Developing Soft and Parallel Programming Skills Using Project-Based Learning

Spring 2019

Group Name: ATLAS-SQUAD

Team Members: **Sai Rampally (Team Coordinator)**
Jason Poston
T'Avvion Jones
Zeak Sims
Shili Guan

Planning and Scheduling

Assignee Name	Email	Task	Duration (hrs)	Dependency	Due Date	Note
Sai Rampally **(Coordinator)**	srampally1@student.gsu.edu	Task 1, 2, 4, 5, & part of 6! Slack account, Github account, Youtube channel.	3.5 hrs	Create Github, Slack account and youtube channel ASAP.	02/08/19	Send the team login info of Github..
T'Avvion Jones	Tjones172@student.gsu.edu	Task 3, 5, 6. Slack account, Github account. Download Raspberry pi for future use.	2 hrs	None	02/08/19	All tasks must be finished and send to me by 2/7/19. Excellent: (100%)
Shili Guan	sguan2@student.gsu.edu	Task 3, 5, 6. Slack account, Github account. Download Raspberry pi for future use.	2 hrs	None	02/08/19	All tasks must be finished and send to me by 2/7/19. Excellent: (100%)
Zeak Sims	zsims2@student.gsu.edu	Task 3, 5, 6. Slack account, Github account. Download Raspberry pi for future use.	2 hrs	None	02/08/19	All tasks must be finished and send to me by 2/7/19. Excellent: (100%)
Jason Poston	jposton1@student.gsu.edu	Task 3, 5, 6. Slack account, Github account. Download Raspberry pi for future use.	2 hrs	None	02/08/19	All tasks must be finished and send to me by 2/7/19. Excellent: (100%)

TeamWork Basics

Task 3:

Q1. What to do to get the task accomplished and the team members' satisfaction high?

In order to achieve these two things while working as a group. First, the group members should get to know each other and what their weakness and strengths are. Then set some ground rules that everyone in the group agree on and use a facilitator. When any common problems arise knowing how to solve them or how to avoid some common problems. The last, but the most important one is: keep communication open. Communication in a teamwork basic is very important. When a team has these things, the team is going to be complete the tasks fast and satisfaction is high.

Q2. Answer all the questions in the Work Norms, Facilitator Norms, Communication Norms using your own words and your own context.

-Work Norms

How will work be distributed?

The work should be distributed accordingly to the team members' strength while fairly to be sure everyone has the similar work load.

Who will set deadlines?

The team leader sets up the deadline on which the team members have no problem with.

What happens if someone doesn't follow through on his/her commitment?

First, the team leader should ask that team member why that occurred. Then asking what is his/her progress. Asking the rest of the team members for helping to complete together if still can.

How will the work be reviewed?

The work should be reviewed as a group.

What happens if people have different opinions about the quality of the work?

After reviewed the work, if majority of the members are disagreed the work. First, find out why they don't agree, and the group can discuss some of the solutions or better ideas, if the work needs to make change or not by the group voting.

What happen if some people have different work habits?

It's ok that way because everyone has their own schedule and pace, as long as their can complete their tasks before the deadline.

-Facilitator Norm

Will you use a facilitator? How will the facilitator be chosen?

Yes. The facilitator can be the group leader or chosen by the group or be volunteer by someone who is well organized, strong responsibility and no biases.

Will you rotate the position? What are the responsibilities of the facilitator?

Yes, in order someone in the group can do it better and everyone can have the experience on that position, so they can apply the skill in future. A facilitator helps the team focus on the task and keep on track to finish the work within the time farm they agreed on. Encouraging all the team members to participate in the group. When the team is stalled, give some suggestion of alternative procedures. The facilitator also helps the group members to confront any problems occurs. As well as to clarify and summarize any decisions the team make.

-Communication Norms

When should communication takes place and through what medium?

As soon as the team is formed. The communication can be in person and through online communication tools such as email, group message, or over the phone. Whichever that the team members are preferred. If someone in the group prefer phone communication while majority prefer email. The group can communicate through the email that first, then the leader or the facilitator should contact the others and keep them up to date with the information, but when a decision need to be make immediately, the communication should be through the majority's prefer medium.

-Meeting Norms

What is everyone's schedule? Should one person be responsible for coordinating meetings?

When it comes to schedule, everyone will has different time is available. When the meeting is held, the time should be fit for as many members' schedule as possible. Everyone in the group is responsible for coordinating the meeting.

Do people have a preference for when meetings are held? Where is a good place to hold meetings?

In order to find out what the members' preference of time are, the team should communicate and then pick the best time for the team. The meetings should be held on somewhere that is quiet and less or not distraction such in library or coffee shop.

What happen if people are late to a meeting?

Let the people have a seat and join the meeting quickly, and later team leader should have a conversation with the people whoever is late to keep them inform for whatever there are missing before they came in.

What happen if a group member misses a meeting? What if he/she misses several meetings?

If someone in the group misses a meeting, the leader should contact that person and find out why and then inform what information he/she misses for that meeting. If he/she misses several meeting, then as always the leader should find out why that person is missing for the meeting and if he/she will be able to finish the work he/she is assigned for, and if that is just short term or long term problem, if that's a long term problem maybe the leader should assign another task for he/she that is the best fit for what he/she is going through and also give some helps by the group members to make sure that person doesn't get left out. If the problem still occurs, the situation should be report to the instructor.

-Consideration Norms

Can people eat at meetings? smoke?

No, for professional purpose and in case of distraction can be created by eating and smoking. These things should not be allowed.

What happen if someone dominating the discussion?

When this occurs, the group members can politely give a hint to that person and then let someone else in the group has the opportunity to speak. We can say something like "All the ideas you just mentioned are great, I have written down all what you said, so what do you think about what A(the person who is dominating) just said? " while A stop talking, Then quickly turn the attention to person B. If that still can help the situation, then the leader or one of the group members can politely talk to A in private and let A know that his/her enthusiasm for participation is great and appreciated, but we should let other have the time to get involved as well.

How can norms be changed if some is not comfortable with what is going on in the team?

First, the group need to find out what is the thing that person isn't comfortable with and why, then accordingly to make some change to make that person be comfortable while other group members are agreed on the change will be made. If the problem still can not be solved within the group, then the situation should be informed to the instructor.

(4p) Overly talkative: There are four different types of personalities. An (a) type is very eager and sometimes can not hold back there excitement. (b) types can be considered show-offs, but this does not necessarily mean that they are knowledgeable about the subject matter. (c) types can be considered expert and are just excited to share information.(d) types are people who can not read the room very and can disregard other team members responses.

It can be difficult to handle these specific personalities, but there are two main ways to go about diffusing a situation. the first option is to us humor to lighten the mood and direct conversation words other members if one member is aggressively dominating the conversation. If the problem is bigger then that and a member of your team constantly shows this type of behavior, it might be time to take them to the side and have a direct conversation about the issue and how it is affecting your team as a whole.

Argues: Some people will question every aspect of the group, the project, and the groups process.

This personality is not always bad to your project, but it can negatively affect your group. critical analysis of your group process can help realize flaws and can help with efficiency. On the other hand, being to critical of your teammates can lead to personal conflicts arising between teammates. In this case, the best option is to have an intervention to let this person know how their behavior is affecting the team.

(4p) Sometimes your group may have a hard time coming together and deciding on something unanimously. It is important to get input from all the team members when you can not come to a

final decision. To do this effectively, go around a hear everyone's idea, then vote on the best ones. Then with the most several most popular idea, take the time to analyze the similarities, difference, cons and vote again. You can repeat this process until you have decided on the best idea.

Question: What should you do if person may reach a decision more quickly than others and pressure people to move on before it is a good idea to do so?

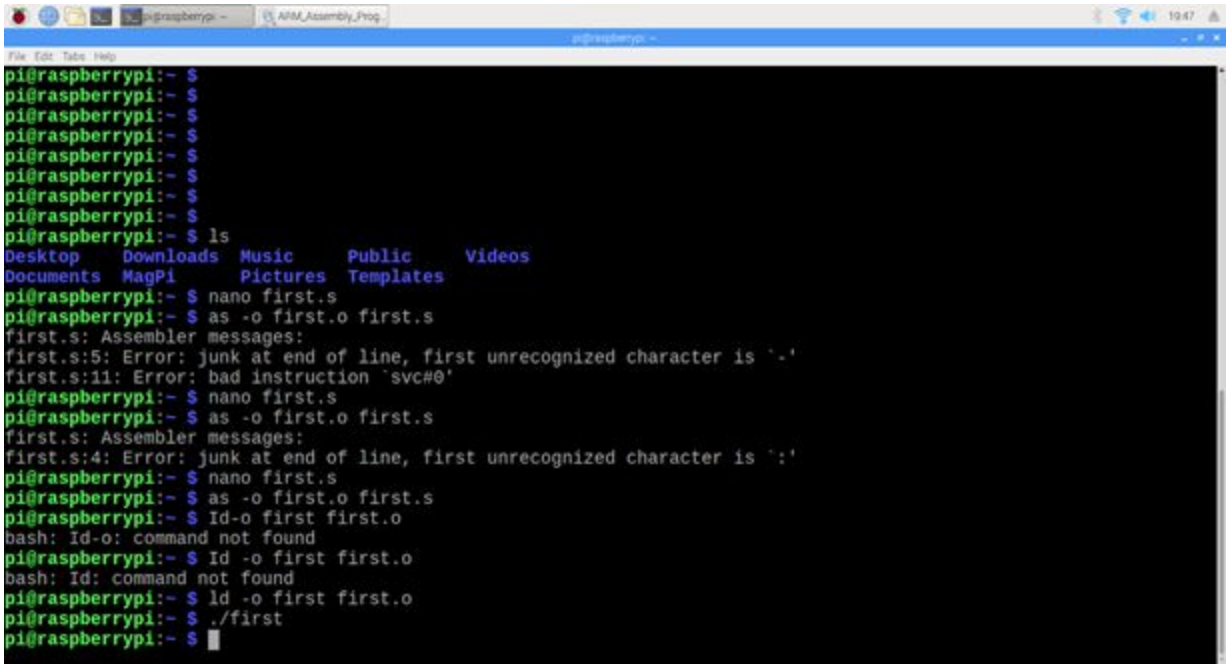
Everyone in the team should first hear the person out and try to understand how they came to that decision. The person may have experience in regards to the situation and knows how to handle it. Thus, they should explain their decision to the best of their ability to make sure everyone understands. When considering the person's choice, some valid questions should be asked such as; "Is there anything that we may be missing or overlooking?". The team should be unanimous in their final decision and all questions and concerns by anyone should be cleared up. The most important thing is that everyone is on the same page before moving forward.

(3p) What happens if most people on the team want to get an "A" on the assignment, but another person decides that a "B" will be acceptable.

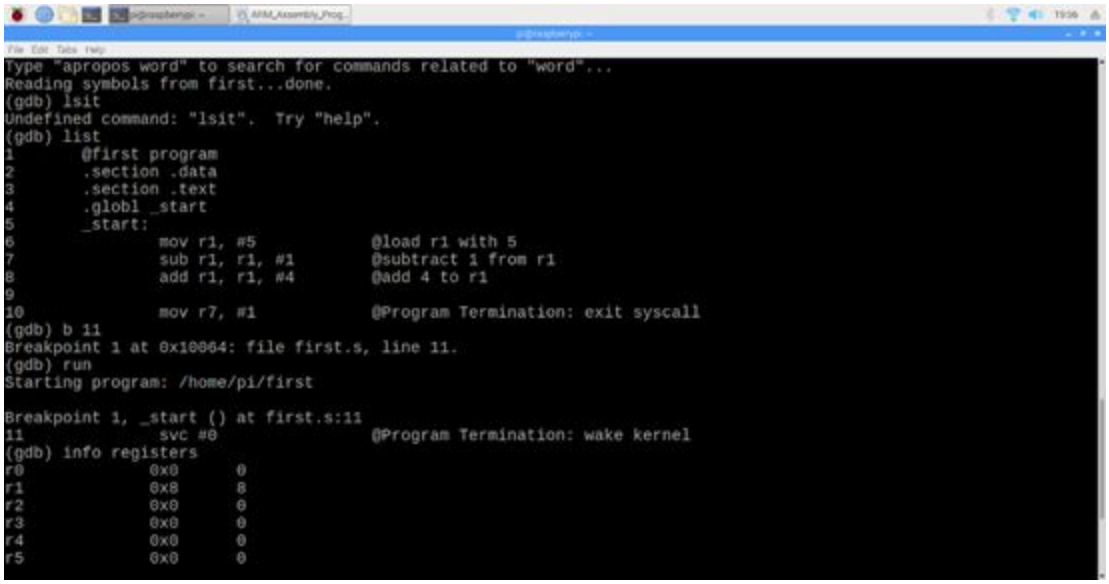
First and foremost, everyone in the group should want to get an A and put their best work out on display. We are in here to learn in class, and from each other, and in doing that we should strive to be the best we can possible be. If someone in the group feels like a 'B' is acceptable work, we as a group must convince them otherwise. We don't want to put anyone's grade in jeopardy due to an individual settling for 'B'-like work. The Coordinator for the project should have a 1-on-1 with the individual and make sure they know how important this means to the group, even if for themselves personally, a B is satisfactory. Hopefully, after this and maybe some encouragement from the others in the group, said person will realize that his contributions impact not only himself, but the team.

Raspberry PI Installation and ARM Assembly Programming

Since I'm the coordinator, I chose to work on this part of the project. My team collaborated their ideas with me to ensure the smooth transition of assembly programming. After downloading the Raspbian software, I set up the pi, opened the terminal, and typed the following command "nano first.s", this will open the nano editor, where I can edit, write, and save code. I then wrote the sample code which was given to me by Dr. Mussa on to the text editor. After writing the sample code, I exited back to the command line/terminal, and typed the following command "as -o first.o first.s", this will assemble the file. Now to link the file, I typed the following command "ld -o first first.o" , this will link the file to the assembler. I then executed the program to see the output/result.

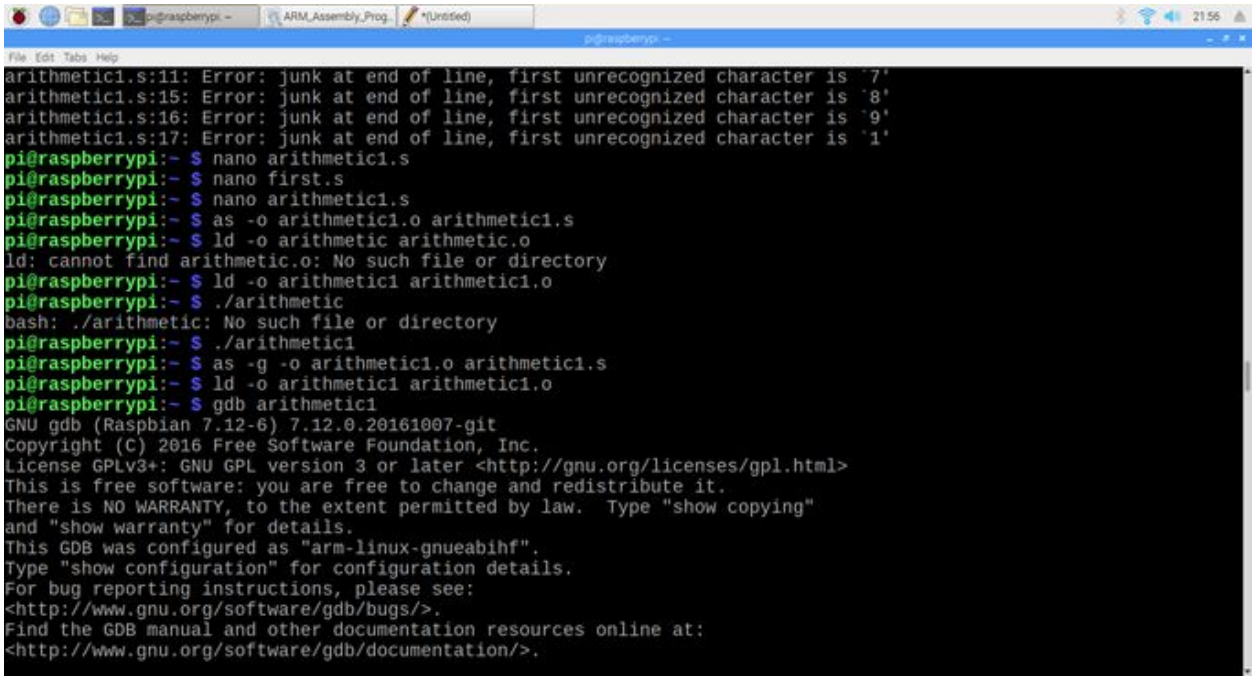


When I executed the program, I didn't see any output because I need to debug and add a flag "-g" to the assembler command line **"as -g -o first.o first.s"**, then the symbols and line numbers of the source code will be still/put so the debugger will be able to link the machine code to the source code line by line. When this process takes place, the output will be executed.

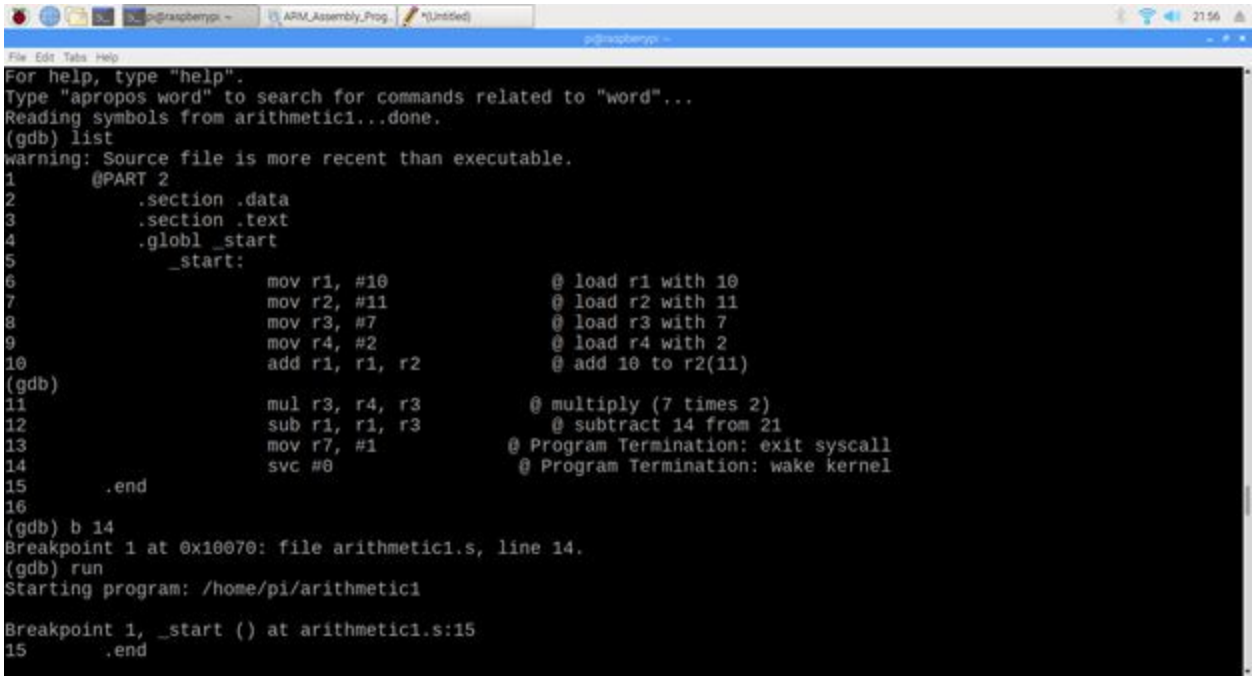


As you can see in the above screenshot, I launched the debugger (gdb first) and set up a break point using the command (gdb b11). Then I typed “gdb run” to run the program. Finally, I called on the “gdb info registers” to examine the CPU registers.

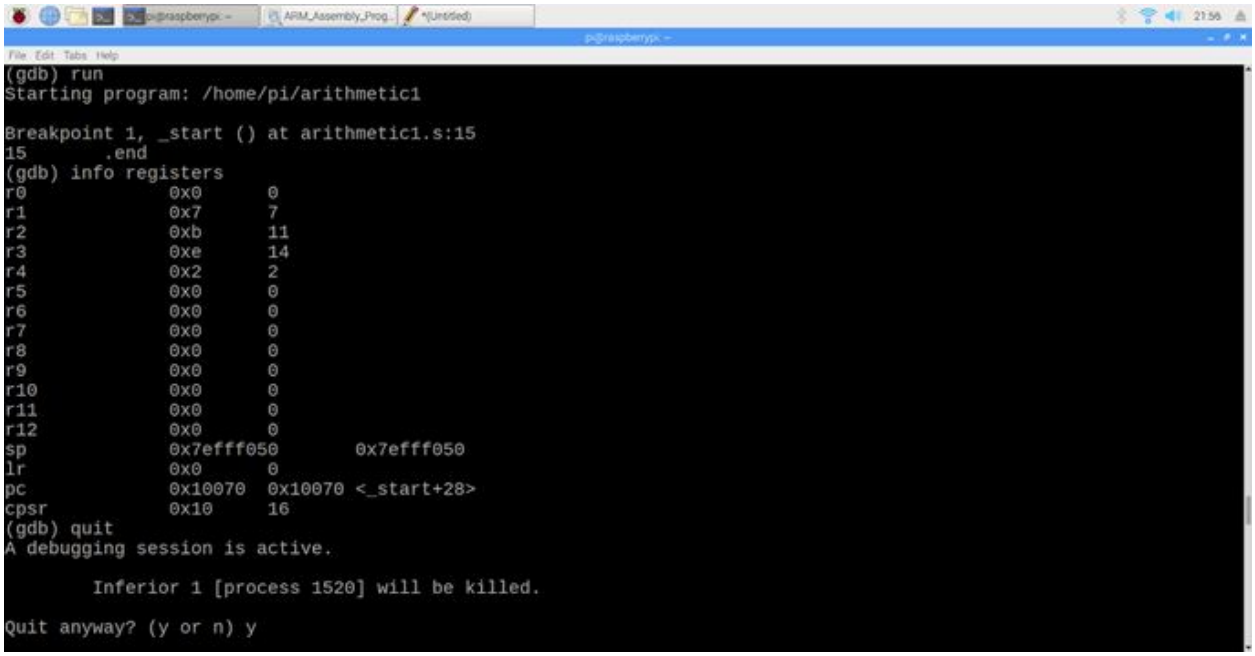
Now for part 2, I followed the same exact procedures as I did in part 1. I typed the following command “nano arithmetic1.s”, this will open the nano editor, where I can edit, write, and save code. I then wrote code on to the text editor. After writing the code, I exited back to the command line/terminal, and typed the following command “as -o arithmetic1.o arithmetic1.s”, this will assemble the file. Now to link the file, I typed the following command “ld -o arithmetic arithmetic1.o” , this will link the file to the assembler. I then executed the program to see the output/result.



Now when I executed the program, I know I'm not going to see any output because I didn't debug and I need to add a flag **"as -g -o arithmetic1.o arithmetic1.s"** so I launched the debugger (gdb arithmetic1).



As you can see in the above screenshot, I launched the debugger (gdb arithmetic1) and set up a breakpoint using the command (gdb b14). Then I typed "gdb run" to run the program. Finally, I called on the "gdb info registers" to examine the CPU registers. I see the register name, contents in hex, and contents in decimal. I cross checked the values with the program I wrote on the nano editor.

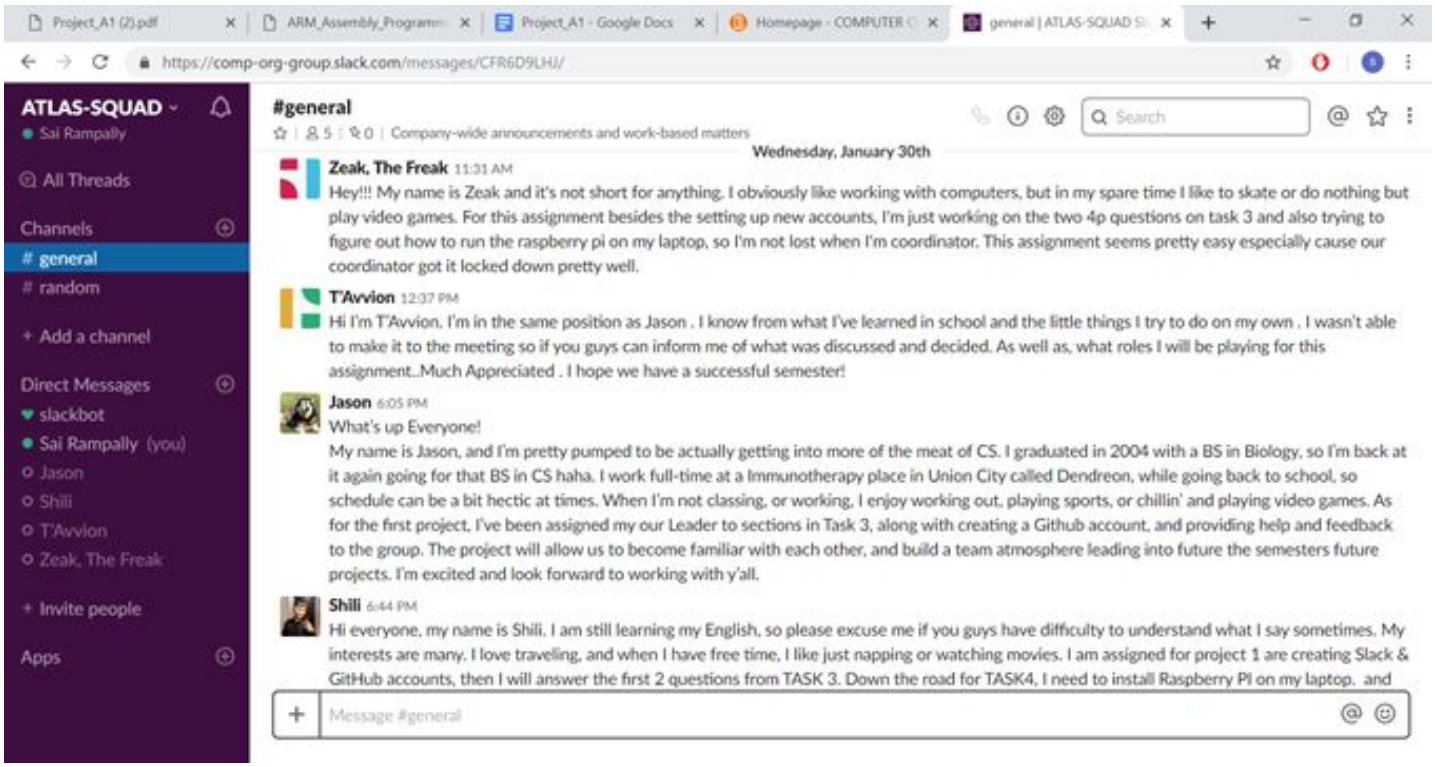


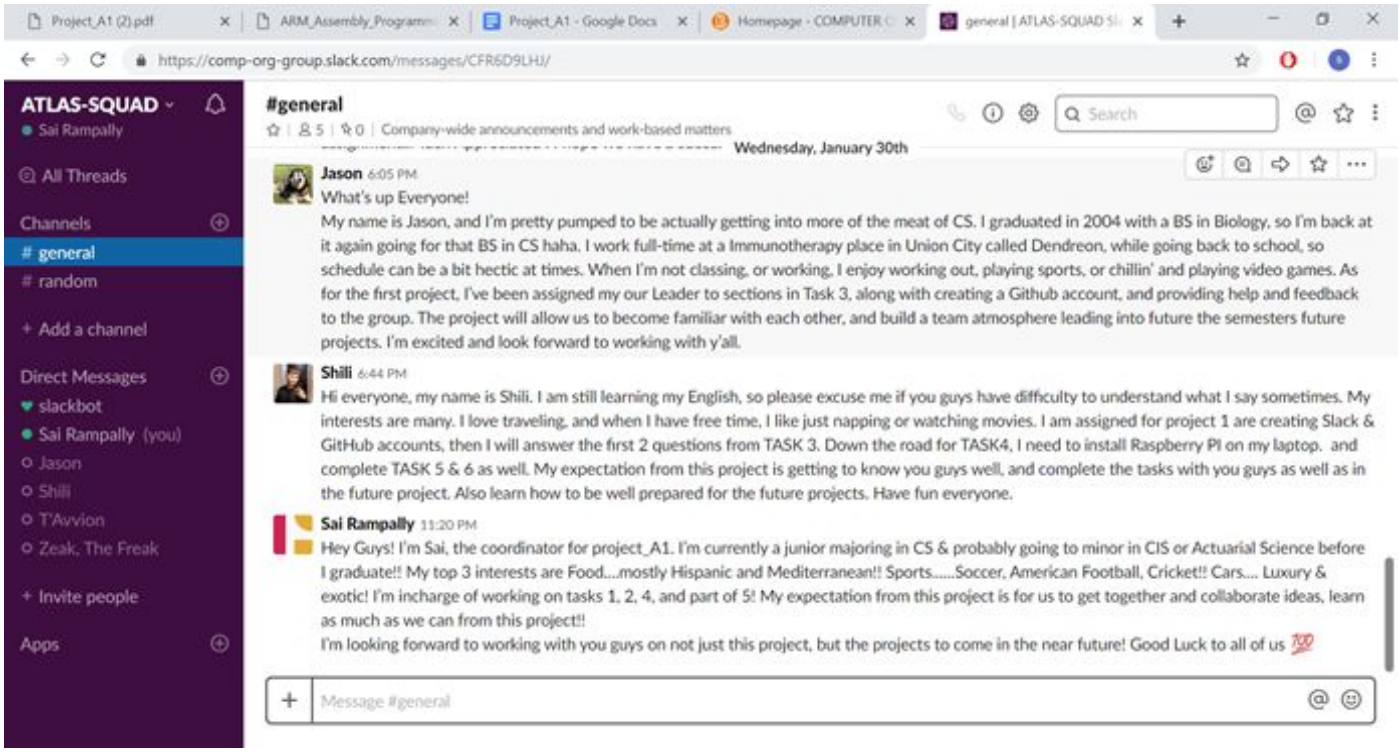
Appendix

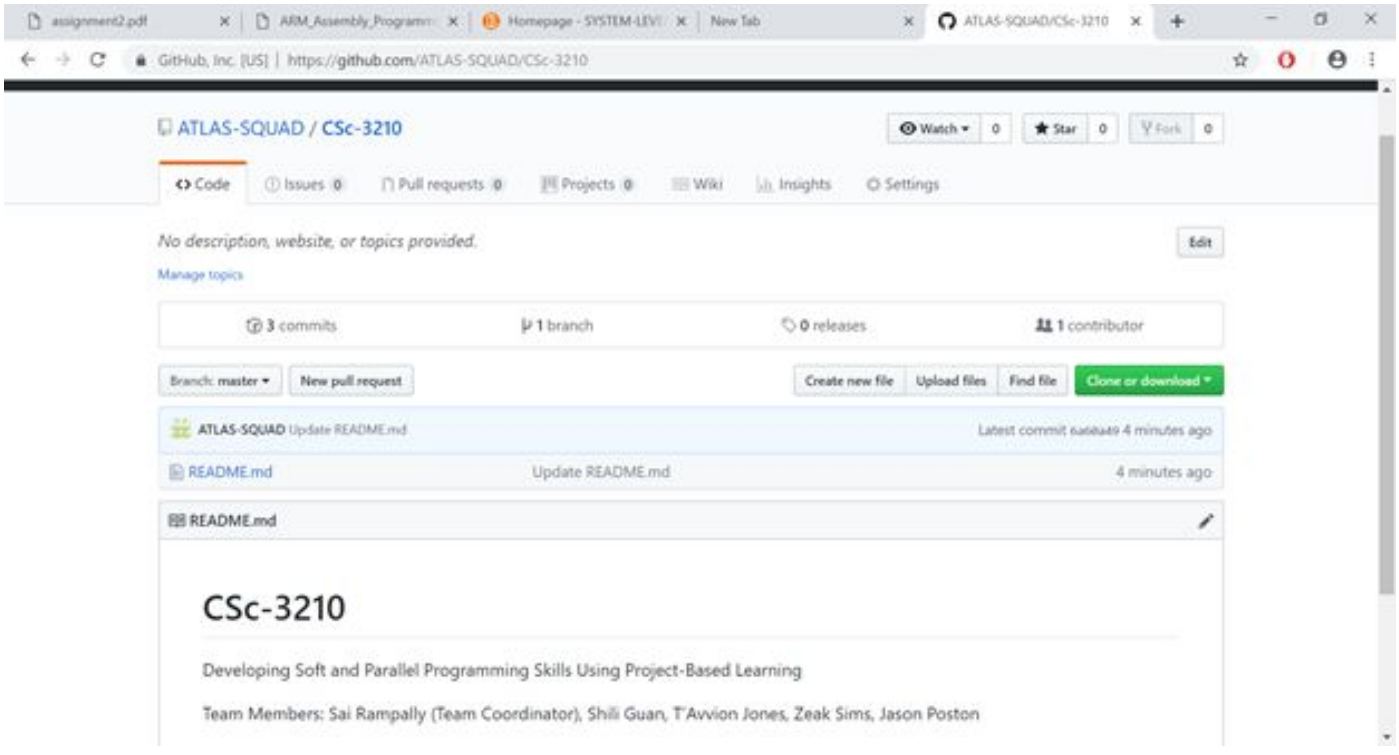
Slack Account: https://atlas-squad.slack.com/messages/CFR6D9LHJ/

GitHub: https://github.com/ATLAS-SQUAD/CSc-3210

Youtube Channel: https://www.youtube.com/watch?v=mRHkm9aPAd4




Project_A1 (2).pdf
ARM_Assembly_Programm
Project_A1 - Google Docs
Homepage - COMPUTER
general | ATLAS-SQUAD Sl
https://comp-org-group.slack.com/messages/CFR6D9LHJ/
ATLAS-SQUAD
Sai Rampally
All Threads
Channels
general
random
+ Add a channel
Direct Messages
slackbot
Sai Rampally (you)
Jason
Shili
T'Avvion
Zeak, The Freak
+ Invite people
Apps
#general
Company-wide announcements and work-based matters
Search
Wednesday, January 30th
Jason 6:05 PM
What's up Everyone!
My name is Jason, and I'm pretty pumped to be actually getting into more of the meat of CS. I graduated in 2004 with a BS in Biology, so I'm back at it again going for that BS in CS haha. I work full-time at a Immunotherapy place in Union City called Dendreon, while going back to school, so schedule can be a bit hectic at times. When I'm not classing, or working, I enjoy working out, playing sports, or chillin' and playing video games. As for the first project, I've been assigned my our Leader to sections in Task 3, along with creating a Github account, and providing help and feedback to the group. The project will allow us to become familiar with each other, and build a team atmosphere leading into future the semesters future projects. I'm excited and look forward to working with y'all.
Shili 6:44 PM
Hi everyone, my name is Shili. I am still learning my English, so please excuse me if you guys have difficulty to understand what I say sometimes. My interests are many. I love traveling, and when I have free time, I like just napping or watching movies. I am assigned for project 1 are creating Slack & GitHub accounts, then I will answer the first 2 questions from TASK 3. Down the road for TASK4, I need to install Raspberry PI on my laptop. and complete TASK 5 & 6 as well. My expectation from this project is getting to know you guys well, and complete the tasks with you guys as well as in the future project. Also learn how to be well prepared for the future projects. Have fun everyone.
Sai Rampally 11:20 PM
Hey Guys! I'm Sai, the coordinator for project_A1. I'm currently a junior majoring in CS & probably going to minor in CIS or Actuarial Science before I graduate!! My top 3 interests are Food....mostly Hispanic and Mediterranean!! Sports.....Soccer, American Football, Cricket!! Cars.... Luxury & exotic! I'm incharge of working on tasks 1, 2, 4, and part of 5! My expectation from this project is for us to get together and collaborate ideas, learn as much as we can from this project!!
I'm looking forward to working with you guys on not just this project, but the projects to come in the near future! Good Luck to all of us
Message #general


assignment2.pdf
ARM_Assembly_Programm
Homepage - SYSTEM-LEVI
New Tab
ATLAS-SQUAD/CSc-3210
GitHub, Inc. [US] | https://github.com/ATLAS-SQUAD/CSc-3210
ATLAS-SQUAD / CSc-3210
Watch 0
Star 0
Fork 0
Code
Issues 0
Pull requests 0
Projects 0
Wiki
Insights
Settings
No description, website, or topics provided.
Edit
Manage topics
3 commits
1 branch
0 releases
1 contributor
Branch: master
New pull request
Create new file
Upload files
Find file
Clone or download
ATLAS-SQUAD Update README.md
Latest commit 6a66a49 4 minutes ago
README.md
Update README.md
4 minutes ago
README.md
CSc-3210
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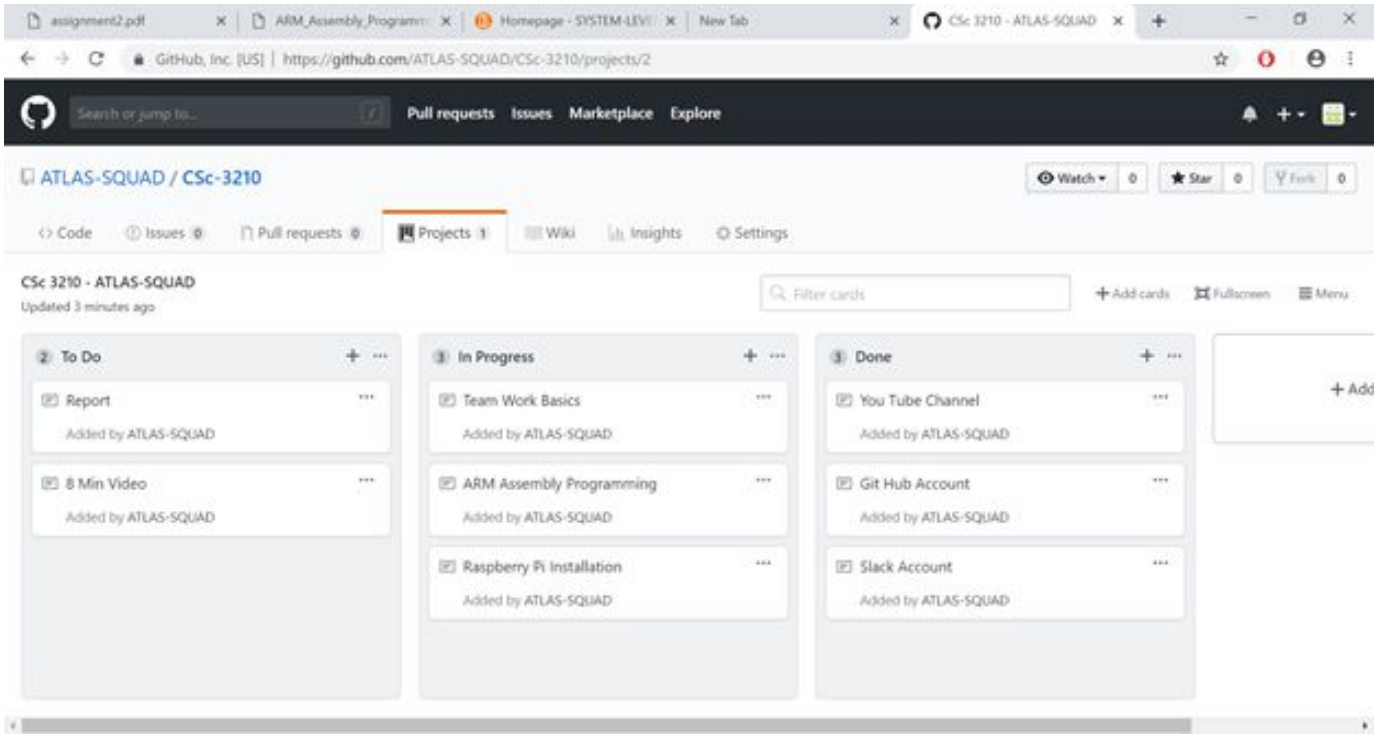
Team Members: Sai Rampally (Team Coordinator), Shili Guan, T'Avvion Jones, Zeak Sims, Jason Poston


GitHub, Inc. [US] | https://github.com/ATLAS-SQUAD/CSc-3210/projects/2
Pull requests
Issues
Marketplace
Explore
ATLAS-SQUAD / CSc-3210
Watch
Star
Code
Issues
Pull requests
Projects
Wiki
Insights
Settings
CSc 3210 - ATLAS-SQUAD
Updated 3 minutes ago
Filter cards
Add cards
Fullscreen
Menu
To Do
Report
Added by ATLAS-SQUAD
8 Min Video
Added by ATLAS-SQUAD
In Progress
Team Work Basics
Added by ATLAS-SQUAD
ARM Assembly Programming
Added by ATLAS-SQUAD
Raspberry Pi Installation
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Git Hub Account
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Slack Account
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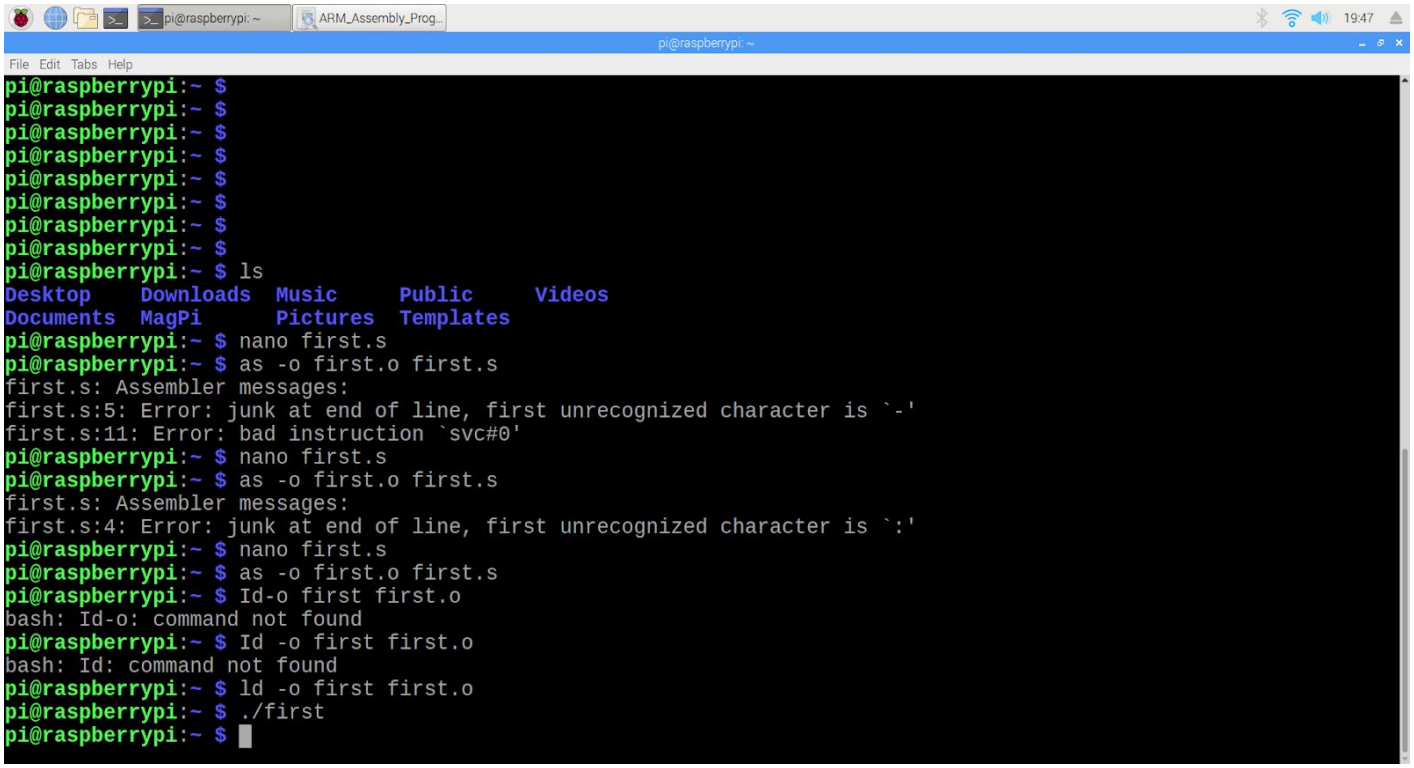
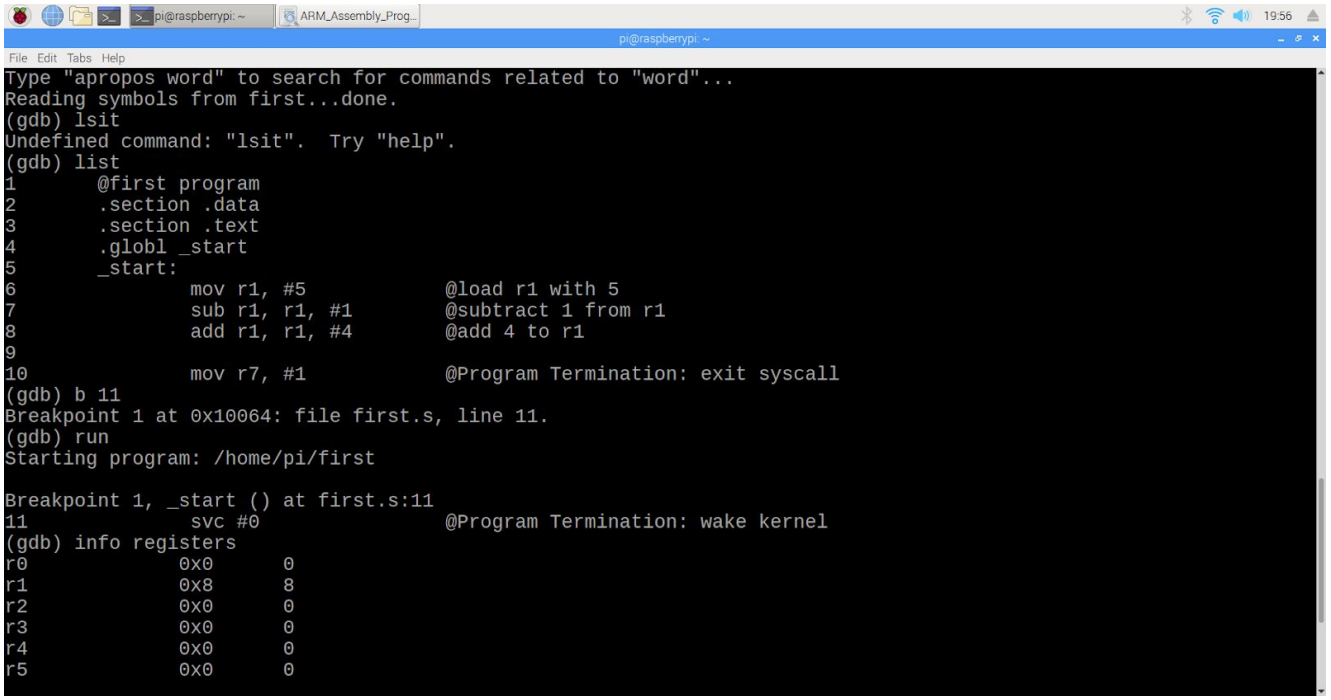
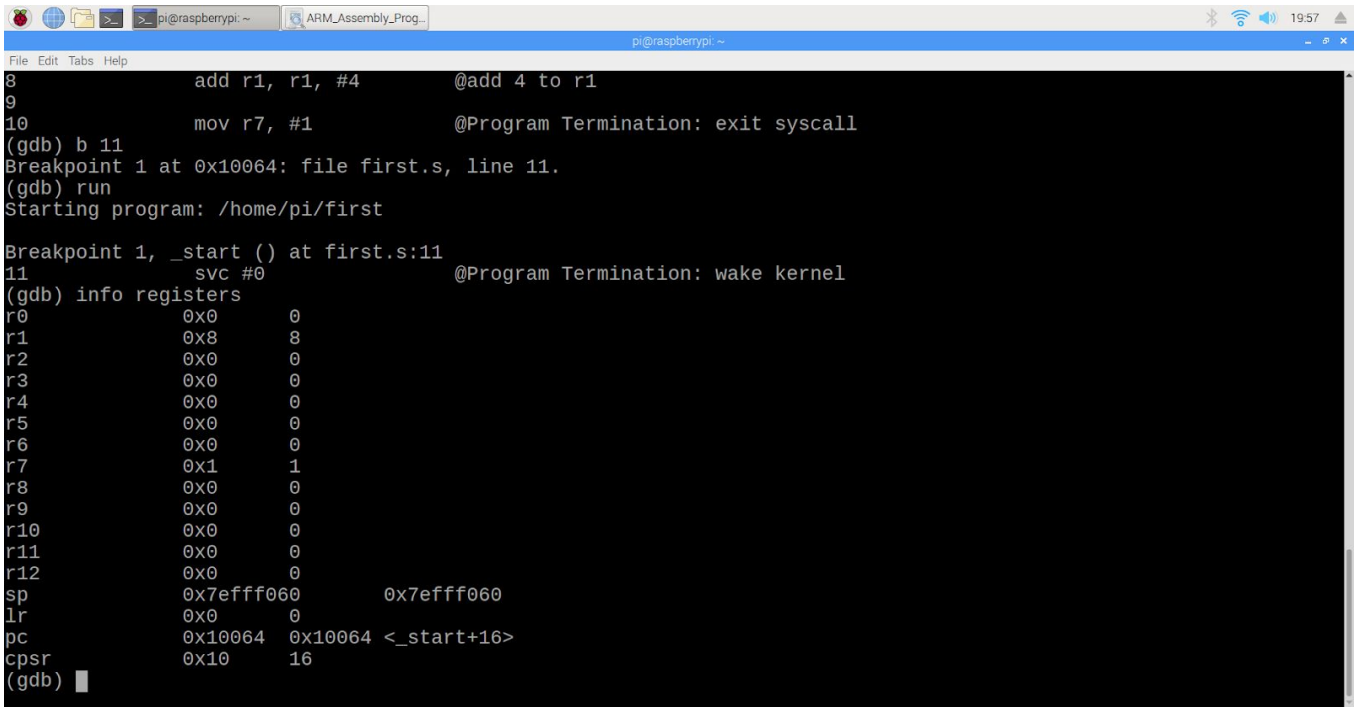
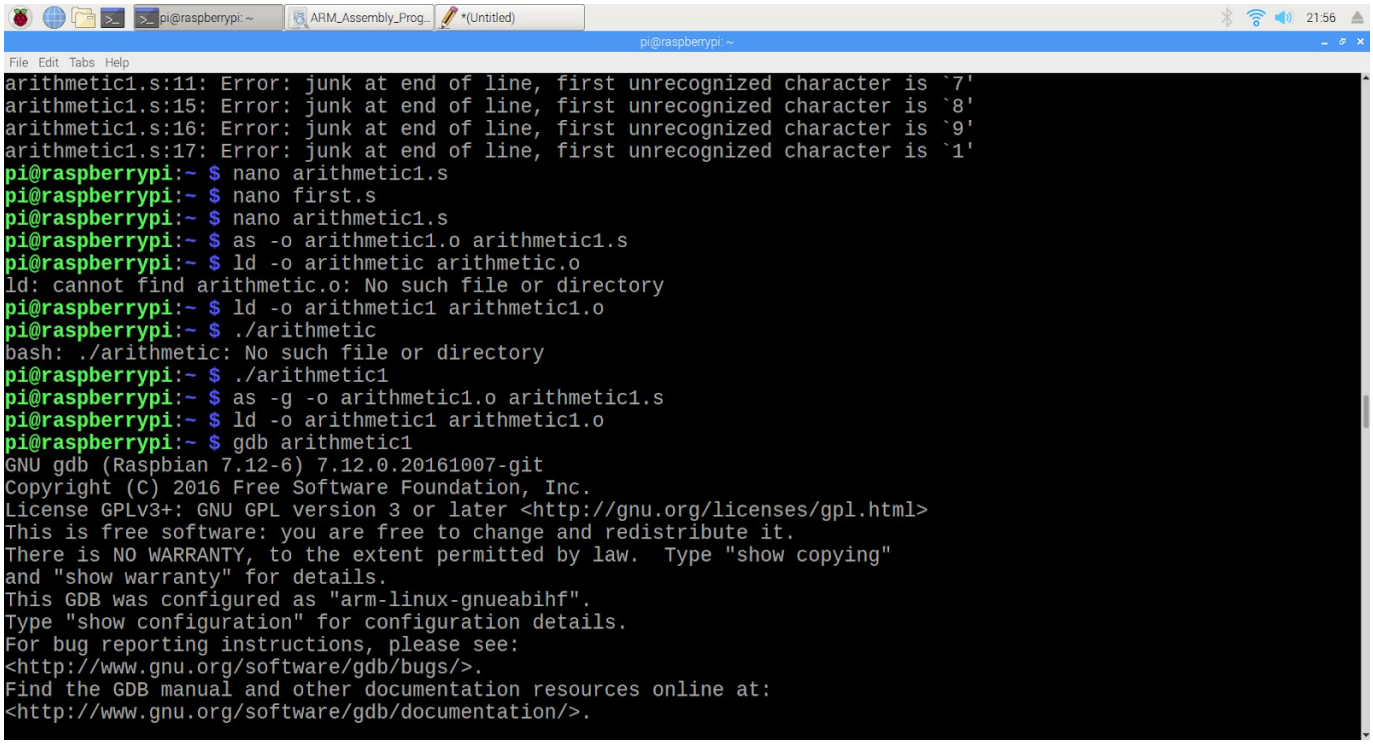

pi@raspberrypi: ~
ARM_Assembly_Prog...
19:47
pi@raspberrypi: ~
File Edit Tabs Help
pi@raspberrypi:~ $
pi@raspberrypi:~ $
pi@raspberrypi:~ $
pi@raspberrypi:~ $
pi@raspberrypi:~ $
pi@raspberrypi:~ $
pi@raspberrypi:~ $
pi@raspberrypi:~ $
pi@raspberrypi:~ $ ls
Desktop Downloads Music Public Videos
Documents MagPi Pictures Templates
pi@raspberrypi:~ $ nano first.s
pi@raspberrypi:~ $ as -o first.o first.s
first.s: Assembler messages:
first.s:5: Error: junk at end of line, first unrecognized character is `-'
first.s:11: Error: bad instruction `svc#0'
pi@raspberrypi:~ $ nano first.s
pi@raspberrypi:~ $ as -o first.o first.s
first.s: Assembler messages:
first.s:4: Error: junk at end of line, first unrecognized character is `:'
pi@raspberrypi:~ $ nano first.s
pi@raspberrypi:~ $ as -o first.o first.s
pi@raspberrypi:~ $ Id-o first first.o
bash: Id-o: command not found
pi@raspberrypi:~ $ Id -o first first.o
bash: Id: command not found
pi@raspberrypi:~ $ ld -o first first.o
pi@raspberrypi:~ $ ./first
pi@raspberrypi:~ $


pi@raspberrypi: ~
ARM_Assembly_Prog...
19:56
pi@raspberrypi: ~
File Edit Tabs Help
Type "apropos word" to search for commands related to "word"...
Reading symbols from first...done.
(gdb) lsit
Undefined command: "lsit". Try "help".
(gdb) list
1 @first program
2 .section .data
3 .section .text
4 .globl _start
5 _start:
6 mov r1, #5 @load r1 with 5
7 sub r1, r1, #1 @subtract 1 from r1
8 add r1, r1, #4 @add 4 to r1
9
10 mov r7, #1 @Program Termination: exit syscall
(gdb) b 11
Breakpoint 1 at 0x10064: file first.s, line 11.
(gdb) run
Starting program: /home/pi/first
Breakpoint 1, _start () at first.s:11
11 svc #0 @Program Termination: wake kernel
(gdb) info registers
r0 0x0 0
r1 0x8 8
r2 0x0 0
r3 0x0 0
r4 0x0 0
r5 0x0 0


pi@raspberrypi: ~
ARM_Assembly_Prog...
19:57
pi@raspberrypi: ~
File Edit Tabs Help
8 add r1, r1, #4 @add 4 to r1
9
10 mov r7, #1 @Program Termination: exit syscall
(gdb) b 11
Breakpoint 1 at 0x10064: file first.s, line 11.
(gdb) run
Starting program: /home/pi/first
Breakpoint 1, _start () at first.s:11
11 svc #0 @Program Termination: wake kernel
(gdb) info registers
r0 0x0 0
r1 0x8 8
r2 0x0 0
r3 0x0 0
r4 0x0 0
r5 0x0 0
r6 0x0 0
r7 0x1 1
r8 0x0 0
r9 0x0 0
r10 0x0 0
r11 0x0 0
r12 0x0 0
sp 0x7efff060 0x7efff060
lr 0x0 0
pc 0x10064 0x10064 <_start+16>
cpsr 0x10 16
(gdb)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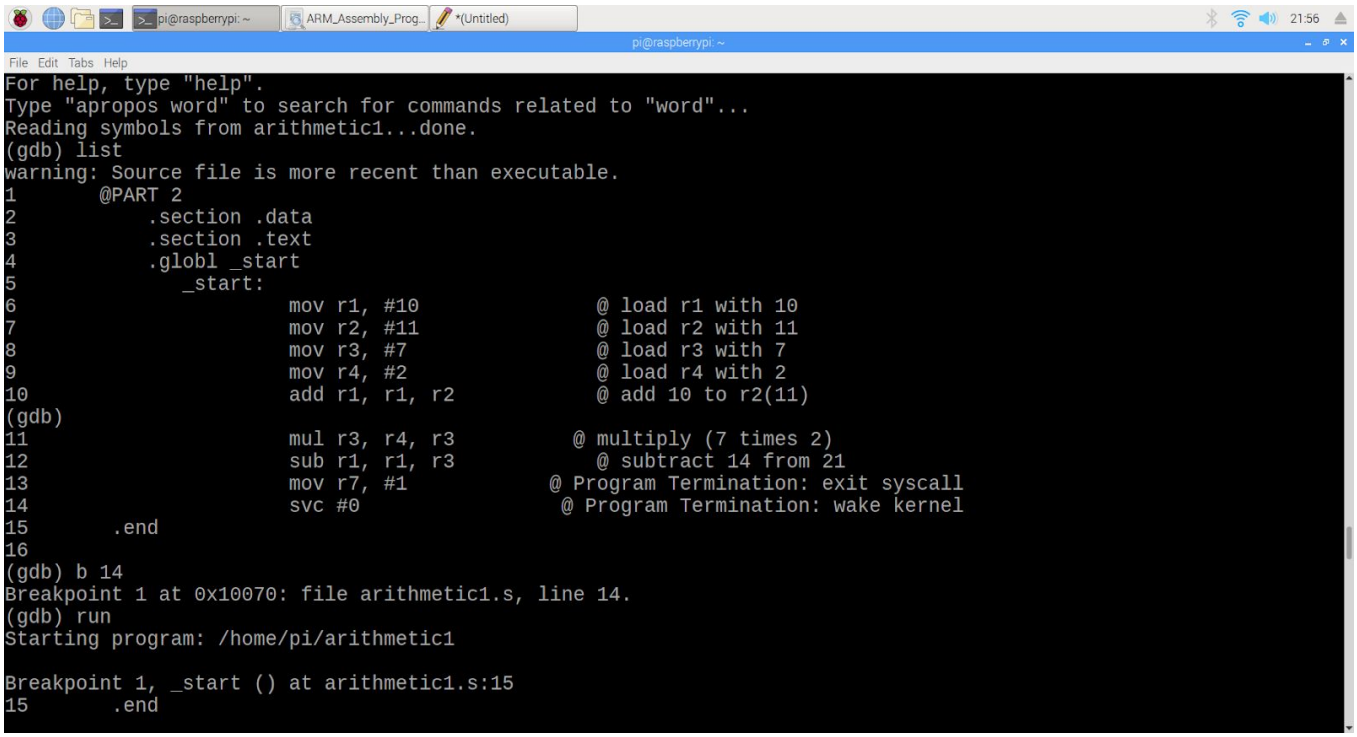
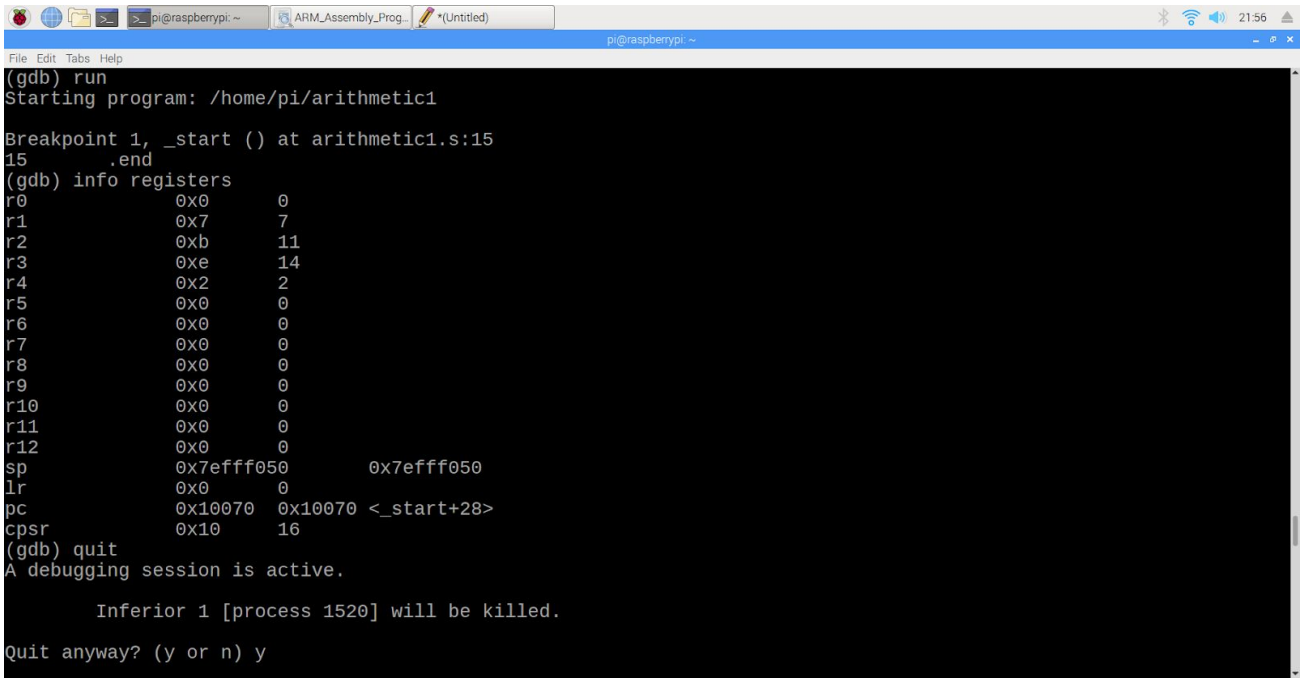
ARM_Assembly_Prog...
*(Untitled)
21:56
pi@raspberrypi: ~
File Edit Tabs Help
arithmetic1.s:11: Error: junk at end of line, first unrecognized character is `7'
arithmetic1.s:15: Error: junk at end of line, first unrecognized character is `8'
arithmetic1.s:16: Error: junk at end of line, first unrecognized character is `9'
arithmetic1.s:17: Error: junk at end of line, first unrecognized character is `1'
pi@raspberrypi:~ $ nano arithmetic1.s
pi@raspberrypi:~ $ nano first.s
pi@raspberrypi:~ $ nano arithmetic1.s
pi@raspberrypi:~ $ as -o arithmetic1.o arithmetic1.s
pi@raspberrypi:~ $ ld -o arithmetic arithmetic.o
ld: cannot find arithmetic.o: No such file or directory
pi@raspberrypi:~ $ ld -o arithmetic1 arithmetic1.o
pi@raspberrypi:~ $ ./arithmetic
bash: ./arithmetic: No such file or directory
pi@raspberrypi:~ $ ./arithmetic1
pi@raspberrypi:~ $ as -g -o arithmetic1.o arithmetic1.s
pi@raspberrypi:~ $ ld -o arithmetic1 arithmetic1.o
pi@raspberrypi:~ $ gdb arithmetic1
GNU gdb (Raspbian 7.12-6) 7.12.0.20161007-git
Copyright (C) 2016 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law. Type "show copying"
and "show warranty" for details.
This GDB was configured as "arm-linux-gnueabihf".
Type "show configuration" for configuration details.
For bug reporting instructions, please see:
<http://www.gnu.org/software/gdb/bugs/>.
Find the GDB manual and other documentation resources online at:
<http://www.gnu.org/software/gdb/documentation/>.


pi@raspberrypi: ~
ARM_Assembly_Prog...
*(Untitled)
21:56
pi@raspberrypi: ~
File Edit Tabs Help
For help, type "help".
Type "apropos word" to search for commands related to "word"...
Reading symbols from arithmetic1...done.
(gdb) list
warning: Source file is more recent than executable.
1   @PART 2
2   .section .data
3   .section .text
4   .globl _start
5   _start:
6   mov r1, #10   @ load r1 with 10
7   mov r2, #11   @ load r2 with 11
8   mov r3, #7   @ load r3 with 7
9   mov r4, #2   @ load r4 with 2
10   add r1, r1, r2   @ add 10 to r2(11)
(gdb)
11   mul r3, r4, r3   @ multiply (7 times 2)
12   sub r1, r1, r3   @ subtract 14 from 21
13   mov r7, #1   @ Program Termination: exit syscall
14   svc #0   @ Program Termination: wake kernel
15   .end
16
(gdb) b 14
Breakpoint 1 at 0x10070: file arithmetic1.s, line 14.
(gdb) run
Starting program: /home/pi/arithmetic1

Breakpoint 1, _start () at arithmetic1.s:15
15   .end


pi@raspberrypi: ~
ARM_Assembly_Prog...
*(Untitled)
21:56
pi@raspberrypi: ~
File Edit Tabs Help
(gdb) run
Starting program: /home/pi/arithmetic1
Breakpoint 1, _start () at arithmetic1.s:15
15 .end
(gdb) info registers
r0 0x0 0
r1 0x7 7
r2 0xb 11
r3 0xe 14
r4 0x2 2
r5 0x0 0
r6 0x0 0
r7 0x0 0
r8 0x0 0
r9 0x0 0
r10 0x0 0
r11 0x0 0
r12 0x0 0
sp 0x7efff050 0x7efff050
lr 0x0 0
pc 0x10070 0x10070 <_start+28>
cpsr 0x10 16
(gdb) quit
A debugging session is active.
Inferior 1 [process 1520] will be killed.
Quit anyway? (y or n) y