Comp2209 Coursework

Report – Programming 3

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Challenge 1

My idea was to iterate through the puzzle and check on each iteration if the letter equals the starting/ending letter of a word in the wordlist. If there is a match the program would try the different searching methods created. If there is a match for the whole word it will be recorded in the output. If not it would be discarded and the program would continue iteration of the puzzle. I used pen and paper to sketch some of the search methods before coding them. Test it would simply check if the output equals the correct output.

Challenge 3

Here I used pattern matching and string concatenation in order to pretty print. Replacing an Expr with Macro name took more time and I created several functions for string replacement and string checking in order to do this. Testing required a function that would check if the output corresponds to a give string with the correct output which can be generated by challenge 4

Challenge 4

I started by reading a lot about parsers and the default functions used in them I created the default functions and started extending my code in order to parse expressions and macro expressions. I would recursively call functions until I parser the whole expression. Then I did checks for different invalid cases in order to make sure it won't parse them and it will return Nothing. Testing was done by comparing the output to the correct output. It featured some correct expressions a swell as some invalid.

Challenge 5

Here I read about CPS and what it really represented. I looked at the rules provided in the instructions and translated them into code. The functions would use the rules in order to transform the expressions into CPS.

During my research I used Hoogle and StackOverflow in order to gain more knowledge.