Programming Languages Assignment 2

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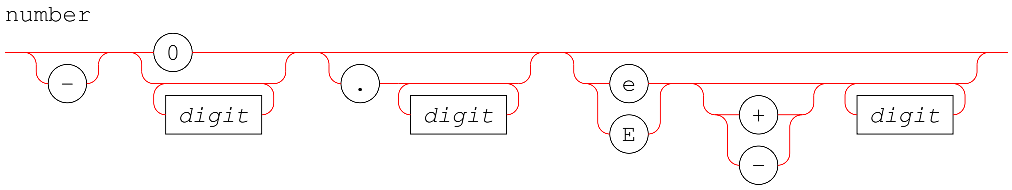
Abstract

In this report i will doucment my JSON Parser developed in Haskell

1 Question 1

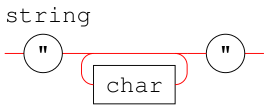
This section will detail the syntax of both the lexical and context free grammar used to define JSON data to be parsed from an input file. EBNF diagrams have been produced to visualise the grammar using Syntrax

1.1 Number Syntax



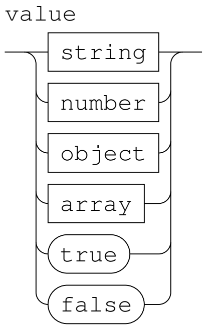
```
number ::= [”−”] (”0” | {$digit$}) [”.” {$digit$}]
[(”e” | ”E”) [”+” | ”−”] {$digit$}];
level=”lexical”.
```

1.2 String Syntax



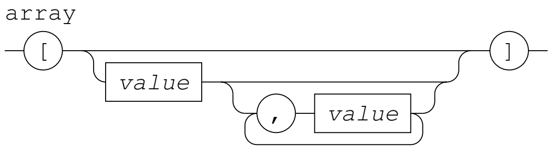
```
string ::= ”\”” {char} ”\””;
level=”lexical”.
```

1.3 Value Syntax



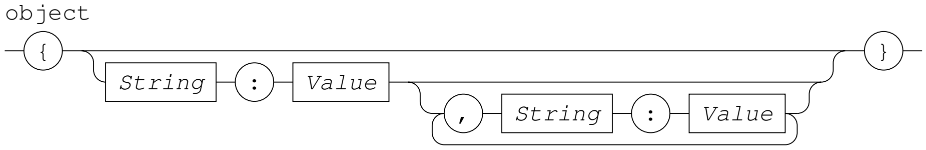
```
value ::= string | number | object | array
| ”true” | ”false”;
level=”context”.
```

1.4 Array Syntax



```
array ::= ”[” [$value$ {”,” $value$}] ”]”;
level=”context”.
```

1.5 Object Syntax



```
object ::= ”{” [$String$ ”:” $Value$
{”,” $String$ ”:” $Value$}] ”}”;
level=”context”.
```

2 Question 2

2.1 Definition of Data Types

Below is the definintion of my object data type that will be used to store ovjects parsed from JSON data

```
data Value = Str String
| Num Double
deriving (Show)

data Object = Object
{ identifier :: String
, value :: Value
} deriving (Show)

makeObject :: String -> Value-> Object
makeObject i v = (Object i v)
```