of such an identifier.

Solution

```
ALPHA = "A" / "B" / "C" / "D" / "E" / "F" / "G" /
"H" / "I" / "J" / "K" / "L" / "M" / "N" / "O" / "P"
/ "Q" / "R" / "S" / "T" / "U" / "V" / "X" / "Y" /
"Z"
DIGIT = "0" / "1" / "2" / "3" / "4" / "5" / "6" /
"7" / "8" / "9"
Identifier = ALPHA *5( ALPHA / DIGIT )
```