uc3m | Universidad Carlos III de Madrid

DEPARTMENT OF COMPUTER SCIENCE
CARLOS III UNIVERSITY OF MADRID

Computer Science
Language Processors

Rules

- The duration of the test is **2.0 hours**
- Questions will not be answered during the test
- One cannot re-enter the classroom after leaving it
- The answers must be written using a pen (not a pencil)

Construct an LR (0) parser to evaluate sentences of the language corresponding to the following grammar:

```
1. S ::= A

2. S ::= A S

3. A ::= id = E

4. E ::= id

5. E ::= id + E

6.
```

1. **Calculate the canonical collection of configuration sets LR (0).**
2. **Represent the Automaton corresponding to the previous collection.**
3. **Obtain the parser tables LR (0). Indicates the problems they present.**
4. **Indicate the changes required on the previous table to obtain an SLR parser.**

The FIRST and FOLLOW sets for the non-terminal symbols of the grammar are:

Non-Terminal	FIRST	FOLLOW
S	Id	$
A	id	id $
E	Id	Id $

David Griol Barres, Antonio Berlanga de Jesús, Jesús García Herrero, Juan Manuel Alonso Weber