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Full time prediction: 80 hours

Date	Time Spent (Total)	Main Efforts
-3/6	12:28AM-2:05AM (1:37)	-first real coding attempt, working in Dev PASCAL. Got basic structure of functions, though still need much editing. Need Syntax checks. Got to upper working.
-3/9	8:13PM-8:39PM (2:03)	-Finished PASCAL encrypt
-3/10	4:53AM-6:13AM (3:23)	-Finished PASCAL decrypt
-3/10	8:40PM-9:56PM (4:39)	-Fixed PASCAL decrypt, finished PASCAL code
-3/10	10:13PM-10:22PM (4:48)	-Tidied up PASCAL/ officially finished PASCAL
-3/26	1:41PM-3:08PM (6:15)	-Started Fortran, basic skeletons/trying to understand the language
-3/26	7:44PM-9:25PM (7:56)	-Still learning/editing Fortran, some code progress, not much
-3/26	10:32PM-12:04AM (9:28)	-Break through, actually understand the Fortran, iz gud deel

-3/27	9:30PM-9:53PM (9:51)	-Noticed a Boolean issue, fixed it in PASCAL and implemented in Fortran, think I have encrypt for Fortran
-3/28	7:53PM-8:26PM (10:24)	-Think I have the skeletons of the functions done in Fortran, not sure
-3/29	7:34PM-8:14PM (11:04)	-Fortran to upper, resolved some of the designs of the functions
-3/29	9:23PM-9:56PM (11:37)	-Actually got functions working
-4/1	7:21PM-8:09PM (12:25)	-Fortran basically done, though will have to look into formatting when I have time
-4/3	1:46AM-4:14AM (14:53)	-Fortran is done
-4/4	12:03AM-2:52AM (17:42)	-Got a Scala Compiler working
-4/12	8:37PM-12:47AM (21:52)	-Scala Compiler stopped working, started using online compiler for Scala, encrypt and decrypt done for Scala
-4/13	3:09PM-4:43PM (23:26)	-Scala finished
-4/13	7:08PM-9:01PM (25:19)	-SML encrypt and decrypt done

-4/13   9:31PM-9:55PM (25:43)   -stuff

-4/13   11:49PM-12:27PM (26:21)   -SML finished

-4/14   3:22PM-5:21PM (28:20)   -started Erlang, learned basics of language, no major progress

-4/14   7:15PM-8:09PM (29:14)   -More trying to understand the language, not sure

-4/14   8:23PM-9:33PM (30:24)   -Erlang encrypt done.

-4/15   2:19AM-4:44PM (32:49)   -Erlang finished, fixed error noticed in all finished languages/cleaned up logic

-4/19   1:34AM-4:14AM (35:29)   -Lisp encrypt and decrypt done

-4/19   7:19PM-9:06PM (37:16)   -Lisp finished

-4/22   12:55AM-5:57AM (42:18)   -Beginnings of COBOL

-4/22   11:57PM-1:35AM (43:56)   -Basic COBOL Encrypt

-4/23   1:31PM-1:53PM (44:18)   -stuff

-4/23   2:26PM-3:08PM (45:00)   -stuff

-4/23   10:25PM-10:52PM (45:27)   -COBOL subroutines working

-4/24   12:39AM-4:19AM (49:07)   -COBOL Finished, project complete

Based on how the languages themselves looked, I am starting with PASCAL. Honestly it does not seem like a terrible language, though we will see when I am done. Just need to start moving on this it would seem though I feel PASCAL should be done by this weekend at the latest.

Finished the Encryption for PASCAL, realistically almost had it done, but had to realize/fix some issues (forgot to put a clause for spaces and such). Went well for the first part, but had other things to get done.

Decrypt in PASCAL through me for a loop (pun intended). Honestly, not sure why it was so weird but in the end, it is finished, so it works for me. Are early hours the best hours to program? Not really sure, but it seems it is when I get the most done. I'll take it.

Messed up decrypt based on how strings are handled, actually felt finished, but went back and cleaned/corrected code. Moving on to something, not sure what yet.

Blegh, Fortran. Honestly, really hate it as it seems a bit ridiculous and am still not sure where I am going at this point with it, too many errors, so I guess it is time to work line by line.

Fortran is not going as smoothly as PASCAL did and, though I did not expect it to, I thought I would be actually making progress.

Made some actual progress, mainly most likely due to the fact that I found a compiler I actually like to use, so the code seems smoother. We shall see in the morning.

Coding worked out well for Fortran this session I think, though I must say, I was not expecting else to require the else on another line, that was interesting. Otherwise, progress being made.

Hit the 10 hour mark, making quicker progress than I was expecting, though that being said, I definitely feel like I am quite a bit behind. Hopefully, work slows down overall, just so I have more time for this, otherwise I am just going to have to make time. Starting to like Fortran now that I understand the syntax more. Not terrible.

Writing some Fortran when I have some time, trying to get the function to not have as many errors. Success sort off, still have some major issues.

Coding at an off time, trying to get my functions actually working and I eventually had success with Fortran. Thought I liked the language, was wrong when it came to actually using functions.

Obnoxious girl on train kept moving chair the entire time in the seat ahead of me. Had to get by with her unable to sit still *le sigh.* Essentially done with Fortran now, but I need to look into how to format certain pieces of code when I have internet connection, otherwise, I would probably be wasting my time guess-formatting. Overall, happy with the progress, though it is almost the Dawn of the Third Day.

Fortran formatting is so painful, it physically makes me nauseous. At least it is over with so, I guess maybe I will do some other ridiculous language next? Either way, need sleep now.

Scala should not be a tough language, though just getting an IDE to work was the most painful subject ever. Could not get it to recognize the compiler or the library was the main issue, on 3 different IDEs. That was just ridiculous.

All my efforts getting a Scala IDE were pointless and I am now relying on a Notepad++ and ideone.com for Scala. Had a LOT of issues trying to figure out string manipulation, and honestly, could be done with Scala right now, probably, but I feel there are some improvements that need to be made and still have to do solve. Shouldn't be too bad overall, though based on what has been going on, formatting might suffer, we shall see.

Getting solve to work was multiple issues, had to figure out println formatting, and realized I had to reset the counter of 'i' was a significant part of my time and also learning Scala input output, which I think is actually efficient once properly understood. Honestly, for the amount I hated doing Scala because of its weird formatting at times, it honestly was an acceptable language. Next to SML I guess.

SML started off ok, then turned horrible then back to ok. Honestly started with the idea of map() then that didn't work, then when to normal functions, but that was awful too. Edited my functions for map() to work, and it did so, which was wonderful in all honesty. solve could be an issue, it looks off/terrible to try to implement in SML.

SML really seemed terrible in the end, though done is better than leaving it for later, I guess. I doubted it would take that long to finish, but it was harder than it appeared.

Must say, already not enjoying Erlang. It just does not seem like a language that should be used, ever. Admittedly, that is a bit harsh, but at the same time, it does not seem like the format of the code is useful in most situations. Might actually do Lisp first, not sure yet.

Decided to stick with Erlang, and though I honestly was having many issues, I realized after staring at lines of code trying to understand how it works, that one, I am horrible at Erlang, and two, I need to really read the errors I was getting. Part of the issue was my code, and the other part was that I was not noticing that I was spelling encrypt wrong in the –export. I had just assumed my code was giving the error, but it was actually my spelling. Either way, huge breakthrough, should get Erlang done by tomorrow now.

Decrypt was not bad as, it is just simple changes; I just was on the way out which meant I could not make them. Solve though, took me a while to understand/implement. I like the idea of functional languages, but most of the time, the really throw me for a loop. In the end, I kind of liked Erlang, as though it is not as easy as PASCAL or in some cases Fortran to understand, it really does seem like a mix of Fortran and SML, which isn't all bad. So far, I think I liked Scala the least, though that is not to say I hated it, it is just not as good as, say PASCAL or Fortran in my opinion. I feel the worst part of Erlang is that it broke two of the main principles I wanted to maintain going into this project, formatting-wise. I wanted to maintain solve as its own function, instead of simply calling encrypt/decrypt within solve as though it would not be as efficient line-wise or simplicity, it would allow for the function to act as a standalone, which in my opinion is preferable. The other issue it caused was also with solve, being which direction(incrementing or decrementing) was the list printed in, as I personally feel that it should end in the "00" case as an end point, instead of going to "26." After trying for about 45 minutes, I could not think of a way to make it viable. In both cases, it was essentially a letdown not to maintain my original goal, but I would rather have completed, working programs, than almost finished, personal goals. Still worried about COBOL, though I figured, that I would do that last; get the "easy" languages first, as they are all worth the same points. I really thought I would be further along time-wise, I guess

I doubted some key figures, though we will see in the end. At this rate, I doubt I will break 50 hours.

Though Lisp would be terrible, but after figuring out the basis of the syntax, it honestly has been one of my favorite languages so far. Though the notation is weird, I honestly get the idea behind it and think it is a breath of fresh air compared to like, Erlang. Still have to finish it, but I doubt it would take more than 2 hours, the main issue being formatting, but even then, it should be fine. COBOL will probably be an issue however, we shall see.

Lisp solve took much longer than I thought it would. Had some real issues with the logic, and in the end, my format looked a bit horrendous attempting to guarantee reliant functionality without the need of the original functions. It was especially an issue with the attempt to print the shifts in order while including the proper 0 case and 26 case. It looks terrible but it gets the job done. I also had an issue of constantly forgetting the format for most statements which came back to bite me at least 4 times just working on solve. It could be worse; I could have just finished my first language or something ridiculous along those lines. Whatever, time for COBOL, or tomorrow being time for COBOL. Same difference.

Already hate just working on COBOL.I spent over 5 hours essentially just getting down the basics of the language and the majority of the time getting a non-finicky compiler that didn't change answers when the input was the same (Worst feeling ever when you run code twice with the same input and you get different outputs). It should not be that tough now that I have made some progress but at the same time, I know it will be a pain.

Honestly still struggling with COBOL. Notation is iffy and just consistent information is almost nonexistent. Probably spending tomorrow/today doing all of it as I have time, I just hope I can get it done.

FINISHED!

Feelings overall on the languages based on what I have learned from best to worst:

-Lisp

-Fortran

-Pascal

-SML

-COBOL

-Erlang

-Scala

Time- Predicted 80 hours, Actual 49:07

      I originally went into this assignment believing that this would be kind of hard, and that the languages would not be as similar as they felt, which was the main reason for my time. I gave myself 10 hours per language, as I did not know any of them other than SML, and even then, I wasn't great at it when we started. I figured an extra 10 hours could be good for breathing room and the main plan was to not go over the time. I based it on the idea of it is better to get something done early than late, but as I started working, I noticed how fast I was actually getting things done, so in my head, I doubted I would even break 50 hours. With COBOL, I almost hit that time, I really did struggle with understanding the basic syntax and finding references that made sense and were consistent. There was also the issue of the compiler, which on more than one occasion wasted a decent amount of time. Overall, my prediction seems a decent chuck off, but at the same time, I feel like it wasn't as bad as I thought it would be.

Overall thoughts and such

I feel like deep down, most of the languages have a more similar structure than I would have predicted going into the project and that was honestly one of the biggest messes I ran into at times. The major similarities probably came from Erlang and SML in regard to each other, LISP compared to COBOL, and also PASCAL, Fortran and, Scala as a set of similar languages. I feel like after looking at that break down, it even makes sense in a way. It also seemed like other than the specifics of the grammar, if two languages of a set were compared, it could almost be blurred as to which is which. Honestly, this at least proved to be helpful in teaching me some pretty consistent coding structures across different languages, I just feel my structure still needs some work in some regards, though they may just be the look of Caesar ciphers in different languages and just formatting for a specific language. Would I use these languages again? Quite possibly all other than Scala, which I don't think is how I should feel about it, I just think it is all of the IDE issues I had, and the formatting to make it more Scala instead of Java. Must say though, overall enjoyable experience.