L-Università ta' Malta
Faculty of Information &
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Assignment Part 2 Report

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1 Question 1

1.1 How the problem was tackled

For this part, "char" was added to the keyword_type function within transitions.cpp. This was done so that "char" is identified as a keyword. Apart from that, the square brackets where added to the transition tablle and classifier table. The states that the square brackets led to where added to the token_type() function and to the list of accepting states. The updated part of the FSA is included as a figure.

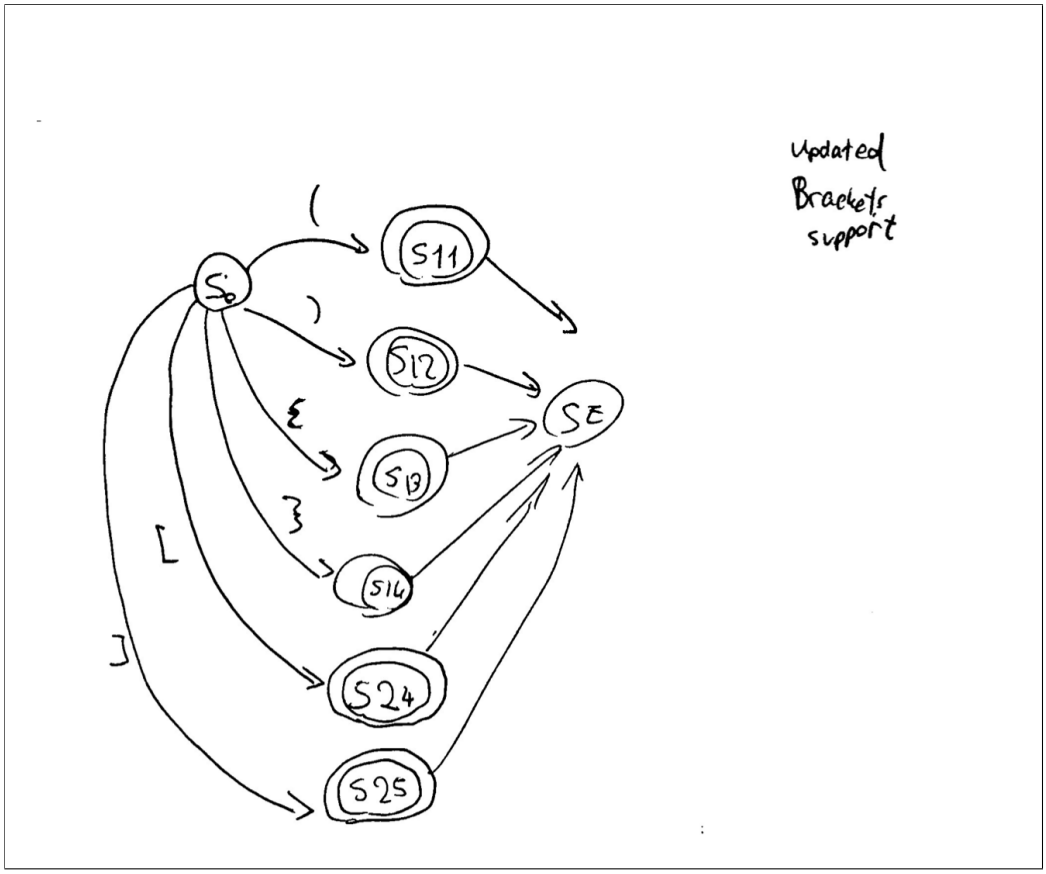

Figure 1: FSA (part concerned with updated brackets)

2 Question 2

For this question, "char" was added to the function parse_type(). This added support to initialize chars. As for the array, a function was created according

to the EBNF: "array ::= ¡identifier¿ '[' [integerLiteral] ']'"

The added function is listed as a figure. Furthermore, the array type was added tp the literal function.

Listing 1: "Parsing arrays"

```
AST* parse_array() {
    tell("array");
    AST* identifier_node = parse_identifier();
    if ( identifier_node == nullptr )   { return
       nullptr; }

    AST* l_square_node = parse_l_square();
    if ( l_square_node == nullptr )     { return
       nullptr; }

    AST* int_node = parse_integer_literal();

    AST* r_square_node = parse_r_square();
    if ( r_square_node == nullptr )     { return
       nullptr; }

    token new_token;
    new_token.type = array;
    return make_node(new_token, identifier_node,
       int_node);
}
```