1. Analyze the technical solutions

Theory from the text book by Michael Wooldridge (2009)	[1] Download [1], NetLogo-Code_1Download NetLogo-Code_1	[2] Download [2], NetLogo-Code_2Download NetLogo-Code_2	[3] Download [3], NetLogo-Code_3Download NetLogo-Code_3	Course-Project
Chapter 2-Intelligent agents: - are the criteria for autonomous agents and for intelligent agents fulfilled? Explain why or why not?	I believe the agents to be neither intelligent or autonomous due to the fact that they both lack proactivity and social capabilities, they do not have any form of goal. All they do is move around randomly reacting to whats around them. Their grievance and such vaiabels are set to specific values and there is no proactive parts towards working with this only reactive. The media is autonomous due to the fact that they want to maximize the value of their move function and works towards this by looking at the	Citizens and militaty are not intelligent or autonomous agents due to only being reactive. The do not want to loose money however once their grievance gets high enough they will ignore the money loss and become active. They do not really have a goal to keep a hight income it is simply another variable added to their reactive behaviour to determine if they should be active or not. Revolutionaries are also only reactive checking for when there are more citizens than cops resulting in the function being less than the	Both citizens and militarie agents have winconditions and these winconditions are their respective goals meaning they have the start of a proactive part to them. Both citizens and military check their benefits to see if they have good income respectively have good benefits and this in combination with what they witness around them determains if they become actie or not also taking into account their personality types. I would argue that this is inteligense since they have both some proactive parts and reactive parts	In our project our agents activly work towords their programmed goals by reacting to their enviroment and determaning what action best moves the agent forwards towords their goal, a goal could be to get to town square based on a reaction and then the agent will move towards the townsquare and react to things on the way however still focusing on the goal and not changing this goal for nothing, our agents also communicate

	possibilities and picking the best spot and when they spot a fight they react and take a picture of the situation	value and then they start killing people. I do not see the money they have as a proactive thing to keep high I simply perceive this as a individual threshold for when to turn on the government. The revolutionaries however proactively choose to hide or become active so cant decide if this is a vertical structure with a proactive part using the reactive part or if its simply reactive	being used by these proactive parts. And they share what they see to other citizens.	with oter agents that they are headed to townsquare and others respond resulting in our agents being reactive, proactive and social so they are intelligent agents.
Chapter 4 - Practical Reasoning agents: - Is “means-ends reasoning” used? If yes, how? - How are intentions deliberated and plans executed if compared to the code in Figure 4.3?	Means end reasoning recuires first of all a goal, non proactive agents do not have a goal therefore all non proactive agents cannot use means end reasoning	Means end reasoning recuires first of all a goal, non proactive agents do not have a goal therefore all non proactive agents cannot use means end reasoning	There is no real creation of a plan or execution of a plan in this video however there Is a clear goal for both breeds of agents and they do consider their environment and look at possible actions however they do not construct a plan for how to achieve their goal.	No we do not use mean end reasoning, If we think back to a previous dic we have done about mean end reasoning we looked at an example code where this was implemented. This code did all the parts and our code has implemented all parts except

				the planning part. Our code does not implement any sort of similar plan. Our code however uses intentions for our agents goals however there is no dynamic plan making for how to reach this goal therefore we do not use meansend reasoning
Chapter 5 - Reactive and Hybrid agents: - what are some examples of reactive behaviors? - What are some examples of pro-active behaviors? - Does the solution combine reactive with pro-active agent behavior? If yes, which hybrid agent's architecture is used (horizontally layered or	Reactive Citizens: To move around and to become active or stay not active depending on thresholds. Reactive Cops move around and arrest nearby active citizens Reactive Media: Photographs nearby fights Proactive Media: checks for best possible place to move to get the highest value and moves there	Reactive Citizens: Descide if they are to be active or not Reactive Military: Look around for active revolutionaries and citizens and deal with. Reactive Revolutionary: Check the ratio of active citizens and revolutionaries to the amount of military and if it is low enough they activate and change into killing mode Vertical structure since	Reactive citizen: Check their environment and descide if they are to become active or not depending on their personality traits Reactive military: Also check their happiness by checking their benefits and looking at their environment, they also arrest or kill based on probability functions. Proactive Citizens: They work towards eliminating the military	Reactive Cops: move around and look for active citizens, once they find one they tell their cheif about what they found. Reactive Citizens walk around voiding collision with other citizens, they roam around until they fel like going to townsquare to talk to others where others can react and choose to listen. Proactive cops want to stop

vertically layered)?	Vertical structure since we lack any sort of switch and the proactive part of the media uses the reactive move function in the reactive state.	we lack any sort of switch and the proactive part to switch to.	Proactive military: work towards removing all activists. Vertical since we lack a switching unit and since the proactive parts use the reactive parts just like in the architecture.	demonstration so the chief ckecks the amount of citizens and plans out how many cops should go where and who to try and stop demonstration. Proactive citizens strive for freedom and if they are not treated right they instead work towards organizing demonstration. We use a vertical structure same as the other codes, the proactive parts guide and use the reactive parts for our code
Chapter 7 - Communicating: - Are the agents communicating with one another? - If yes, how do they communicate? Do they use a	No they don't communicate with eachother	No they don't communicate with eachother	Yes they communicate by a news outlet by agents spreading what they witness and how they are feeling, this in turn affects the nearby agents happiness and	Yes our agents talk to each other and interact with eachother and we use the same model in the entire code for standardised communication, we support many different

form of agent communication languages?			results in social behaver.	types of messages such as informs, broadcasts and requests.
Chapter 8 - Working together: - Are groups of agents actually working together? - If yes describe how task sharing, or result sharing is used? - If they work together, how is coordination solved? - Through partial global planning, through joint intentions, or something else?	No agents do not work together	No agent do not work together	The citizens do use some sort of result sharing when talking about what they have seen and then this information is seen by other agents on the news and this effects these agents and can result in different outcome based on the new information. They however do not work together they only share their feelings. They do not talk or communicate directly to eachoter but using the news they can still affect other citizens.	Yes both cops and citizens work together by infrming each other of whats happening and grouping up together to demonstrait or sending cops to big groups of civilians at the town square. The cops use a chief who organises and is in charge of planning and informing other cops of what is happening and needs to be done and citizens have a rebellion leader who is the one who sent out the inform of the agent waking to townsquare to talk and others join it.
Chapter 11 - Utilities and preferences:	Determine behavior:	Determain behavior:	Moral hardship: If emotions * killed >	Frustration > 0.50 and fear < 0.70 and r < 0.70 is the

- what are the most important outcomes that together with defined utility functions are being used to determine an agent's preferences? - Describe the main idea behind these utility functions - What are the agent's preferences in this case?	set active? (grievance - risk-aversion * estimated-arrest-probability > threshold) This function determains if the agent should be active by ckecking if risk aversion and estimated arrest probability is bigger than the threshold and this makes them active. The cops simply look at if citizens are active or not and act accordingly.	Set active? (grievance – (estimated-arrest-probability * cost) > f) This function determains if a citizen is active by looking at their grievance compared to their estimated arrest probability and the money loss is enough for them to become active or if they stay neutral. The police doesn't really have utilityfunction they simply look at the status of citizens and revolutionaries, when killing they use u_p random-float 1.0 to detairmen if they manage to kill the citizen. Revoloutionaries use the utility function (R+C)/P > n that takes all revolutionaries and active citicens and divides them by the number of cops to detairmain if the ratio is low	threshold-killed[set status 2] This utility function is what determains the citizens hardship and status 2 results in the citizens being unhappy. The military checks their benefits if benefits = "low" If benefits = "middle" if benefits = "high" and this function detarmains the aappines for the military and if they are going to revolt and stop being military	utility function that determains if a citizen will be joining a demonstration or not by ckecking if they are frustrated enough, fearless enough and their riskaversion is low enough they will join a demonstration. The cops check for demonstrating citizens but do not use any real utility functions for determining to arrest or not to arrest.

		enough for them to become active and start killing.		

2. Compare our technical solutions with the research solutions

Analyze the table from task 1 above, and describe how our solution in the course-project compares with the solutions from the research papers? What is similar and what is different?

Our solution is much brouder and detailed than the other solutions we have looked at, we incorporate a lot more parameters and freedom for our agents trying to simulate life and not just rebellion. We have implemented more intelligent agents with reactive, proactive and social parts to our agents making them intelligent.

All the reactive behaviours are very similar however the deeper meaning of the program and results wanted in these 3 projects compared to ours is very different making it hard to compare specifics more than simply concluding our project to be more advanced and broad due to the fact our citizens have jobs, organize with each other, have “feelings” and many many factors in consideration for why and if they choose to revolt. Our agents are in a sense more deep with their intentions desires and beliefs.

The basic structure of the code is however very similar and many parts of our code has been these example codes but greatly modified and made more advanced for our purposes. The resoning parts are also vastly different due to the fact that the other codes are very primitive with just a couple factors if any determining what they should do and with our code there is a lot more to it with setting beliefs and intentions and later executing these intentions.

3. Discuss the limitations of our solution

Compared to the solutions presented in the research papers, which are the limitations of our current solution from the course-project?

Compared to the soloutions presented by the research papers I do not believe there to be any limitations with our solution. I believe our solution and modifications have

led to a more thought out and deep program with many more features and therefore I do not see any part of our project to be lesser or lacking in any parts compared to these examples, the only part perhaps being the social media in our project not really being implemented due to time constraints however I do not think it fair to call our solution lesser to theirs since the tiny amount of functions we did manage to integrate into the project far surpass the complexity of the news and media in the other example codes.