Q&A Session for Proglang Lecture Backup

Session Number: 1207881586
Date: 2020-9-15
Starting time: 14:39

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ANON - 14:41
Q: are we supposed to be able to see our quiz 1 grades? it says graded for me but only shows what I submitted
Priority: N/A
Konstantin Kuzmin - 15:15
A: For quizzes with manual grading component(s) yes. For fully autograded ones, like Quiz 1, you can check your grade in Rainbow Grades, once they are updated.

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ANON - 14:46
Q: How are we doing check-ins for lecture or mediasites?
Priority: N/A
Konstantin Kuzmin - 15:05
A: Check https://submitty.cs.rpi.edu/courses/f20/csci4430/forum/threads/31

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ANON - 14:48
Q: So being during live lecture counts as participation?
Priority: N/A
Konstantin Kuzmin - 14:50
A: Yes.

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ANON - 14:48
Q: By attending this lecture do I need to do anything to get checked in? Or will that happen automatically?
Priority: N/A
Konstantin Kuzmin - 14:51
A: No, it is sufficient and it will happen automatically.

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ANON - 14:49
Q: so is attendance being recorded automatically, so if you attend them your weekly check-in is fulfilled? Is there somewhere where we can see our "check-in" record?
Priority: N/A
Konstantin Kuzmin - 14:54
A: Yes, live lecture attendance is (or at least should be!) taken automatically by WebEx. You can check your attendance through Rainbow Grades, once they are updated after the end of the week.
ANON - 14:49
Q: by "them" i mean lectures
Priority: N/A
Konstantin Kuzmin - 15:00
A: OK, got it.

ANON - 14:50
Q: Afternoon Everyone. Question. In the first video, Lecture4_1, in the parsing table, why does expr matched with id predicts term term_tail? I have an idea but not quite sure.
Priority: N/A
Ana Milanova - ?:?
A: That's the only possible production for expr. And also, id begins the strings that term term_tail generates.

ANON - 14:51
Q: Is this being recorded?
Priority: N/A
Konstantin Kuzmin - 14:54
A: It is now. :)

ANON - 14:51
Q: Yes we can see
Priority: N/A
Konstantin Kuzmin - 14:55
A: Thank you!

ANON - 14:51
Q: Do we need to attend live lecture and office hour check-in to get full participation points?
Priority: N/A
Konstantin Kuzmin - 14:56
A: No, any of the two is sufficient but it needs to be done weekly. You can only get at most 1 point for attendance in each of the weeks.

ANON - 14:55
Q: Similar to the question above, do we need to do anything to get checked in for mediasite? Or you could see who watched the videos from your end?
Priority: N/A
Konstantin Kuzmin - 14:59
A: We are able to get the list of students who watched the
videos on Mediasite directly from them. We are keeping our fingers
crossed that data that we get from Mediasite is accurate. They do not
count students who just downloaded the video though.

ANON - 14:57
Q: if we have two or more variables in the sentential, do we place new
limbs to the left or right?
Priority: N/A
   Ana L. Milanova - 15:07
   A: We take the leftmost nonterminal (variable?) and place the
branches underneath. So in this case, we place to the left.

ANON - 15:00
Q: thank you
Priority: N/A
   Konstantin Kuzmin - 15:00
   A: You are welcome.

ANON - 15:02
Q: Yes we see
Priority: N/A
   Konstantin Kuzmin - 15:04
   A: Thank you!

ANON - 15:02
Q: I cannot hear the lecture, is it just me or everyone?
Priority: N/A
   Konstantin Kuzmin - 15:04
   A: If unable to get audio to come from the streams, you might
want to try disabling other audio devices. Webex doesn't respect your
choices in the speaker/microphone menu, but it will pick a new device
if you disable the one it was trying to output on.

ANON - 15:04
Q: So attending one live lecture per week can get full participation
point right?
Priority: N/A
   Konstantin Kuzmin - 15:04
   A: Correct.

ANON - 15:05
Q: https://mediasite.mms.rpi.edu/Mediasite5/Channel/
   programming_languages
Priority: N/A
ANON - 15:05
Q: Link for those who are looking for videps
Priority: N/A

ANON - 15:07
Q: Is this lecture 4? I cannot see lecture 4 on mediasite?
Priority: N/A
Konstantin Kuzmin - 15:19
A: Yes, Lecture 4. make sure you check Page 2 (use < and > buttons to navigate).

ANON - 15:08
Q: When will the quiz grades be available, mine says see grade on submitty but doesn't show me the actual grade
Priority: N/A
Konstantin Kuzmin - 15:18
A: You can check your grade in Rainbow Grades, once they are updated.

ANON - 15:08
Q: Oh there is a second page. So sorry, nvm
Priority: N/A
Konstantin Kuzmin - 15:19
A: np

ANON - 15:13
Q: So an LL(1) parsing table could correspond to a grammar that isn't LL(1)?
Priority: N/A
Ana L. Milanova - 15:13
A: Yes. We can construct an LL(1) parsing table for a grammar that is NOT LL(1).

ANON - 15:15
Q: So for expr =>* id what does the =>* mean? Because wouldn't first(alpha) be * if * was apart of * id?
Priority: N/A
Steven Haussmann - 15:23
A: =>* indicates that the arrow operator is being applied zero or more times (so, you're doing zero or more applications of a rule)
Ana L. Milanova - 15:24
A: Yes, what Steven says. The * associates with =>, not with id, means 0-or-more applications of the grammar rules.
Follow(A) is the set of terminals b (including $$) that can appear immediately to the right of A in some sentential form.

Because term_tail always appears at the end of the sentential form. ... term_tail$$. So only $$ is in the FOLLOW.

Because no expr can start with a * (* meaning multiplication operation). Expressions are all like this: id*id+id+id+id*id*id+etc. (expr =>* id... means expr generates strings that begin with id after the application of 0-or-more production rules. * here associates with =>, not with id.)

A is a specific nonterminal symbol. $\alpha$ is just any sequence of symbols, used to describe what FIRST and FOLLOW are.

A is a sequence of terminals and nonterminals. A is strictly just one nonterminal.

The * means the beginning of the expression, correct?
Steven Haussmann - 15:23
A: The * is part of the => operator; it's not one of the resulting symbols

ANON - 15:24
Q: What do you mean that \alpha is already an \epsilon (using 0 transitions)? Does this mean that \alpha is an \epsilon production?
Priority: N/A

ANON - 15:24
Q: Sorry, disregard, I thought \alpha was a nonterminal
Priority: N/A

ANON - 15:25
Q: Would it be possible to post the videos before lecture starts? I'm on a linux OS and can't run webex client and their web client can't play the media so I can't participate right now.
Priority: N/A
  Konstantin Kuzmin - 15:26
  A: Lecture videos are already being posted at least the day before the lecture: https://mediasite.mms.rpi.edu/Mediasite5/Channel/programming_languages

ANON - 11:28
Q: is the end of input marker implicitly part of every grammar? i.e, even if its not specified by the grammar, can we reference it?
Priority: N/A
  Ana L. Milanova - 15:30
  A: Yes. Parsers augment grammars with a special production start -> S $$, where S is the original starting nonterminal.

ANON - 15:27
Q: is there a difference between FIRST(+ term term_tail) and FIRST(term_tail)?
Priority: N/A
  Ana L. Milanova - 15:31
  A: Yes. FIRST(+ term term_tail) = {+}. FIRST(term_tail) = {+, \epsilon}. The latter takes into account both possibilities for expanding the term_tail.

ANON - 15:30
Q: I think I'm getting confused over some of our vocabulary. What does sentential form mean?
Priority: N/A
Ana L. Milanova - 15:33
A: When we start deriving strings, the intermediate forms we go through are called sentential forms. There was a definition somewhere in lecture 2 I think.

Steven Haussmann - 15:34
A: contrast that with a sentence, which is made up entirely of terminals. A sentential form is allowed to contain nonterminals as well, and thus is not completely derived yet.

ANON - 15:29
Q: is FIRST(term term_tail) = {id}?
Priority: N/A
Ana L. Milanova - 15:34
A: Correct.

ANON - 15:31
Q: Why isn't epsilon included in FIRST(A y)?
Priority: N/A
Ana Milanova - ?:?
A: Because Ay always ends on y, and therefore it cannot be empty (i.e., epsilon).

ANON - 15:32
Q: so epsilon will only appear in the terminal set if it's not followed by any other terminals?
Priority: N/A
Ana Milanova - ?:?
A: Essentially, yes.

ANON - 15:32
Q: epsilon is not included for the FIRST(Ay) because D does not include epsilon?
Priority: N/A
Ana L. Milanova - 15:32
A: Not included in FIRST(BCD) because D does not generate epsilon. FIRST(Ay) generates strings that end on y, so cannot be empty.

ANON - 15:32
Q: In previous slide I thought epsilon counted for FIRST, but in this slide it doesn't seem to be counted?
Priority: N/A
Ana L. Milanova - 15:34
A: What slide is it?
Q: For FIRST(BCD), why don't we count epsilon?
Priority: N/A
Ana L. Milanova - 15:35
A: Because D does not derive \( \epsilon \). So we'll always have \( w \).

Q: Why didn't you include epsilon in the other FIRST() examples? Don't they also generate epsilon?
Priority: N/A
Ana L. Milanova - 15:36
A: Technically this is correct. We can include \( \epsilon \)'s too, but it will be just \( \epsilon \).

Q: Why is epsilon in FIRST(A) but not FIRST(Ay)
Priority: N/A
Ana L. Milanova - 15:38
A: Because A can generate \( \epsilon \). But Ay always ends on y, i.e., it can't be ever the empty string \( \epsilon \).

Q: Nvm I think I got it
Priority: N/A

Q: Can \( \epsilon \) never appear in FOLLOW sets?
Priority: N/A
Ana L. Milanova - 15:43
A: Correct. \( \epsilon \) cannot be part of FOLLOW sets. It is a special symbol that can be part of FIRST sets; this designates that \( \alpha \) can derive epsilon.

Q: Why does follow(term_tail) not include id
Priority: N/A
Ana L. Milanova - 15:45
A: Because term_tail always occurs at the end of the sentential form, we have ... term_tail$$. We cannot have a sentential form where term_tail is followed by id.

Q: Since you say that FIRST(Ay) does not contain epsilon, I'm assuming
that epsilon is only counted if there's no other terminal that can be derived after it? Because technically, if you make A produce epsilon, then FIRST(Ay) will technically start with epsilon

Priority: N/A
Ana L. Milanova - 15:47
A: Yes, that's right.
Steven Haussmann - 15:54
A: We tend to ignore $\epsilon$ unless we're dealing with an empty string

ANON - 15:45
Q: so $\epsilon$ is in FIRST($\alpha$) iff ($\alpha$ =>* $\epsilon$)?
Priority: N/A
Ana L. Milanova - 15:45
A: Correct.

ANON - 15:48
Q: Why is $\epsilon$ counted in FIRST and not FOLLOW? I understand why it isn't counted in FOLLOW, why isn't that same logic applied? i.e. if prog -> S $$ and S -> $\epsilon$, why don't we say FIRST(S) = { $$ }
Priority: N/A
Ana L. Milanova - 15:50
A: You can see on this slide, slide 15. If we have $\epsilon$ in the First($\alpha$), that means that $\alpha$ can generate $\epsilon$. And it's important to know that we can derive $\epsilon$.
A: Follow up: FIRST(prog) includes $$, so we'll expand prog by prog -> S $$ on $\$$. 

ANON - 15:49
Q: Oh, nvm, then FIRST(prog) = { $$ } but FIRST(S) doesn't include that
Priority: N/A

ANON - 15:50
Q: Sorry for understanding my questions after asking them
Priority: N/A
Ana L. Milanova - 15:51
A: That's fine!

ANON - 15:50
Q: What if Alpha in A -> Alpha is Epsilon itself?
Priority: N/A
Ana L. Milanova - 15:51
A: Which one (slide) are you referring to?
ANON - 15:52
Q: I was referring to the Formal Definition of PREDICT Sets. What happens if Alpha in A->Alpha is Epsilon itself? Then does Epsilon Derives Epsilon?
Priority: N/A
Ana L. Milanova - 15:54
A: Then A derives \epsilon, i.e., we have A -> \epsilon. Then the predict set is made up of FOLLOW(A).

ANON - 15:52
Q: at the end of the video, can you show slide 16 again momentarily
Priority: N/A
Ana L. Milanova - 15:52
A: will do

ANON - 15:56
Q: To clarify, the PREDICT set S for some production A tells the parser to apply production A if it sees something in the set S as the lookahead token?
Priority: N/A
Ana Milanova - ??
A: Correct.

ANON - 15:58
Q: im confused for predict... you have to decide to use either FIRST or FOLLOW? And how is this decided?
Priority: N/A
Ana Milanova - ??
A: We use both in general. Say we are looking at A -> \alpha. We use FOLLOW(A) only if \alpha can generate \epsilon. Then it matters what terminal follows the nonterminal A because upon seeing that terminal we can expand by A -> \alpha.

ANON - 15:59
Q: yes; thankyou!
Priority: N/A

ANON - 16:00
Q: A little off topic, but if we are ever asked to prove that a grammar is unambiguous, can we just prove that it's an LL(1) grammar and is that enough?
Priority: N/A
Ana L. Milanova - 16:01
A: Yes that proves it.
Ana L. Milanova - 16:02
A: But there are a lot of unambiguous grammars that are not LL(1).

ANON - 16:01
Q: For PREDICT(A-->e), isn't the formula first(A)−{e} U follow(A)? So why is it just y, when the first(A) = {z, v, w}?
Priority: N/A
Steven Haussmann - 16:12
A: The formula is (FIRST(α) - {ε}) U FOLLOW(A) -- it's not FIRST(A).

ANON - 16:20
Q: Do you recommend we watch part 4
Priority: N/A
Ana L. Milanova - 16:21
A: Yes, I do... But it is independent and won't be on tests. I will plan to get back to Part4 in the Catchup lecture but we might not have time.

ANON - 16:26
Q: oh I missed that one. And here alpha is epsilon. got you. Thanks.
Priority: N/A
Ana L. Milanova - 16:27
A: Great!