Improving communication between a neurotypical employer and their neurodivergent employees in regards to task management

Ryan Edward Harris
UP938769

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Supervised by:
Mark Venn

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Abstract

People on the autism spectrum have difficulty understanding things in day-to-day life. This also transfers to the workplace and can potentially lose them their job, or even stop them from getting one in the first place. This extends to anyone who is neurodiverse. Neurodivergent people all have difficulties that they can't do anything about. This causes unwanted and unneeded stress and anxiety. This research project is designed to be the foundation for others to learn from and work upon. It will explain the way that neurodiverse people are treated in the workplace and proposes many ways to help them.

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Acronyms

Acronym	Meaning
ASD	Autism Spectrum Disorder
DB	Database
ERD	Entity Relationship Diagram
ND	Neurodivergent
NT	Neurotypical
PSQL	PostgreSQL
SQL	Structured Query Language
VM	Virtual Machine

Table 1: Acronyms used in this report

Chapter 1
Introduction

1.1 The Problem

Communication is an important part of everyday life for everyone. It is a tool that is essential to work life. However, not everyone is capable of communicating at the same capacity. There are people who are introverted and don't like to talk very much. There are people who are extroverted and can talk way too much. Even though both types of people are so different they can still understand each other and the communication between them isn't necessarily hindered in a way that could cause a massive problem with their work. These types of people are *neurotypical* (NT). This means that their brain works pretty similarly to the majority of the population.

However, some people are considered *neurodivergent* (ND). A ND person can see the world extremely differently to a NT person. Thus, causing communication to be extremely difficult between the two groups.
This therefore creates a more complicated work environment for everyone when a ND person is working there.

People aren't as educated as they should be on how being ND affects not just communication but the ND person as a whole. Therefore, next to nothing is done to meet the needs of the ND person to help them communicate with the rest of their NT peers.

Autism Spectrum Disorder (ASD) is a neurological difference that affects many people across the globe. It affects those people their entire lives. The way that autism affects people is completely different for each person, but generally it creates difficulties with; social relationships, language and communication and a general resistance to changes in routine; as well as a preoccupation with repetitive or stereotyped behaviours and interests (Slaughter. V. P. D, 2022).

1.2 The Objectives

The objective of my project is to bring light to how ND people struggle with communicating and how those that are NT need to be further educated on how they can help. It will require designing an idea that could help bridge this gap and getting feedback on that idea from both ND and NT people. I don't intend on creating the full idea, as it is merely a proposal to support my research and can be taken further in the future, either by myself or by another student as their final year project should they wish.

Project Objectives:
- Provide insight into how the ND mind works and what can be done to help them.

- Speak to both NT and ND people to find out how communication affects them and their work lives.
- Deliver a complete artifact to provide evidence for how this can benefit ND and NT people.
- Provide both groups with questions in regards to the artefact and research.
- To provide my findings in this report.

1.3 Project Constraints

I am constrained by time as a major factor with my research. I only have until the project deadline to complete my report and develop my conclusion.
I also have other aspects outside of the university that constrain my time. I am on and off will a condition that inhibits my energy levels and so I will have to do my best to work around that.
Alongside this there is the unfortunate possibility that I could lose all of the data at some point throughout the project so I need to make sure that things are stored in multiple places so that I don't lose access to my work and restart the project.

1.4 Report Structure

- Literature Review
  I will use the literature review to look at the current state of communication in the workplace between NT and ND people. This will help me to know the kinds of questions that I want to ask and the types of things I want to include in my supporting artefact.

- Research Specification and Questions
  Questions that will be made using the research from the literature review to ask people about their experiences and things that could be improved. I will most likely use a mixture of open and closed ended questions.

- Research Design
  I will create a Google Form to send to both NT and ND people. I feel that it is important to get both perspectives so that I can see what the consensus is on this area and that it will allow me to analyse it more critically.

- Supporting Artefact
  My proposed solution to how communication can be improved.

- Research Results
  Reviewing the results from the questionnaire and discussing what they mean and their impact on my project.

- Conclusion
  Conclusion and reflection on my project including recommendations if someone were to repeat this and suggestions for if someone wanted to take my research further.

Chapter 2
Literature Review

2.1 Search Management Sheet

Terms	Engine	Results	What is this search?	Result
breaking down tasks for autistic people	ebsco	14,095	Initial Search	Too many matches, need to have more terms to narrow results down. Most results relate to research in autism. However, a few results do link to what I am searching for.
breaking down tasks for autistic people in the workplace	ebsco	5,487	Tried being more specific.	Less results. More relevant results. Still need to narrow down the search a bit more.
breaking down "tasks" for "autistic people in the workplace"	ebsco	4	Tried using phrases	Narrowed down much further than expected. Half of the results seem like related pieces of information
breaking down "tasks" for autistic people	ebsco	43,014	Tried specifying the area I want to look at	Even more searches than the initial search. Need to find a new way to narrow the search down
breaking down "tasks" for autistic people AND task management	ebsco	36,104	Added an extra search term to try and be more specific in the area I am looking at	Reduced number of results, however, still way too many
breaking down "tasks" for autistic people AND "task management"	ebsco	605	Same as above, but I added the phrase around the second search term to be more specific	Reduced the number of results to a reasonable number
breaking down "tasks" for autistic people AND "task management" from 2000 to 2023	ebsco	594	Added a date restriction to get more up to date results	Didn't reduce the number of results by as much as expected. This means that the majority of research into this is recent and therefore, still has much more that can be done and added too

Table 2: Literature Review Search Management Sheet

2.2 Introduction

When it comes to the working environment, everyone has their struggles. Not getting along with co-workers, strict management, keeping up with schedules and tight deadlines, etc. However, there is a minority of people who have these same struggles as everyone else and much more. These people have Autism Spectrum Disorder (ASD).

2.3 Employment on the Spectrum

People with ASD have many challenges when obtaining and maintaining a job (Petty et al., 2023; Remington et al., 2022). There are fewer autistic people employed compared to people of other disability groups (Remington et al, 2022). Autistic people face an overwhelming number of negative workplace experiences at every stage of employment (Cooper & Kennady, 2021). These negative experiences increase if the person falls into multiple categories of neurodivergence (ND), such as Attention Deficit/Hyperactivity Disorder (ADHD), Dyslexia or Obsessive Compulsive Disorder (OCD) as well as ASD; this is excluding those from a minority ethnic background, if you include that then the hostility can be worse (Cooper & Kennady, 2021). This shows that the workplace can be extremely hostile to all ND employees. Personal evidence from Cooper & Kennady (2021) shows that there is a "deplored lack of understanding". This lack of understanding can be many things, including; bullying, social barriers and a lack of opportunities. This forces people with ASD and other differences to feel like they need to hide who they truly are so that they may pass as "normal" and can fit in with the crowd (Cooper & Kennady, 2021). In the autistic community this form of hiding who they truly are or how they truly feel is known as masking and is considered to be extremely stressful. It is used to hide a sensory response to the person's current environment. This is because the way they act is different to other people and so it draws attention (Sedgewick et al, 2021).

It can take a lot of time and effort for a person with ASD to stop masking just so they can be themselves. Even in private it can become difficult to stop masking, as there is always the worry that the mask will need to go back up quickly. For example, you might get a message or call from someone you work with and you need to be able to communicate with them in a way that they do not belittle you and understand you as they have come to know you.

2.4 Workplace Struggles

People with autism are likely to have specific issues/difficulties when it comes to applying for employment. For a group of autistic interns, the specific issues raised centred around the impact of prior employment experiences, mental health and communication (Remington et al, 2022). The managers that were working with the group of autistic interns had concerns that they would be unable to help the interns. However, one of the things that came out of the study was that the managers felt they had become better managers and learnt how to help those with autism.

Cooper & Kennady (2021) state that their research contained 600 people, 96 of whom were autistic. 60% of their autistic sample cited bullying or other workplace problems

that led to being sacked or resigning. There were also claims that this happened to individuals' multiple times. This means that there are many workplaces that are not gaining the benefits of having ND employees working for them. This is linked to the belief that ND people create more difficulties than they do opportunities or solutions. This has been proven to not be the case (Cooper & Kennady, 2021). People with autism can bring many strengths to the workplace; attention to detail, logical reasoning, passionate interests, and loyalty are just a few general strengths they can provide (Remington et al, 2022). They also value things that can benefit them from being employed and helping them to improve their work life; elevating skills, independence, making a meaningful contribution to the workplace (Remington et al, 2022). These are things that, given the opportunity, someone with ASD would take the first job they could get, just to start improving these things in themselves.

ND people can be extremely effective in the workplace if the manager is understanding of their differences (Cooper & Kennady, 2021). One of the fundamental building blocks for widespread change is to provide autism awareness for managers and staff; but also, for the Department for Work and Pensions and JobCentre Plus (Cooper & Kennady, 2021). The fact that this needs to be provided to both the Department for Work and Pensions and JobCentre Plus, is backed up by some research by Petty et al, (2023) which states that; employers report low confidence in supporting autistic employees and do not know what resources to draw upon (Petty et al, 2023).

The fact that these employers do not even know where to look for information just goes to show how little research has been done in this area of autism (Cooper & Kennady, 2021; Petty et al, 2023; Buckley et al, 2021; Scott et al, 2015; Remington et al, 2021). One suggestion was that a guide should be made for managers (Remington et al, 2022).

2.5 Reasonable Adjustments

It is clear that many employers do not know which resources to draw upon, as shown in the study by Petty et al (2023), where they attempted to find the adjustments that could be made and how reasonable each of the adjustments were. They came to the conclusion that the definition for "Reasonable Adjustments" was that the adjustments; enabled employees with autism to be well at work, have maximised work performance and levelled the playing field so that being autistic is not a disadvantage. This is achievable, so long as the adjustments are; low cost, easily delivered and available to all employees and not just those with autism. This is to avoid any feeling of unfairness or favouritism from employees not on the spectrum. The positive side effect of this is that it makes the workplace feel more inclusive for all (Petty et al, 2023). A workplace can be designed to be usable by all employees, but informed by the needs of the autistic employees to create an inclusive environment that recognises variability in employees' needs (Petty et al, 2023). In doing this it allows everyone to work at the best of their abilities and in an environment that they want to work in. Remington et al (2022), found that many of the autistic interns echoed the fact that there was a need for a tailored approach when it came to being managed. Some of the options for reasonable adjustments presented in this research by Petty et al, (2023) were: allowing employees to modify their environment, either by altering lighting or using ear/headphones to reduce noise so that their sensory processing

demands are reduced; working flexible hours where possible; offered reassurance in stressful situations and adjustable travel arrangements if required. The most common of these options to be accepted was the flexible working hours and travel arrangements (Petty et al, 2023). This is interesting as this kind of thing is more likely to affect a company monetarily than someone wearing ear/headphones while they work.

Some companies/managers are trying these things out. For example, in the study by Remington et al, (2022), managers found that their autistic interns responded much better when they did things such as; providing clear and flexible communication, consistent support, structured delegation of tasks. At the end of this study, it was found that the group of autistic interns experienced notable successes compared to the neurotypical (NT)/non-autistic interns and that the ASD interns brought added advantages by enhancing the communication and management practices of the managers as a whole (Remington et al, 2022).

With the right guidance, allowing employees to change their environment and having managers trained to have a better understanding of people with autism, things could begin to improve in the workplace. As stated before, these things could help with an autistic employee's struggles in the workplace to make them feel more comfortable at work and confident in their communication. But what if there was some technology that could support an autistic person so that they wouldn't need someone to keep an eye on them all of the time.

2.6 Existing Tools/Apps

In 2014, there was research being done on an app to support individuals with autism. The app is called "interactive Personal Assistant Web-Application System" (iPAWS), which aims to help individuals with ASD to accomplish simple tasks in both a work and school environment as it helps with the often-required structure and systematic procedure approach to learning that autistic people tend to have (Tan, 2014). iPAWS is designed to be accessible to individuals with autism, their families and potentially their employers/supervisors (Tan, 2014). It is also intended to help individuals with ASD acquire functional skills, leading to an increase in self-confidence. Tan (2014, p. 163) also states that the use of this software technology can help to lessen the burden of supervision needed for individuals with autism.

After doing this research I haven't managed to find a public version of iPAWS or any reference to it still being developed and much of Joo Tan's research is difficult to access. The only similar tool that I am aware of is called Brain In Hand (n.d.-a).
Brain In Hand is a tool designed to help people with autism develop and deploy strategies to tackle everyday tasks (Morpeth et al., 2020). It takes a goal-oriented, user-led approach to try and combine the benefits of technology with the person's support networks and helps with things such as: "difficulties with planning, problem solving and initiating tasks" (Morpeth et al., 2020). This is used as a way to try and encourage people with differences to understand what it is they need to do in order to solve the current/reoccurring problem(s) they might have. It does this by helping individuals to "establish routines, deal with unexpected events and managing stress and anxiety" (Morpeth et al., 2020). This is a great tool for those that can deal with a user-led approach to things.

While this is a great tool and can provide benefits in lots of different situations. It doesn't quite fulfil the requirements that would be needed in a high stress environment such as a workplace. The idea is to create a strategy for something before it happens, so that when you run into that problem, you are able to look at your strategy and follow that to be able to deal with the situation. However, if something comes up that you haven't planned for, then it takes time to put in the problem you are having, and then needing to come up with a solution on your own, while in the stressful environment, can be extremely difficult for anyone, not just those with a neurological difference. The app does have a "traffic light" function where you can press either the red, amber or green icon and it will alert someone that you have done so (Brain In Hand, n.d.-b). Pressing green has no effect other than logging that you are having a good day. However, pressing amber three times or red once will alert someone who may contact you to try and help in your current situation, whom then gets in touch via a specified preferred method (text, call or email) (Brain In Hand, n.d.-b). At first this seems like a great idea, however, some people will have anxiety and might not be comfortable talking to someone whom they do not know, therefore making them less likely to request this help, if at all. While the responders are dedicated to helping those that need it, some might prefer to speak to a family member or a trusted friend/colleague as they are more likely to know the commonalities that a neurologically different person may go through during a stressful time.

2.7 Misinformation & Autism Speaks

Many people are unsure of where to go for information or the resources to draw upon about people with autism (Petty et al, 2023) and that is somewhat thanks to the company Autism Speaks, who in the past, seem to have spread misinformation about autism and those it affects. Autism Speaks (n.d.-a, para.3) is a non-profit autism awareness organisation who claims to;

- "Ensure access to reliable information and services across the lifespan."
- "Support research and innovation that drives towards improved quality of life and well-being for individuals with autism throughout their lives."
- "Leverage our assets through advocacy, partnerships and collaboration to support, extend and convene the work of service providers."
- "Accelerate delivery of solutions for adult quality of life needs, including transition, employment, housing and health and wellness."
- "Live and promote principles of diversity, equity, access and inclusion both in and outside of the organisation"

However, they don't tend to follow any of these "mission statements" as a large portion of the autistic community stand against Autism Speaks and what it stands for. A former autistic employee of Autism Speaks (Robinson, 2013), states that "Autism Speaks says it's the advocacy group for people with autism and their families. It's not, despite having had many chances to become that voice. Autism Speaks is the only major medical or mental health non-profit whose legitimacy is constantly challenged by a large percentage of the people affected by the condition they target." This isn't the first time that Autism Speaks has been mentioned as the villain of the story either. In 2009, Autism Speaks published a video called "I Am Autism" (which has since been taken down). This video portrayed people with autism as useless burdens, or objects of fear and pity, implying that people with autism are something to be weary of and

avoid (Autistic Self Advocacy Network [ASAN], 2009; Wallis, 2009, para. 4). This isn't helped by the fact that Autism Speaks doesn't clearly show what they are spending their money on, and when they do, it's shockingly low how little is being put into supporting people with autism. For example, in 2010, Autism Speaks spent 4% of its budget on services for autistic people (Berrington, 2013, para. 9). This is further backed up by another statement from John Elder Robinson in Berrington's blog post, saying "the majority of the research Autism Speaks has funded to date does not meet those needs, and the community services are too small a percentage of total budget to be truly meaningful. We have delivered very little value to autistic people, for the many millions raised" (Berrington, 2013, para. 9).

While there may be some well-intentioned people working for and associated with Autism Speaks and while they may have done a few good things such as helping to pass state legislation requiring fully-funded health insurance plans to cover therapies for autistic children in the USA (Berrington, 2013, para. 12); the company still creates a large shadow over the autistic community. Especially seeing as they also, at one point, stated on their website that they were looking for a "cure" for autism. This was removed in 2016, however, the fact that it was there in the first place continues to not sit well with a large portion of the autistic community (Autism Speaks, n.d.-b).

2.8 Conclusion

Finding out about the kinds of things that are already tentatively in place during my research has definitely shown that this kind of thing is being thought about, but hasn't made it very far. That is why this project is so important, due to the fact that, while research has been made on these sorts of things, there just isn't anything actively available to the autistic community to support them in the way that's best for them.

Chapter 3
Specification and Research Questions

In this chapter I will be discussing my research questions and how my research and data gathering have answered these questions.

3.1 Research Questions and Answers

3.1.1 Do employers do anything to support ND people as a whole?

Yes, some employers do support ND people. Not necessarily as a whole but there are adjustments that are made to help accommodate them. When researching for my literature review, I found that the most observed workplace adjustments seen by Petty et al (2023), were: "clarifying job expectations (41%) and offering flexible working hours or flexible travel arrangements (41%)". With the least frequently observed adjustment being additional support through the recruitment process (13%).

Is it a case-by-case basis? For example, do employers only offer help to those that ask for it instead of offering it as a standard from the start?

When it comes to task completion, there is not very much in the way of helping individuals achieve the tasks that they are given. If help is provided it is a case-by-case basis and only if the employee asked for the help to be provided. Employers tend not to offer help as a standard from the start as they assume that whoever is hired knows exactly what to do, when to do it and how to fix it if anything changes, which of course, is not always the case.

Do employers provide ND staff members with tools that assist with task completion?

Unfortunately, this tends not to be the case. There are some employees who are also completely unaware of any tools that could help them to complete their tasks (Petty et al, 2023).

3.1.2 What research has already been conducted in this area?

There has been some research completed in this area. Tan (2014) began research into "A Task Assistant for Individuals to Autism Spectrum Disorder", in which they started to create the app called iPAWS. However, much of this research is difficult to access and/or requires you to formally request a copy (of which my supervisor attempted and had no response). It all seemed promising and is very close to the idea that I have designed, but unfortunately, I haven't found anything about if it is still being worked on and if there is an app that is readily available to be used.
One of the reasons for this may be due to the fact that Joo Tan was based at Kutztown University in the USA at the time of publishing their paper(s). This might mean that *if there is* a working application, then it maybe region locked (on the Apple iPhone App Store) and can only be access by those in the USA. Therefore, not making it very accessible for everyone.

Has that research had an impact?

There has been some impact from previous research. Petty, et al (2023) states that "the UK government introduced the Autism Act 2009 and the Equality Act 2010". Both acts intended to make the workplace more accessible for everyone, by providing "reasonable adjustments" to those that needed them. This was done to try and decrease the autism employment gap by removing barriers to employment caused by disability (Autism Act 2009; Equality Act 2010).

While these acts were a step forward, they haven't had as much of an effect that people wanted. In 2021, the Office for National Statistics (ONS) published the data and analysis from Census 2021 (Office for National Statistics, 2022), in which "Disabled people with severe or specific learning difficulties (26.2%), autism (29.0%), and mental illness or other nervous disorders (30.1%) had employment rates that were lower than disabled people with other impairment types".

10 years prior to Census 2021, ONS published a document stating that employment rates were the lowest for people with: severe learning difficulties (12.0%), mental illnesses or nervous disorders (14.2%) and depression or anxiety (27.2%) (Office for National Statistics, 2011). Making the assumption that autism is in the "severe learning difficulties" category, due to it not being stated outright, the numbers show that the research that has been published has had a significant impact by over doubling the amount of people with disabilities who are employed. While this is great the Census 2021 statistics still show that the majority of people with disabilities are not employed.

3.1.3 What situations in the workplace do ND people struggle with the most?

A lot of ND people struggle with keeping a job and applying for employment in the first place. The hardest struggle in the workplace is getting into it to begin with. It is difficult for a ND person to know if they should disclose their difference during an interview or not as, while not ethical or legal, disclosing this may be the reason they don't get hired. Cooper & Kennady (2021) state that 60% of their autistic sample in their research cited workplace bullying as one of the leading things that led to being fired or resigning. Often times happening to the same person at their next job.

ND people also often struggle to find work as people believe that they will be a burden and won't be able to provide anything useful to the business. This is untrue, as Cooper & Kennady found with their research, ND people can bring many strengths to the workplace.

Chapter 4
Research Design

4.1 Collecting Data

There are several tools online that enable someone to create a questionnaire/survey of some sort. However, many of these have either a paywall, login restriction or are full of features that I would have limited access too. Therefore, I have decided that I will use Google Forms as it is easy to access thanks to the university and easy to use. I can also link it to a Google Sheets to put the data into an organised document making it clear and easy to evaluate.

I intend running semi-structured interviews with respondents that complete the questionnaire. This may be hard as I find it difficult to interview people and people on the spectrum may find it difficult to be interviewed for something that asks this much about their work life and the difficulties they may have had as part of that. This is often an issue with people who are on the Autistic spectrum

Having a form for people to complete would be much less intimidating for people with ASD, Anxiety, or another neurological difference as it allows them to complete it in their own time. This way they fully understand the questions and can be confident in their responses.

4.2 Ethics

I have applied and had an ethics approval form granted. I have made sure to follow all of the requirements to keep the data anonymous and safe for those taking part in my research. My ethics number is TETHIC-2022-103719

4.3 Supporting Artifact Requirements

My supporting artifact will be a database to control the flow of the tasks and data that people will need to complete their current task. It will need to have separate tables between the tasks and sub-tasks. Each of which will store information on the relevant task/sub-task. This will be how the tasks are given to the user, one sub-task at a time, so that the user doesn't become overwhelmed.

One of the benefits to the design of my database is that it can be implemented into an already existing application that a company may have. This way, people won't need to download an additional app and can use the relevant one for their company, allowing for quick and easy access. This is because my database will allow different types of software to access it meaning the database won't be tied to a specific type of software. Therefore, instead of only being accessible via a web app or mobile app, it is accessible via both and more.

The supporting artifact must be able to show that the breaking down of tasks is possible and can be presented clearly (in terms of a command line interface). It must

show that tasks have many or one sub-task and that one sub-task can be part of multiple tasks (e.g., "go to room X", "open file Y" or "find person Z"). These clear and concise instructions should be understandable by anyone.

I will be using the virtual machine (VM) provided by the university to create my database and run the queries. This is the easiest and safest way to do this as I know how to use the software well and I know that the VM contains PostgreSQL (PSQL), a database management system (DBMS).

4.4 Questionnaire Design

When creating the questionnaire, I wanted to make sure it wasn't too long that someone would lose concentration while completing it. However, I wanted to make sure that I asked all of the relevant questions, to balance this out I clearly stated at the start of the questionnaire that it could be paused, and the participant could come back to it at a later date. Thus, allowing them the freedom of doing it at their own pace.

I chose to create a questionnaire as it is easier so read and answer questions as you have time to think about the answer, especially when the questions are asking some personal questions about your work life. I mentioned the fact that I might interview the participants, however, I made it very clear that this was only a maybe as I have anxiety myself and wasn't sure if I would be able to conduct an interview, especially having to interview people that I have never spoken to before.

I also thought that people might find it difficult to be interviewed as it can be an intimidating process for anyone, not just people who are ND. However, when I mentioned during my questionnaire that I would potentially be interviewing people if they were interested, all of the participants responded with a "Yes" meaning they were happy for me to contact them if I wanted to interview them.

Of course, this may just be because my list of participants is so small. If I were to have had more participants, I would have expected to have just as many if not more people saying no to the interview. So due to the small participant size I cannot be certain on this outcome. The percentage of people who agreed to potential interviews is seen by my supervisor as a positive as this could mean that the way the form was designed was not seen as intimidating by the respondents.

I decided that I would use Google Forms to create my questionnaire. I knew that I had access to it through my university account and that it would allow me to easily analyse the data that I would receive by both putting the results into a spreadsheet and providing charts to visually represent some of the data.

Using Google Forms also meant that if a participant was logged in with their Google account, they would be able to complete part of the questionnaire and then stop and return to it later.

I was able to make the questions clear and concise using Google Forms as I had plenty of space to type out an explanation if I felt the question was a bit complicated and then allowed me to get multiple different kinds of responses; short, long, open, closed, etc. Allowing for a diverse range of information for me to use when creating my database and analysing the results.

Chapter 5
Supporting Artifact

5.1 Database Design
5.1.1 Mock Up

Manager
manager_ID
manager_Name

Task
task_ID
task_brief
task_child_ID

subTask
subTask_ID
subTask_text
subtask_parent_ID

employeeTask
subTask_ID
employee_ID

Employee
employee_ID
employee_name

5.1.2 First Draft

Task
Field
Field
Field

taskSubTask
Field
Field
Field

subTask
Field
Field
Field

Staff
Field
Field
Field

staffTask
Field
Field
Field

staffRole
Field
Field
Field

Role
Field
Field
Field

5.1.3 Second Draft
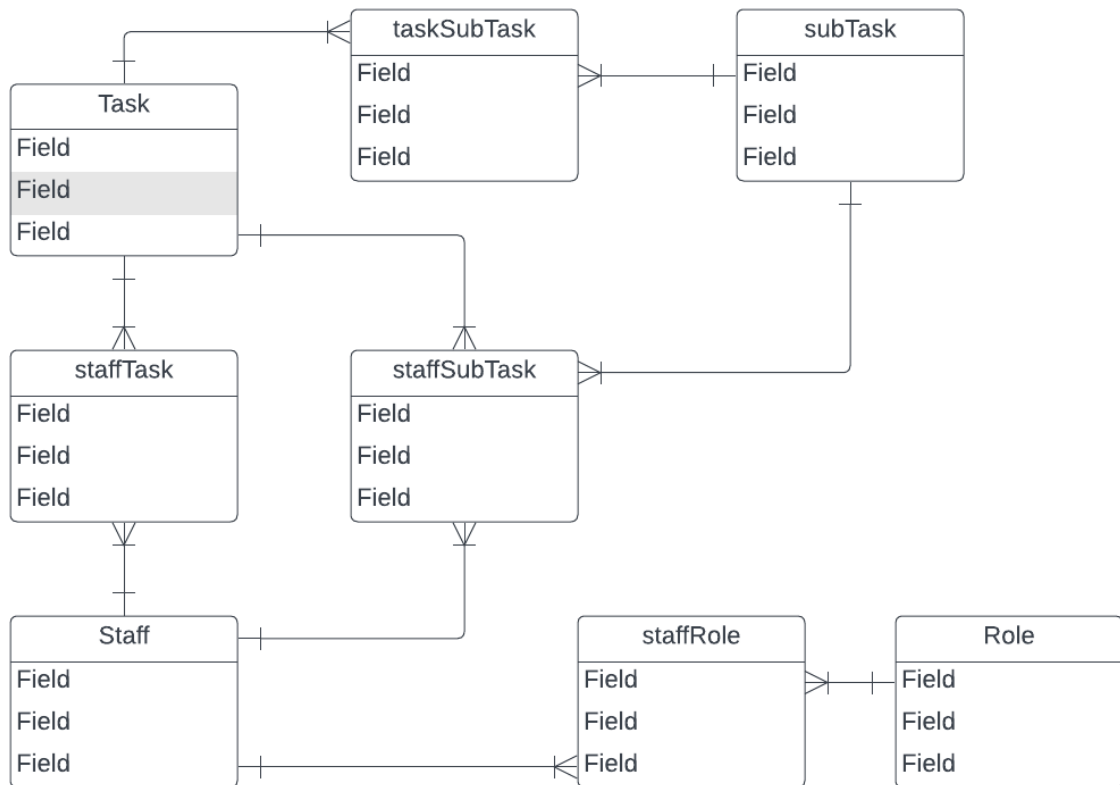
5.1.4 Final Draft
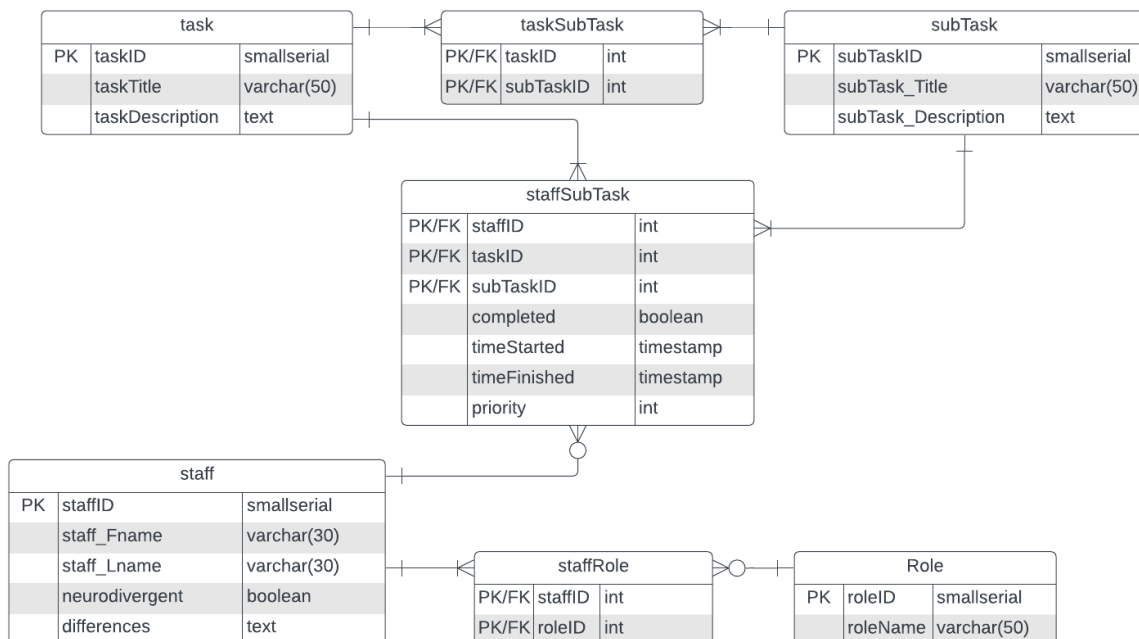
5.2 Data Dictionary

5.2.1 Task

task						
Attribute_Name	Key	Index	Data Type & Size	Domains & Constraints	FK Reference	Description
taskID	PK		SMALLSERIAL	NOT NULL		
taskTitle			VARCHAR(50)	NOT NULL		A title for the required task that is no more than a few words or a short sentence.
taskDescription			TEXT	NOT NULL		A more in-depth description for the task.

Table 3: Data Dictionary - Task

5.2.2 SubTask

subTask						
Attribute_Name	Key	Index	Data Type & Size	Domains & Constraints	FK Reference	Description
subTaskID	PK		SMALLSERIAL	NOT NULL		
subTask_Title			VARCHAR(50)	NOT NULL		A title for the subTask that is no more than a few words.
subTask_Description			TEXT	NOT NULL		A more in-depth description for the subTask (but recommended to too much).

Table 4: Data Dictionary - subTask

5.2.3 Staff

Staff						
Attribute_Name	Key	Index	Data Type & Size	Domains & Constraints	FK Reference	Description
staffID	PK		SMALLSERIAL	NOT NULL		
staff_Fname			VARCHAR(30)	NOT NULL		Staff members name
staff_Lname			VARCHAR(30)	NOT NULL		----
neurodivergent			BOOLEAN	NOT NULL		Is the staff member neurodivergent?
differences			TEXT	NULL		Somewhere to say what types of neurodivergence does the staff member have and how it affects them.

Table 5: Data Dictionary - staff

5.2.4 Role

Role						
Attribute_Name	Key	Index	Data Type & Size	Domains & Constraints	FK Reference	Description
roleID	PK		SMALLSERIAL	NOT NULL		
roleName			VARCHAR(50)	NOT NULL		Name of the role.

Table 6: Data Dictionary – role

5.2.5 TaskSubTask

	taskSubTask					
Attribute_Name	**Key**	**Index**	**Data Type & Size**	**Domains & Constraints**	**FK Reference**	**Description**
taskID	PK/FK		INT	NOT NULL	task.taskID	
subTaskID	PK/FK		INT	NOT NULL	subTask.subTaskID	

Table 7: Data Dictionary – taskSubTask

5.2.6 StaffSubTask

	staffSubTask					
Attribute_Name	**Key**	**Index**	**Data Type & Size**	**Domains & Constraints**	**FK Reference**	**Description**
staffID	PK/FK		INT	NOT NULL	staff.staffID	
taskID	PK/FK		INT	NOT NULL	task.taskID	
subTaskID	PK/FK		INT	NOT NULL	subTask.subTaskID	
completed			BOOLEAN	NOT NULL		Is the task completed?
timeStarted			TIMESTAMP	NOT NULL		When the task started.
timeFinished			TIMESTAMP	NULL		When the task finished.
priority			INT	NOT NULL		How important the task is on a scale of 1-5. 1 being highest priority.

Table 8: Data Dictionary - staffSubTask

5.2.7 StaffRole

	staffRole					
Attribute_Name	**Key**	**Index**	**Data Type & Size**	**Domains & Constraints**	**FK Reference**	**Description**
staffID	PK/FK		INT	NOT NULL	staff.staffID	
roleID	PK/FK		INT	NOT NULL	role.roleID	

Table 9: Data Dictionary - staffRole

5.3 Transactional Analysis Matrix

Table Name -->	Task				SubTask				Staff				Role				TaskSubTask				StaffSubTask				StaffRoll			
Transaction Name	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D
Add new Staff Member									X	X											X	X	X		X	X		
Add new Task	X	X															X	X	X		X	X	X					
Add new SubTask					X	X											X	X	X		X	X	X					
Updating timeStarted																					X	X	X					
Updating timeFinished																					X	X	X					
Assigning a Task		X				X				X				X				X			X	X	X			X		
Updating neurodivergence										X	X																	
Updating differences										X	X																	
Updating completed																						X	X					
Updating Priority																						X	X					
Add new Role													X	X											X	X		
Update taskDescription		X	X																									
Update SubTask Description						X	X																					
Update TaskTitle		X	X																									
Update SubTask Description						X	X																					
Deleting a staff member who has left										X		X										X		X		X		X
Deleting a task that no longer needs to be completed		X		X														X		X		X		X				
Update a staff members role																										X	X	
How many tasks has a staff member completed?		X								X												X						
Add a subTask to an already existing task		X	X			X												X	X			X	X					
Assign a task to a staff member		X				X				X								X				X	X					

Table 10: Transactional Analysis Matrix

5.4 Queries

To demonstrate that my database works and can provide support in the way I would like, here are some queries that may occur on a regular basis within the database:

5.4.1 What task do I have to do?

An employee will want to know what task they have been assigned.

```
SELECT * FROM staffSubTask WHERE staffID = 2 AND completed = false;
```

```
fyp=# SELECT * FROM staffSubTask WHERE staffID = 2 AND completed = false;
 staffid | taskid | subtaskid | completed |     timestarted     | timefinished | priority
---------+--------+-----------+-----------+---------------------+--------------+----------
       2 |     10 |        46 | f         | 2023-06-22 09:00:54 |              |        1
(1 row)
```

5.4.2 What subtask am I on?

An employee will need to know what subtask they are on so that they know what to do for that step.

```
SELECT staff.staffid, staff.taskid, staff.subtaskid, sub.subtask_description FROM staffsubtask staff
  JOIN subtask sub ON staff.subtaskid = sub.subtaskid;
```

```
 staffid | taskid | subtaskid |                                                subtask_description
---------+--------+-----------+-------------------------------------------------------------------------------------------------------
       6 |      1 |         1 | Praesent lectus.
       1 |      2 |         6 | Phasellus in felis. Donec semper sapien a libero. Nam dui.
       9 |      3 |        15 | Nullam molestie nibh in lectus. Pellentesque at nulla.
       4 |      4 |        19 | Quisque id justo sit amet sapien dignissim vestibulum. Vestibulum ante ipsum primis in faucibus orci luctus et ultr
ices posuere cubilia Curae; Nulla dapibus dolor vel est.
       5 |      4 |        20 | Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin risus. Praesent lectus.
       9 |      5 |        21 | Fusce consequat. Nulla nisl.
       2 |      5 |        25 | Suspendisse potenti. Nullam porttitor lacus at turpis.
       7 |      6 |        30 | Integer non velit. Donec diam neque, vestibulum eget, vulputate ut, ultrices vel, augue. Vestibulum ante ipsum prim
is in faucibus orci luctus et ultrices posuere cubilia Curae.
       8 |      7 |        32 | Phasellus id sapien in sapien iaculis congue. Vivamus metus arcu, adipiscing molestie, hendrerit at, vulputate vita
e, nisl. Aenean lectus.
       5 |      8 |        36 | Duis mattis egestas metus.
       7 |      9 |        41 | Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin interdum mauris non ligula pellentesque ultrices.
      10 |      9 |        42 | Aenean fermentum. Donec ut mauris eget massa tempor convallis.
       3 |      9 |        43 | Fusce posuere felis sed lacus.
       6 |      9 |        45 | Lorem ipsum dolor sit amet, consectetuer adipiscing elit.
       2 |     10 |        46 | Maecenas tincidunt lacus at velit. Vivamus vel nulla eget eros elementum pellentesque. Quisque porta volutpat erat.
(15 rows)
```

5.4.3 How many subtasks has an employee completed?

An employer will want to see how an employee is getting along with the task they were assigned. This allows the employer to see if which subtask the employee is on. In this example the employee is on the first subtask for task 10. It is just called subtask 46 for the purposes of dummy data.

```
SELECT s.staffid as "Staff ID", s.taskid as "Task ID", sub.subtaskid as "Sub-Task ID", subt.subtask_title as "Sub-Task" FROM
staffsubtask s JOIN task t ON s.taskid = t.taskid JOIN tasksubtask sub ON t.taskid = sub.taskid JOIN subtask subt ON
subt.subtaskid = sub.subtaskid WHERE s.staffid = 2 AND s.completed = false AND sub.subtaskid <= s.subtaskid ORDER BY
s.staffid;
```

```
Staff ID | Task ID | Sub-Task ID |  Sub-Task
---------+---------+-------------+------------
       2 |      10 |          46 | subTask 46
(1 row)
```

5.4.4 Is an employee ND?

An employer might want to know if an employee is ND so they can assign them the right task.

```
SELECT * FROM staff WHERE neurodivergent = true;
```

```
fyp=# SELECT * FROM staff WHERE neurodivergent = true;
 staffid | staff_fname | staff_lname | neurodivergent |                                         differences
---------+-------------+-------------+----------------+----------------------------------------------------------------------------------
       2 | Adella      | Keirle      | t              | Nam dui.
       3 | Roanna      | Dorow       | t              | Donec dapibus. Duis at velit eu est congue elementum.
       4 | Jordain     | Ewles       | t              | Pellentesque viverra pede ac diam. Cras pellentesque volutpat dui.
       5 | April       | Colwell     | t              | Pellentesque ultrices mattis odio. Donec vitae nisi.
       7 | Row         | Vasiltsov   | t              | Fusce lacus purus, aliquet at, feugiat non, pretium quis, lectus.
       8 | Xymenes     | Bellham     | t              | Aliquam sit amet diam in magna bibendum imperdiet.
      10 | Onfroi      | Robun       | t              | Nulla neque libero, convallis eget, eleifend luctus, ultricies eu, nibh. Quisque id justo s
it amet sapien dignissim vestibulum.
(7 rows)
```

5.4.5 When did an employee start their latest task?

An employer might want to know how long an employee has been doing a specific task. They might want to know this if the employee hasn't asked for a new task in a while, so they want to make sure everything is still ok.

```
SELECT * FROM staffsubtask WHERE staffid = 7 ORDER BY timestarted DESC;
```

```
fyp=# SELECT * FROM staffsubtask WHERE staffid = 7 ORDER BY timestarted DESC;
 staffid | taskid | subtaskid | completed |      timestarted     |      timefinished    | priority
---------+--------+-----------+-----------+----------------------+----------------------+----------
       7 |      9 |        41 | f         | 2023-06-21 13:15:42  |                      |        3
       7 |      6 |        30 | t         | 2023-06-20 13:39:18  | 2023-06-20 16:58:58  |        2
(2 rows)
```

5.4.6 How many tasks has an employee completed?

An employer might want to know how many tasks an employee has completed.

```
SELECT * FROM staffsubtask WHERE staffid = 6 AND completed = true;
```

```
fyp=# SELECT * FROM staffsubtask WHERE staffid = 6 AND completed = true;
 staffid | taskid | subtaskid | completed |      timestarted     |      timefinished    | priority
---------+--------+-----------+-----------+----------------------+----------------------+----------
       6 |      9 |        45 | t         | 2023-06-21 13:42:58  | 2023-06-21 15:14:26  |        3
(1 row)
```

5.5 Assumptions

When creating the database, the assumptions that I made were that managers would understand that they had to input tasks manually. I am aware this can potentially be completed quickly with an interface; however, I was not focused on that part of the software.

I also assumed that a company's app development team would be able to create an interface for my database to be interacted with via their already existing app. Meaning that my database can essentially be a plugin and all it requires is an interface and it's ready to go.

In addition, when assigning a task, I made the assumption that a task can only be assigned to one staff member at a time. This would be so that the staff member is able to go at their own pace and tick off the sub-tasks as they go along. Whereas if there were multiple people assigned to a task, then the fastest person would either be waiting for others or leaving them behind as they would be ticking tasks off while others still need to see them.

I assume that the priority numbers start with one being the highest priority number as that is the generally accepted way to read priority numbers.

I have made the assumption that managers will be aware of how to input the tasks data into the database, meaning that they use the sub-task system effectively and don't overload the ND user with a large number of sub-tasks, while also not doing the opposite and giving the ND user too little sub-tasks and them therefore not understanding what it is they need to do.

5.6 Code

I have included the database code in Appendix E. It can also be found by clicking this GitHub link.

Chapter 6
Results

6.1 Data Received
The data that I received from my questionnaire was extremely interesting. I asked about peoples diagnoses, when they were diagnosed or when they self-diagnosed, if they had any other

6.1.1 Pilot Questionnaire
I initially ran a pilot questionnaire. This was to see the kind of responses I might get and to make sure the questions were worded in a way that people understood. I wanted to make sure I wasn't too technical that the questions were confusing but also not too simple or overexplained that people felt that I was patronising them.

I asked nineteen questions to make sure I was being thorough and had four people respond to the pilot questionnaire. One person I sent the pilot questionnaire to didn't answer it. This was cleared up when they sent me a message and explained that they liked the format and all of the questions made sense, they just didn't feel that they should answer the questionnaire because they haven't been diagnosed with anything that would class them neurodiverse.

This was fine as I wasn't looking for results at the time and I purposely sent the questionnaire to someone I knew was NT so that I could get a different kind of perspective on it, allowing me to be fully confident in the real questionnaire.

I have included the pilot questionnaire results in Appendix D.

6.1.2 Questionnaire
I managed to receive nine responses for my questionnaire. This isn't as many as I was hoping for, however, this has both positive and negative connotations. It shows that ND people aren't as likely to tell someone they don't know about their personal life, especially when it comes to how they are different. I got permission to post the link to my questionnaire in a Discord server (which I am a part of) specifically for people with ND differences which contains around 80 people, all of whom are ND and I still only managed to get nine responses. This goes to show that even in a safe space ND people still feel anxious about opening up.

The people that did respond were from a good range of backgrounds. Some older than 46 years old, with the majority in the expected age range of 16-25 years.

6.2 Evaluation of Results

6.2.1 Summary
The results I received were interesting. I managed to get a good range of people even from the limited number of responses. I asked multiple open and closed questions so that I was able to get a variety of qualitative and quantitative results. These gave me statistics to work with and opinions to take on board. I found all of the results extremely useful and supportive of my research.

Please note: Some of the words are hidden or cut off in the screenshots of the results. This is down to Google Sheets formatting when reviewing the summary of the results.

Respondents taking the quiz were able to see all of the text and nothing was hidden or cut off.

6.2.2 Q1:

Please read and accept the following:
All participants had to accept the conditions. This was to ensure that I stayed in line with the ethical part of the project and that respondents were aware of how long I would be holding their data.
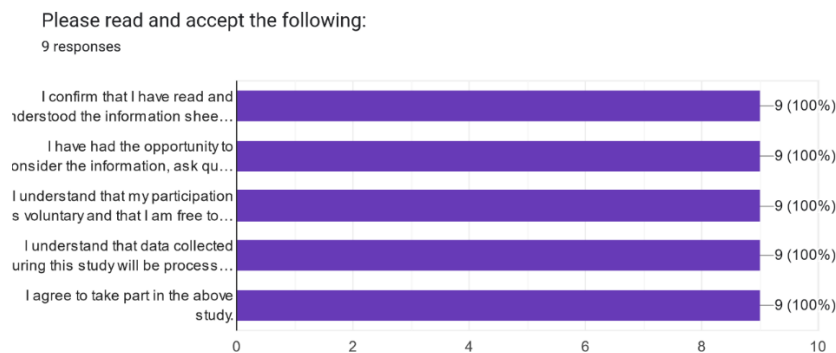

Figure 1: Question 1 Responses

6.2.3 Q2:

Would you be ok if I were to contact you about your results for further discussion? I will only contact you if I need to discuss your results to help support my research. You can come back and change your mind at anytime before you submit this questionnaire.
All respondents were happy to be interviewed if the need arose. This was interesting because I wasn't expecting such an overwhelmingly positive response to this. However, this may just be down to the small number of respondents, if there were a larger group then I feel that the results would be varied.
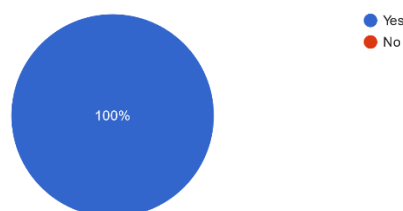

Figure 2: Question 2 Responses

6.2.4 Q3:

You may receive an email from my university email account (up938769@myport.ac.uk). The subject will be "Workplace Communication Questionnaire – Ryan Harris"
All respondents provided their emails. It isn't relevant to include their emails here.

6.2.5 Q4:

***Are you formally diagnosed with Autism Spectrum Disorder or self-diagnosed?
You do not need to be formally diagnosed to answer this questionnaire, this just
helps me to see if there are any differences between those who have been formally
diagnosed and those that haven't.***

The majority (78.8%) of respondents were formally diagnosed as autistic with the
remaining 22.2% of people being self-diagnosed. This provides more insight for the
next question.

Are you formally diagnosed with Autism Spectrum Disorder or self-diagnosed? You do not need to
be formally diagnosed to answer this questionnaire...e been formally diagnosed and those that haven't.
9 responses

- Formally Diagnosed
- Self-Diagnosed
- Not Autistic

22.2%

77.8%
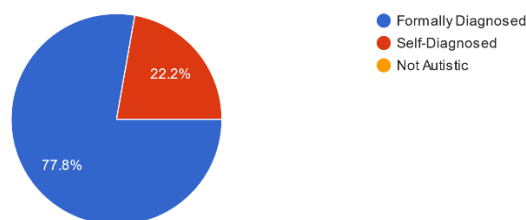
Figure 3: Question 4 Responses

6.2.6 Q5:

When were you diagnosed?

57.1% of respondents diagnosed with autism as an adult. This is both a positive and a
negative in that these people were able to live their lives just like anyone else, but
didn't get all of the help that they may have needed. This also explains the results of
the previous question as more and more people are being diagnosed with
neurological differences nowadays and a lot of those people are above the age of
18.

The 42.9% of respondents diagnosed under the age of 18 show that thanks to those
who are older and still being diagnosed, people know what to look for when it
comes to ND people of a younger age. If the group of respondents had been larger
I would expect an increase in childhood diagnoses compared to adulthood.

When were you diagnosed?
7 responses

- Childhood (Under 18 years of age)
- Adulthood (Over 18 years of age)

57.1%

42.9%

Figure 4: Question 5 Responses

23

6.2.7 Q6:

When did you first self-diagnose as autistic?
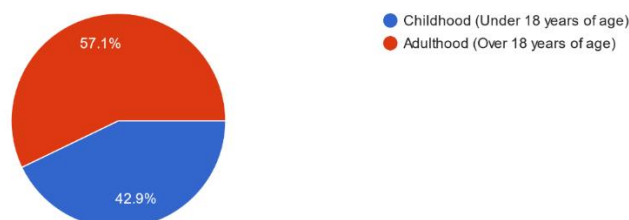Both self-diagnosed respondents were adults when they realised, they are likely autistic. This is most likely due to the fact that growing up it is difficult to understand things like autism unless you are exposed to it more than most (excluding yourself). Once reaching adulthood and being a part of the "real world" or attending places like university, it allows people to find out more about themselves and realising you may be autistic is a huge thing. Both of these respondents are in the 16-25 year age range and self-diagnosing, while not confirmable, is one of the first steps to getting the formal diagnosis and is incredibly important to know when you're still growing into an adult.
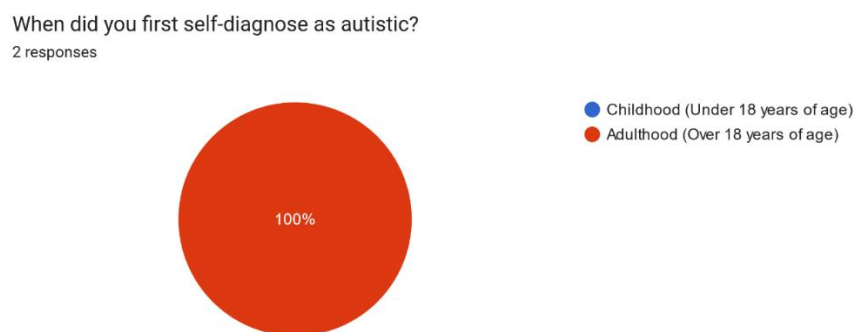

When did you first self-diagnose as autistic?
2 responses

● Childhood (Under 18 years of age)
● Adulthood (Over 18 years of age)

100%

Figure 5: Question 6 Responses

6.2.8 Q7:

If you are diagnosed with another neurodivergent difference then please select any that apply here.
I have only included 8 options here (plus a no diagnosis option) so that there isn't an overwhelmingly large amount of options.

If you are diagnosed with another neurodivergent difference then please select any that apply here. I have only included 8 options here (plus a ...re isn't an overwhelmingly large amount of options.
8 responses

ADHD (Attention Deficit/Hyperac...	3 (37.5%)
ADD (Attention Deficit Disorder)	3 (37.5%)
Anxiety	3 (37.5%)
Depression	4 (50%)
Dyslexia	1 (12.5%)
Dyspraxia	1 (12.5%)
OCD (Obsessive Compulsive D...	0 (0%)
ot listed (state as answer to ne...	2 (25%)
No diagnosis	1 (12.5%)

Figure 6: Question 7 Responses

50% of respondents have been diagnosed with depression. This is interesting because the respondents who selected this option are in the younger categories when it comes to age range (16-25 and 26-35), which shows that even though they have been diagnosed at a younger age and have more time to adjust to their differences, the diagnoses doesn't help how they feel about the world around them, even knowing why they see it differently.

24

6.2.9 Q8:

Please list any diagnosis here that wasn"t listed above. Separate them with a comma after each.
If you were able to fill the box(es) of all the relevant diagnosis then you can skip this question.
If you filled in any boxes above but have another difference that wasn't listed, please state them here, separated by commas:

Only one respondent said that they had no other diagnoses. Some other diagnoses that respondents mentioned were; global development delay (GDD), Dyscalculia, Complex post-traumatic stress disorder (PTSD) – Hyper vigilance and speech and language difficulties.

Please list any diagnosis here that wasn"t listed above. Separate them with a comma after each.

If you were able to fill the box(es) of all the relevant diagnosis then you can skip this question.

If you filled in any boxes above but have another difference that wasn't listed, please state them here, separated by commas:

4 responses

Learning difficulties, speech and language difficulties

Dyscalculia

GDD-Global development delay

Complex PTSD - Hyper vigilance

Figure 7: Question 8 Responses

6.2.10 Q9:

What age range do you fit into?
As expected, most of the respondents (66.7%) were between the ages of 16-25 years. This was expected as I was mainly asking university students to fill out the questionnaire. There is also more of a chance that someone of a younger age is diagnosed than someone of an older age, due to the fact that being ND is more accepted now than it used to be. People of older ages may not want to be diagnosed with things like ASD as it was shunned when they were younger.
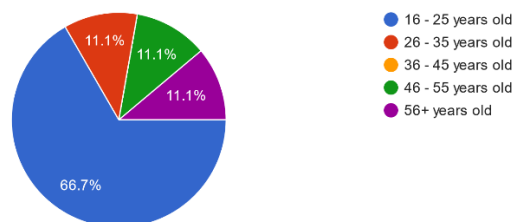
What age range do you fit into?
9 responses

11.1% 11.1%
11.1%

66.7%

● 16 - 25 years old
● 26 - 35 years old
● 36 - 45 years old
● 46 - 55 years old
● 56+ years old

Figure 8: Question 9 Responses

6.2.11 Q10:

How many years of experience do you have in any kind of workplace?
This includes; Paid, Volunteer, Work Experience and Placements.

This question provided me with a lot of insight. Multiple (33.3%) people have had some kind of work for between 2-4 years, followed closely by 6-8 years. This is showing that ND people can work well if given the right opportunity. While this is total years worked and not years worked at each individual workplace, it shows that ND people will keep trying to be part of society and are just as capable as anyone else.

How many years of experience do you have in any kind of workplace? This includes; Paid, Volunteer, Work Experience and Placements.
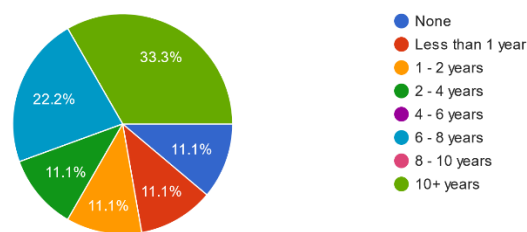
9 responses

Figure 9: Question 10 Responses

6.2.12 Q11:

What is the longest amount of time you have been employed at a single workplace?
Explanation: In this context a workplace is one location. So if you have worked in multiple locations, but for one company, then you have worked in multiple workplaces.

This result is not what I was expecting. 50% of respondents have worked for more than 3 years in a single workplace. With some going on to state as many as 5-20 years. Each respondent who has worked over three years in the same place is in a different age category (56+, 46-55, 26-35 and 16-25). The one outlier seems to be the respondent who is the youngest in this 50% to have worked at the same place for so many years. The other respondents are more understandable due to having more worldly experience and time.

Due to the fact that just below 50% of the respondents are in the older categories it skews the results. If I had a larger group of respondents then I would expect to see more of the ranges from less than 6 months to 2 years, especially with the younger respondents. Therefore, the age range must be taken into consideration when looking at these results.

What is the longest amount of time you have been employed at a single workplace?   Explanation: In this context a workplace is one location. So if you...pany, then you have worked in multiple workplaces.

8 responses
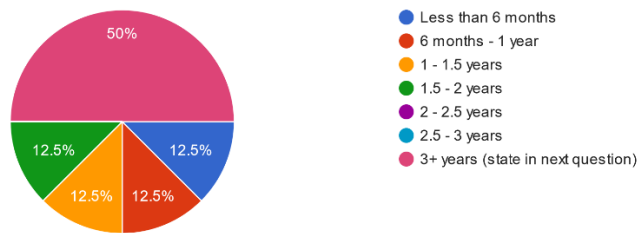
Figure 10: Question 11 Responses

6.2.13 Q12:

If you have worked in a single workplace for longer than 3 years, please make sure the 3+ years is selected above and state how many years you have worked in a single workplace here:

If you have worked in a single workplace for longer than 3 years, please make sure the 3+ years is selected above and state how many years you have worked in a single workplace here:

4 responses

| 5 years |
| 8 years |
| 20 yrs |
| Fifteen |

Figure 11: Question 12 Responses

6.2.14 Q13:

How was the communication in your workplace?

These results are what I was expecting and line up with my research well. It shows that only 25% of respondents had good communication in the places that they worked. This shows that most places don't take ND people into consideration when communicating within the workplace and don't tell employees things very often in advance.

Figure 12: Question 13 Responses

6.2.15 Q14:

If you have a diagnosis, did you feel comfortable enough to tell anyone at your workplace?

50% of respondents did not feel comfortable enough to tell anyone about any diagnoses they had. This again backs up the research by Cooper & Kennady (2021) in which they found 60% of their autistic sample had cited bullying or other workplace problems as their reason for being fired or leaving. This kind of behaviour is what makes people less comfortable to tell people about their diagnosis. This is a dilemma for those people as they need to disclose their diagnosis in order to be able to get the help they need. Should they really have to risk being bullied or something related just so they can get the help they need to succeed?

A few (37.5%) respondents stated that they had felt comfortable enough to tell someone at their workplace.

If you have a diagnosis, did you feel comfortable enough to tell anyone at your workplace?
8 responses

Figure 13: Question 14 Responses

6.2.16 Q15:

How many people did you tell about your diagnosis in the workplace?
If you have told people in multiple places then please select the number of people you told in the workplace where you worked the longest.

Even though most did not feel comfortable enough to tell people about their diagnoses many still did. Most people (33.3%) stated that they told at least one other person in their place of work about their diagnoses. One person stated more than 5 people, and said that they had told everyone in their workplace about their diagnosis.
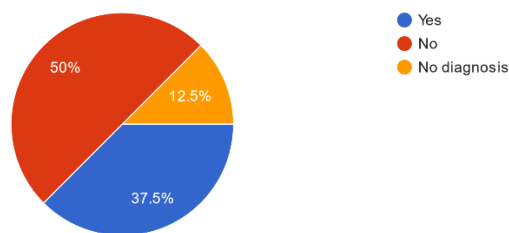
How many people did you tell about your diagnosis in the workplace? If you have told people in multiple places then please select the number of p...ld in the workplace where you worked the longest.
6 responses
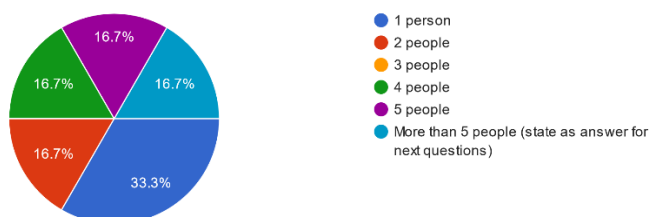
Figure 14: Question 15 Responses

6.2.17 Q16:

If you told more than 5 people about your diagnosis, how many did you tell?

If you told more than 5 people about your diagnosis, how many did you tell?

2 responses

N/A

told everyone in the workplace

Figure 15: Question 16 Responses

6.2.18 Q17:

Whom did you tell?

As expected, most people (83.3%) feel comfortable disclosing things to others that are on the same level as them. This is understandable as people that you work at the same level as tend to be kinder and are easily able to help you out if needs be. In addition to a colleague, three people also told a manager or supervisor, one of which told both, and one person told the owner in addition to their colleague.

An additional role that was mentioned by a respondent was that they had told an interviewer about their diagnoses.

Whom did you tell?
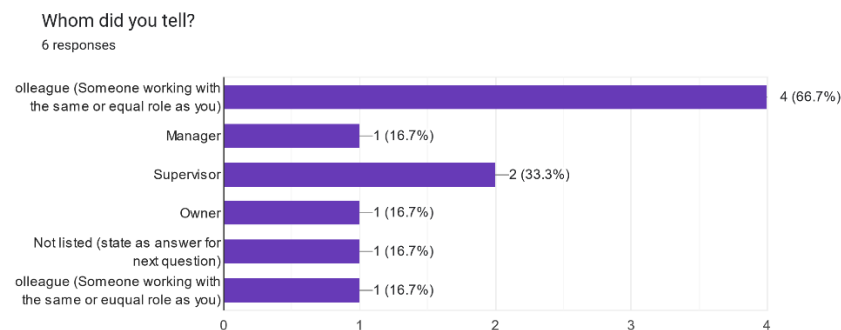
6 responses

Figure 16: Question 17 Responses

Please note: There seems to be another error with Google Forms for this question as one of the options is repeated twice. I have manually calculated the percentage to be 83.3%.

6.2.19 Q18:

Please list the role(s) of the person you told at your workplace, if not mentioned above.

Please list the role(s) of the person you told at your workplace, if not mentioned above.

2 responses

N/A

Interviewer

Figure 17: Question 18 Responses

6.2.20 Q19:

Did you recieve any support at your workplace?
Explanation: In this context, support would be things like;
- Making things easier to understand.
- Making the work environment more sensory friendly.
- Taking time to explain how to do something you haven't done before.
- Taking the time to re-explain the task to you if you don't understand or forget between now and the last time you needed to complete the task.

This chart shows that an overwhelming amount of the respondents did not receive any support at any of their workplaces. This is shocking to see as a result given the number of people that told a member of staff higher up than them. If I had conducted interviews, I would have asked if this was due to the management not caring or not knowing what to do. In any case, this further backs up my research as it shows people still need to be educated on what a neurological difference is and how they can help people with them.

Did you recieve any support at your workplace?   Explanation: In this context, support would be things like; - Making things easier to understand. ... and the last time you needed to complete the task.

8 responses
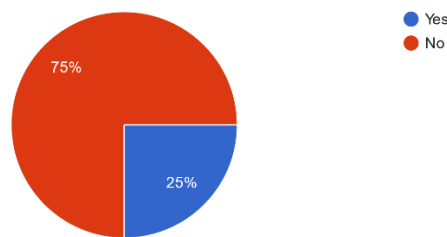
Figure 18: Question 19 Responses

6.2.21 Q20:

What kind of support was provided to help you work to the best of your abilities?

The two respondents that did receive support mentioned many of the things that had been suggested by people like Petty et al (2023) and Remington et al (2022). An interview here would have given me insight into the effectiveness of these reasonable adjustments and how they helped the respondents.

What kind of support was provided to help you work to the best of your abilities?

2 responses

Taking time to explain things, remote work, flexible hours, could listen to music in headphones

A list of tasks needed to be done, extended deadlines, repeated instructions when needed, emotional support and help completing tasks

Figure 19: Question 20 Responses

6.2.22 Q21:

Did you find that the support given was sufficient, or do you feel that you needed more support?

If it is different in certain situations then feel free to leave examples below.

Following on from the previous question, the two respondents that did gain support were positive about the kind of support they received. One respondent said that it was good, which implies that they were happy with the support and it could perhaps have been more than what they were hoping for.

The second of the two respondents said that the support was right. My interpretation of this is that the support given was adequate and enabled the respondent to complete their work, however, the support wasn't as much as they wanted. Again, if I had been able to conduct interviews with the respondents, I would have been able to ask them what they meant by this and how they would suggest other respondents ask for the same or similar things.

Did you find that the support given was sufficient, or do you feel that you needed more support?

If it is different in certain situations then feel free to leave examples below.

2 responses

It was good

It was right

Figure 20: Question 21 Responses

6.2.23 Q22:

What would you have wanted your workplace(s) to have done to better support you?

Some examples from my research of things that neurodivergent people found supportive were:

- Environmental modifications/reducing sensory processing:

Such as reducing noise, adjusting lighting, allowing employees to wear ear/headphones.

- Modifications to communication:

Such as providing written instructions, reduced social interaction and flexible working hours.

- Support and Advice from understanding co-workers to foster positive workplace relationships.

- Reassurance in stressful situations.

From this question I was able to ascertain how much help the respondents wanted to receive from their employer(s). Things mentioned here that the respondents would have found useful are things like; having instructions written down, environmental modifications, support and advice from co-workers, an understanding of their condition, use of headphones/listening to music, reassurance. These are all reasonable adjustments that are either mentioned by Petty et al (2023) or are similar to the suggestions she made. The fact that the respondents know what will help them to better themselves is a positive if they can talk to their employers about it. However, due to the lack of support many of them receive, it would be better if the information were to come from someone else who can help the employer to understand the difficulties these people go through on a daily basis.

31

What would you have wanted your workplace(s) to have done to better support you?

Some examples from my research of things that neurodivergent people found supportive were:

- Environmental modifications/reducing sensory processing:
Such as reducing noise, adjusting lighting, allowing employees to wear ear/headphones.

- Modifications to communication:
Such as providing written instructions, reduced social interaction and flexible working hours.

- Support and Advice from understanding co-workers to foster positive workplace relationships.

- Reassurance in stressful situations.
8 responses

Written instruction

I feel like my support needs were met and if I asked for more reasonable adjustments, they were made

All of above

Opportunity to wear noise cancelling ear plugs

All of these things. I've had many different jobs. In most I have only lasted 4 months tops due to sensory struggles, job stress or workplace bullying. The job I lasted in for 8 years started out suitable and over time became unmanageable because of burnout. I feel a lot is needed to educate people and managers about autism.

I would have liked more reasonable adjustments and understanding of my condition

Allowing employees to use headphones and flexible hours and earlier notice

Not sure as I have not disclosed

Figure 21: Question 22 Responses

6.2.24 Q23:

Thinking about the answers you have given to all of the previous questions, how do you feel about this as a solution to help try and fix the struggles and enhance the workplace experience?

At the end of the questionnaire, I asked for some feedback on the artefact that I had created. There was lots positive feedback and many people said that they would find this idea useful. One respondent pointed out how it might seems like the employer has to do "extra work" to fill out the database to begin with. This is a concern that I share and am fully aware of. I will speak more about it in Chapter 8.4.

Thinking about the answers you have given to all of the previous questions, how do you feel about this as a solution to help try and fix the struggles and enhance the workplace experience?

9 responses

Good solution, but I have seen a similar tool already

I think this sounds like a good idea as that breakdown will will ensure that we get a clear understanding of the task at hand and would prevent stress or potentially injury

As someone with the ability to only perform tasks sequentially, this kind of decomposition would be useful

I think that would be very useful, both so NT co-workers understand better their ND piers, not only that but it would help with motivation, planning and executive dysfunction

I think it'd be very helpful for task management & communicating to employers what progress is being made on a task. However, I worry that not all employers would be willing to do the 'extra work' inputting tasks in detail like that for us. (As some teachers/lecturers have said when I've asked about changing the written format of tasks set in the past)

If you can make it work for different job roles in different sectors, it would be amazing.

It's a bit mechanical but I can see how it might benefit, I like routine and lists so this could be okay, depending on the job type and variables

It is a good idea

I think this would be beneficial and saves time for colleges and supervisors as they wouldn't need to repeat things over

Figure 22: Question 23 Responses

Chapter 7
Planning and Management

7.1 Overview
Overall, the project has gone fairly well. I have been able to complete the questionnaire and send it out to lots of people. Unfortunately, I didn't get many responses, however, that isn't in my control. The people that I needed to fill out the questionnaire is incredibly specific and I can't just get anyone to fill it out due to the fact that my project is so specialised in neurological differences.

7.2 Set backs
Unfortunately, several things set me back while trying to complete my project. During the beginning of the academic year, I was having health issues and was constantly fighting to physically stay awake. I was still able to make progress on my project but it was extremely slow and I was immediately off of my original plan and Gantt chart.

During the second half of the academic year, things began to pick up and my project was underway. I was slowly making my way through the project but had to keep stopping and starting with the literature review. The literature review was extremely difficult as I had to make sure I was finding the relevant topics. This is even harder when there isn't very much research in this specific topic. Furthermore, even if/when I had found a topic, I thought was interesting and relevant to my project, I still had to try and read through it to make sure I understood what it was talking about. While that may seem like an easier task due to how connected I am to this topic, it was actually extremely difficult. I am autistic myself and have processing issues. This meant that I would have to comb through a resource multiple times to a) make sure I had something relevant, b) make sure it linked to what I was already talking about and c) to make sure that I understood it myself before writing up about the source that I had just found.

The cherry on the cake is that towards the end of the academic year, I required eye surgery. The recovery for this was extremely intense and meant that I couldn't even look at a computer screen for over a month. Therefore, having to defer my project alongside other coursework and exams.

7.3 Planning
Once things started to go downhill, I had to essentially throw away my original plan. Instead, I made weekly plans when I met with my supervisor each week. This helped me to stay on top of my management and I continued to create weekly plans until the final meeting, in which it was a three-day plan.

7.4 Management
I would meet with my supervisor weekly, even during the down periods. We would always give me a few goals to reach by the next meeting. This kind of management meant that I was able to keep going with my project, and helped me to just about keep up with where I was meant to be.

During the periods that I was able to work, I was able to manage my time accordingly and was able to get all of the relevant work done that I had to do at the time. Including my other modules alongside my project.

Chapter 8
Conclusion

I feel that overall, the project went quite well. I was able to research lots of relevant subjects that helped to support my argument and artifact, which allowed me to be confident with what I was creating.

8.1 Questionnaire

The questionnaire could have gone a bit better. I did everything I could to get more results from people, however, as my research also suggests, neurodivergent people are more anxious to share personal information, especially regarding their differences as they feel like they are pointing out what is "wrong" with themselves. Which of course isn't the case, but when society treats being different as a bad thing, it's difficult to see it any other way. I know this from experience so do not fault others for not feeling comfortable to answer my questionnaire.

I felt that the questions I asked in my questionnaire were relevant and informative. I made sure to provide any extra information that might be needed if the question was more complex, so that people would be able to understand.

I would definitely think about my questions a lot more next time. I forgot about linking them to my research questions and so, while the answers are mostly useful, there are some better questions that I could have asked to help inform my research better.

8.2 Would I do this project again?

Yes, I would absolutely do this project again. I was confident that I chose the right project when I spoke to my supervisor, Mark, and he was immediately supportive of it. This confidence was only increased when I began my research, even though I found it incredibly difficult.

8.2.1 How would I do it differently?

I would likely conduct interviews if I were to do this project again. Interviews would give me further insight into why people provided the answers they gave. Even though I spoke about potentially interviewing people for this project, I didn't interview anyone as I felt too anxious about it and that it might overwhelm me. However, now I have a better idea of what I need to do for a project like this and so I feel I would be more comfortable to attempt that sort of thing, if I were to do this project again.

8.3 Was the project worthwhile?

The project was absolutely worthwhile. There is so much misunderstanding of what being neurodivergent really is and there needs to be more information out there to help others like myself figure out the world around us, but also to help neurotypical people understand us better. Currently, in my opinion, it feels as though neurotypical people are a different species altogether when we really aren't. We're just a little different to the majority.

While I focused on the workplace for my project, in reality, my artifact can be used in almost any situation; daily living, university, sport/exercise,

8.4 Future Work

In the future I would like to continue the development of my database and create an interface so that it can actually be put to use. I would use SQLite to make it available to as many devices as I can as that would increase its accessibility.

I am lucky enough to have this opportunity as I have been invited to continue my project as a group has taken an interest and can see the benefit that my artifact can provide. The Autism Wellness Committee approached me as I have worked with several of the members during my time at university and they were aware of my project. They want my insight and knowledge in the development of apps and are talking about the potential of my artifact becoming a part of something that they are working on.

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Appendix A
Project Initiation Document

1. Basic details

Student name:	Ryan Edward Harris
Draft project title:	Improving communication between a neurotypical employer and their neurodivergent employees in regards to task management
Course and year:	Software Engineering | Year 3
Project supervisor:	Mark Venn
Client organisation:	N/A
Client contact name:	N/A

2. Degree suitability

My project is suitable for Software Engineering because it solves a problem using methods/skills that I have learnt on the course. Such as creating a functioning database.

Furthermore, being a Software Engineer is all about solving and finding solutions to problems, this is just another problem that I feel needs to be solved and this project is my solution to doing so.

3. Outline of the project environment and problem to be solved

The problem that I am investigating is the difficulties that a neurotypical (NT) person has when communicating with a neurodivergent (ND) person. In the case of my project, I will be focusing on communication between a NT person and people with autism spectrum disorder (ASD), however, I hope that my research would also be able to help other ND people.

I will be focusing on the communication that would happen in a workplace as it is important for every employee to know what they are doing and be given the same number of chances and opportunities so that they can all work to the best of their abilities and be rewarded equally.

This is worth working on as I know from experience that when someone tries to explain to an autistic person what it is that they need the autistic person to do, the majority of the time it will be overwhelming and contain too much information for the autistic person to process. This can then lead to the autistic person not completing the task to the required standards or even not starting the task at all as they don't understand what they are supposed to do or where to start.

Furthermore, the majority of the time, they won't know where to go for help, even if they do then it could be too difficult for them to know what to say.

For me this project is worth working on as it is very close to me due to the fact that I am autistic myself and know many people like me, who also run into these problems and would benefit from something like this being implemented into the workplace.

The intended readership/audience is everyone. Everyone should be able to read this research project and have a better understanding of the communication issues between NT and ND people. There isn't a way to specify a specific audience due to the fact that this is common in everyday life and anyone may run into this communication problem at any point.

The contextual significance of this topic is as I stated above. ND people can struggle with communicating with NT people. While some may have figured out a way to communicate, others are and will continue to struggle with this problem, unless a solution is provided. It is significant to me as I have this communication problem daily due to my ASD and it occurs even when talking to family and friends or lecturers who, while they may understand I have a diagnosis, they don't necessarily understand the struggles I go through or the increased amount of effort I have to put into a conversation than a NT person would have to.

The research questions that I am seeking to answer are;
- What situations in the workplace do ND people struggle with the most?
- Do employers do anything to support ND people as a whole?
  - Or is it a case-by-case basis where they only help those who ask for it instead of offering help from the start?
- What research has already been conducted in this area?
  - Has that research had an impact?

4. Project aim and objectives

The overall aim of the project is to reduce the communication gap between NT and ND people and provide a less stressful work environment for those with autism and other neurological differences.

The objectives that will lead me to meeting the aim of my project are as follows;
- To deliver a working database which stores tasks for the ND people to complete.
- To answer the research questions that I mentioned in section 3.
- To speak to both NT and ND people to find out how it affects them and their work lives.
- To provide a report on the entire project to record what went well and what could be improved if I were to do it again.

5. Project constraints

The constraints that I have with my project are;
- The time constraints of my project. I will need to make sure that the project is presentable by 5th May 2023.
- I have extra time on my exams due to my ASD as I take longer to process information. This will mean that it may take longer for me to complete some of the tasks than it would a NT person.

- Any illnesses or health conditions that arise during the period of time that I am working on my project.

6. Facilities and Resources

I have no IT hardware requirements. I will be using the Virtual Machine that has been provided to me by the university. I will also be using Google Forms to be able to conduct qualitative data gathering and data analysis.
There are no constraints for the availability of either of these things and they do not require any funds to acquire.
They will be available immediately

7. Log of Risks

Description	Impact	Mitigation/Avoidance
COVID-19 outbreak means I can't get into a lab for usability testing	*Cause delays to the project timeline*	*Get in while I can, prioritise lab tasks in time. Make an alternate test plan that does not need the lab.*
Becoming ill	Cause delays to the project timeline	Make sure that I have done enough work before I get too ill to work. Then try and catch up once I am better.
Supervisor ill	Cause delays to the project timeline.	Make sure to get frequent updates on my work before this happens. Then I will have lots to look back on if I cannot contact them.
University network being down.	Cause delays to the project timeline due to not being able to access VM.	Try to use the VM and other university services that need the university network as often as possible.
Power outage	Cause delays to the project timeline due to not being able to access online services.	Try to use the VM and other university services as often as possible while power is active.
Device Breaking	Loss of access to work and systems.	Keep regular backups available on the university services so I am able to use the computers on campus.
Insufficient time to complete all of the requirements.	I require extra time in exams therefore it may take me longer to complete some tasks.	Keep track of how much time I have spent on a task and try not to spend too long on one task.

Loss of documentation and other project deliverables.	Extreme setback and massive delays to the project timeline.	Save multiple copies online in different places that can be accessed both on and off campus.

8. Project Deliverables

The documents that will be produced are; a literature review, final report, collected data, Database documentation (ERD)and a data dictionary.

My primary research tool will be a literature review and I will follow that with my secondary research tool which will be a Google Form that I will send to people with ASD. I am undecided on a tertiary research tool but I have thoughts to ask any participants that fill out the Google Form if they will be comfortable to be interviewed. I am undecided as it gives me some anxiety but if I feel I need it I will attempt to conduct interviews with people who are comfortable to do so.
I will analyse the collected data and write a report on it to show my results.

9. Project Approach

I plan to use a mixed methods approach to produce qualitative and quantitative data.
The primary research that I am going to conduct will be a literature review to gather information about the subject area. I will then use this information to help me create my secondary research, which will be asking people with ASD to fill in a questionnaire via Google Forms. This will allow me to see real world opinions on the subject at hand and understand the problem from other people's perspectives.
I am tentative about conducting my idea for tertiary research, in which I would interview participants from the questionnaire. However, this is tentative due to the fact that it raises anxiety on my part as I may be talking to people that I don't know in a 1-2-1 situation. The same goes for the people filling in the questionnaire as they may not want to be interviewed for similar reasons. Therefore, I am mentioning this here to show that I have thought about it, but I am going to see how things go before I commit to doing interviews.

10. Project Plan

The main stages of my project are as follows;
- Carry out a literature review
- Establish my requirements
- Design and test DB design from data gathering
- Do the primary research
- Write the report
- Do the secondary research
- Write the report

Please see the Gantt chart below for information on when I am planning to perform these tasks.
I won't need direct access to other people or resources other than mentioned in section 6 above. The only access I might need to other people is if I conduct the

interviews, however, this will be on a case-by-case basis as I would need to arrange an interview with anyone that is comfortable with being interviewed.

The skills I require are to be able to conduct research and create a DB and the relevant documentation.

11. Supervisor Meetings

In regards to supervisor meetings. We have agreed to meet bi-weekly starting the week beginning Monday 17th October on the Wednesday of those weeks at 3pm. Once teaching block 2 begins we will meet every week. The day and time should stay the same during teaching block 2, however, if any change to either of our timetables occurs, we will need to reschedule. We will be meeting face-to-face where possible. My project plan will accommodate any extended absences of my supervisor by providing me with a basic plan to follow.

12. Legal, Ethical, Professional and Social Issues

There are no legal/ethical/professional/social issues that may impose constraints on my project. I have made sure to avoid this by having any data that I gather made anonymous so that I cannot breach a participant's confidentiality.

Appendix B
Ethics Review

Certificate of Ethics Review

Project title: Improving communication between a neurotypical employer and their neurodiverse employees in regards to task management

Name:	Ryan Harris	User ID:	938769	Application date:	12/10/2022 18:16:58	ER Number:	TETHIC-2022-103719

You must download your referral certificate, print a copy and keep it as a record of this review.

The FEC representative(s) for the **School of Computing** is/are **Haythem Nakkas, Dalin Zhou**

It is your responsibility to follow the University Code of Practice on Ethical Standards and any Department/School or professional guidelines in the conduct of your study including relevant guidelines regarding health and safety of researchers including the following:

- University Policy
- Safety on Geological Fieldwork

It is also your responsibility to follow University guidance on Data Protection Policy:

- General guidance for all data protection issues
- University Data Protection Policy

Which school/department do you belong to?: **School of Computing**
What is your primary role at the University?: **Undergraduate Student**
What is the name of the member of staff who is responsible for supervising your project?: **Mark Venn**
Is the study likely to involve human subjects (observation) or participants?: No
Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?: No
Are there risks of significant damage to physical and/or ecological environmental features?: No
Are there risks of significant damage to features of historical or cultural heritage (e.g. impacts of study techniques, taking of samples)?: No
Does the project involve animals in any way?: No
Could the research outputs potentially be harmful to third parties?: No
Could your research/artefact be adapted and be misused?: No
Will your project or project deliverables be relevant to defence, the military, police or other security organisations and/or in addition, could it be used by others to threaten UK security?: No

Supervisor Review

As supervisor, I will ensure that this work will be conducted in an ethical manner in line with the University Ethics Policy.
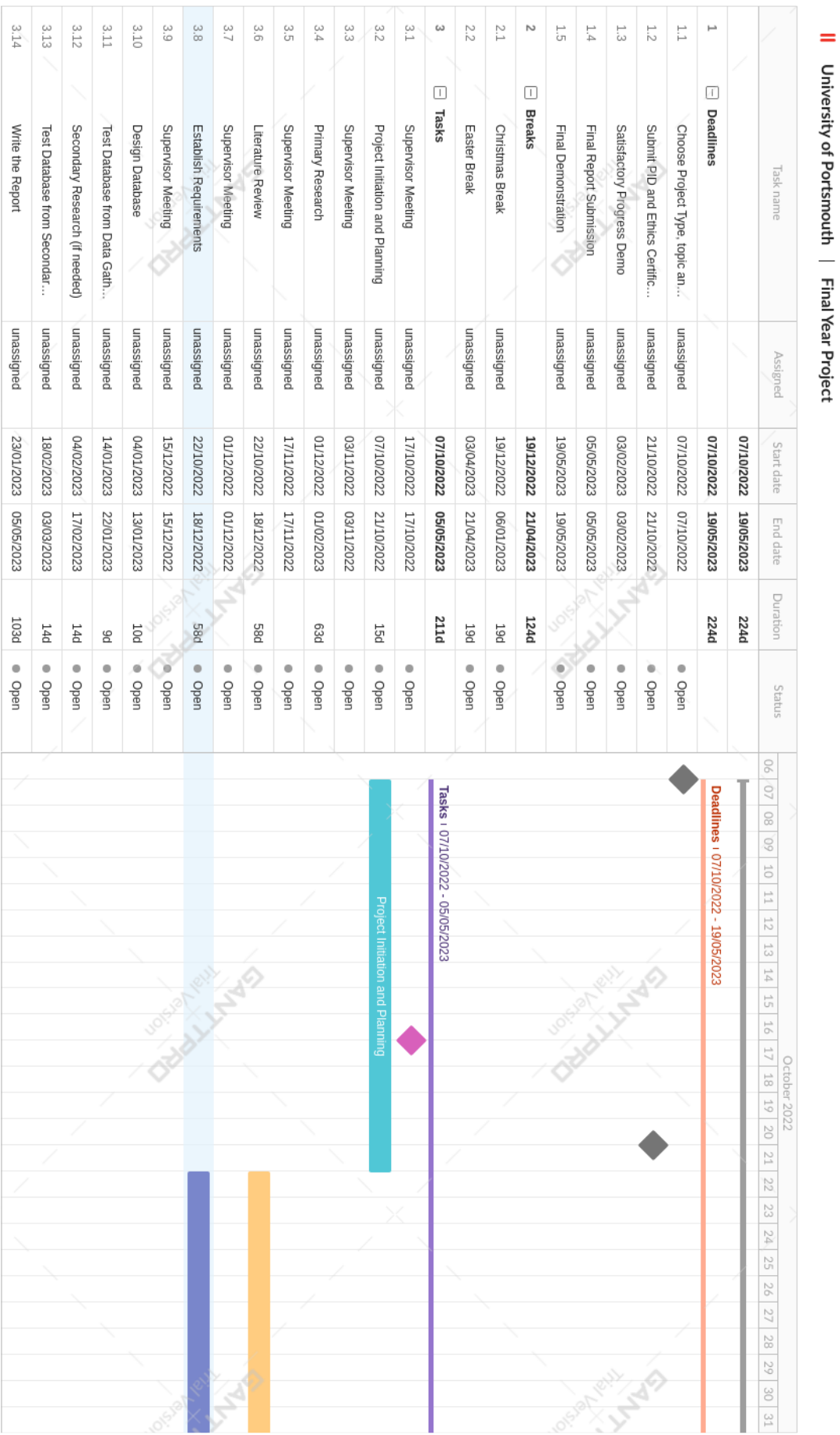
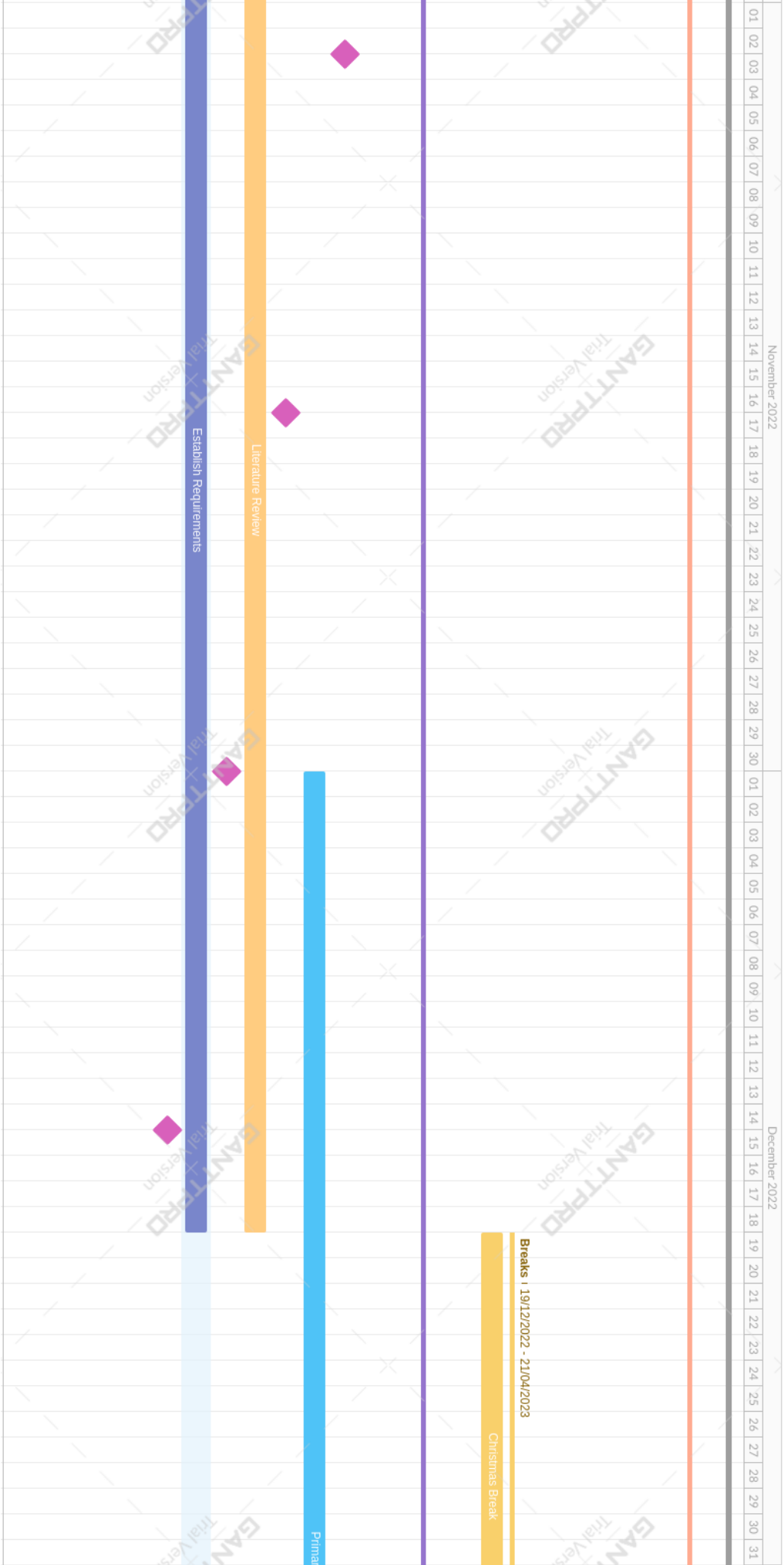Supervisor comments: **##supervisorComments##**

Supervisor's Digital Signature: **##supervisorSig##**   Date: **##supDate##**

Appendix C
Project Plan and Progress
First Gantt Chart

	Task name	Assigned	Start date	End date	Duration	Status
1	Deadlines		07/10/2022	19/05/2023	224d	
1.1	Choose Project Type, topic an...	unassigned	07/10/2022	07/10/2022		● Open
1.2	Submit PID and Ethics Certific...	unassigned	21/10/2022	21/10/2022		● Open
1.3	Satisfactory Progress Demo	unassigned	03/02/2023	03/02/2023		● Open
1.4	Final Report Submission	unassigned	05/05/2023	05/05/2023		● Open
1.5	Final Demonstration	unassigned	19/05/2023	19/05/2023		● Open
2	Breaks		19/12/2022	21/04/2023	124d	
2.1	Christmas Break	unassigned	19/12/2022	06/01/2023	19d	● Open
2.2	Easter Break	unassigned	03/04/2023	21/04/2023	19d	● Open
3	Tasks		07/10/2022	05/05/2023	211d	
3.1	Supervisor Meeting	unassigned	17/10/2022	17/10/2022		● Open
3.2	Project Initiation and Planning	unassigned	07/10/2022	21/10/2022	15d	● Open
3.3	Supervisor Meeting	unassigned	03/11/2022	03/11/2022		● Open
3.4	Primary Research	unassigned	01/12/2022	01/02/2023	63d	● Open
3.5	Supervisor Meeting	unassigned	17/11/2022	17/11/2022		● Open
3.6	Literature Review	unassigned	22/10/2022	18/12/2022	58d	● Open
3.7	Supervisor Meeting	unassigned	01/12/2022	01/12/2022		● Open
3.8	Establish Requirements	unassigned	22/10/2022	18/12/2022	58d	● Open
3.9	Supervisor Meeting	unassigned	15/12/2022	15/12/2022		● Open
3.10	Design Database	unassigned	04/01/2023	13/01/2023	10d	● Open
3.11	Test Database from Data Gath...	unassigned	14/01/2023	22/01/2023	9d	● Open
3.12	Secondary Research (if needed)	unassigned	04/02/2023	17/02/2023	14d	● Open
3.13	Test Database from Secondar...	unassigned	18/02/2023	03/03/2023	14d	● Open
3.14	Write the Report	unassigned	23/01/2023	05/05/2023	103d	● Open

Deadlines | 07/10/2022 - 19/05/2023

Tasks | 07/10/2022 - 05/05/2023

Project Initiation and Planning

October 2022

Second Gantt Chart

	Task	ASSIGNEE ▾	EH ▾	START ▾	DUE ▾	% ▾	↑
	Deadlines:	-	-	07/Oct	28/Jul	0%	
1	Choose Project Type	Unassigned	-	07/Oct	07/Oct	0%	
2	Submit PID & Ethics Certific...	Unassigned	-	21/Oct	21/Oct	0%	
3	Satisfactory Progress Demo	Unassigned	-	03/Feb	03/Feb	0%	
4	Final Report Submission	Unassigned	-	05/May	05/May	0%	
5	Final Demonstration	Unassigned	-	19/Jul	19/Jul	0%	
6	Extenuating Circumstance S...	Unassigned	-	28/Jul	28/Jul	0%	
	+ Add task + Add section						
	Breaks:	-	-	19/Dec	21/Apr	100%	
9	Christmas Break	Unassigned	-	19/Dec	06/Jan	100%	
10	Easter Break	Unassigned	-	03/Apr	21/Apr	100%	
	+ Add task + Add section						
	Tasks:	-	-	01/Nov	28/Jul	69%	
13	Project Initiation and Planni...	Unassigned	-	01/Nov	30/Nov	100%	
14	Establish Requirements	Unassigned	-	21/Jan	01/Mar	100%	
	Write Report	Unassigned	-	21/Jan	28/Jul	81%	
16	Chapter 1 - Introduction	Unassigned	-	21/Feb	21/Feb	100%	
17	Chapter 2 - Literature R...	Unassigned	-	20/Feb	30/Jun	100%	
18	Chapter 4 - Research D...	Unassigned	-	01/Mar	28/Apr	100%	
19	Chapter 5 - Supporting ...	Unassigned	-	28/Apr	28/Jul	100%	
20	Chapter 6 - Results	Unassigned	-	30/Jun	28/Jul	100%	
21	Chapter 7 - Planning an...	Unassigned	-	30/Jun	28/Jul	100%	
22	Chapter 3 - Specificatio...	Unassigned	-	01/Jul	07/Jul	100%	
23	Chapter 8 - Conclusion	Unassigned	-	14/Jul	28/Jul	0%	
24	Design Database	Unassigned	-	07/Feb	28/Mar	100%	
25	Primary Research	Unassigned	-	28/Apr	28/Jul	100%	
26	Test Database	Unassigned	-	01/Jul	28/Jul	0%	
	+ Add task + Add section						
	Problems:		-	01/Sep	30/Jun	0%	
29	Low Energy	Unassigned	-	01/Sep	01/Feb	0%	
30	Eye Surgery Recovery	Unassigned	-	15/May	30/Jun	0%	
	+ Add task + Add section						

Search tasks...

Low Energy

Choose Project Type

Submit PID & Ethics Certificate

Project Initiation and Planning

Christmas Break

Establish Requirements

Chapter 1 - Introduction

Design Database

Satisfactory Progress Demo

Sep 05 W36
Sep 12 W37
Sep 19 W39
Sep 26 W39
Oct 03 W40
Oct 10 W41
Oct 17 W43
Oct 24 W44
Oct 31 W44
Nov 07 W45
Nov 14 W47
Nov 21 W47
Nov 28 W48
Dec 05 W49
Dec 12 W50
Dec 19 W51
Dec 26 W52
Jan 02 W1
Jan 09 W2
Jan 16 W3
Jan 23 W4
Jan 30 W5
Feb 06 W6
Feb 13 W7
Feb 20 W8
Feb 27 W9
Mar 06 W10
Mar 13 W11
Mar 20 W13
Mar 27 W13
Apr 03 W14
Apr 10 W15
Apr 17 W16

Gantt chart — rotated image with the following labels:

Timeline (top axis): W17 Apr 24 · W18 May 01 · May 08 · May 15 · **May 23** · r21 May 22 May 29 · W22 Jun 05 · W2: Jun 12 · **Jun 23** · Jun 19 Jun 26 · W26 Jul 03 · W27 Jul 10 · **Jul 23** Jul 17 · W30 Jul 24 Jul 31 · W31 **Aug 23** Aug 07 · w Aug 14 · I4 Aug 21 · W35 Aug 28 · W36 Sep 04 · Se

Breaks:
- Easter Break

Problems:
- Eye Surgery Recovery

Tasks:
- Chapter 2 - Literature Review
- Chapter 4 - Research Design
- Chapter 5 - Supporting Artifact
- Chapter 3 - Specification and Research Questions
- Chapter 7 - Planning and Management
- Chapter 6 - Results
- Chapter 8 - Conclusion
- Primary Research
- Test Database
- Write Report

Deadlines:
- Final Report Submission
- Final Demonstration
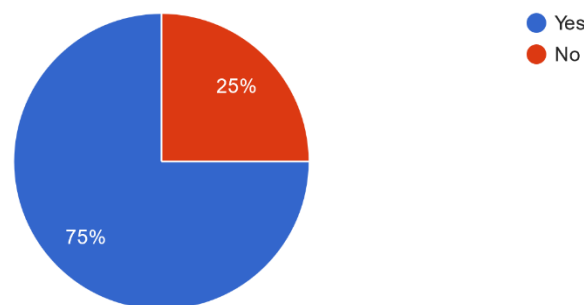- Extenuating Circumstance Submission

53

Appendix D
Pilot Questionnaire

Q1: Would you be ok if I were to contact you about your results for further discussion?

Would you be ok if I were to contact you about your results for further discussion?
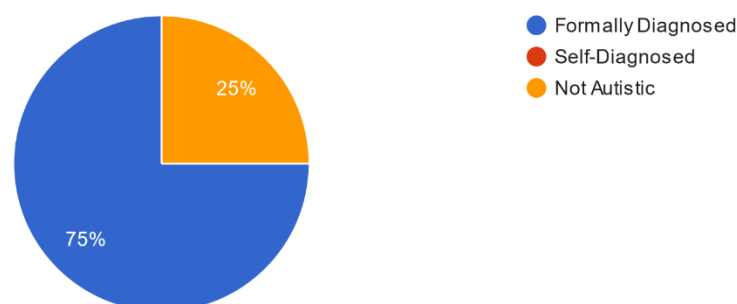4 responses

- Yes
- No
25%
75%

Q2: You answered yes, please provide your email here. You will receive an email from my university email account (@myport.ac.uk). The subject will be "Workplace Communication Questionnaire - Ryan Harris".

All respondents provided emails. Not relevant to show here.

Q3: Are you formally diagnosed with Autism Spectrum Disorder, or self diagnosed? You do not need to be formally diagnosed to answer this questionnaire, this just helps me to see if there are any differences between those who have been diagnosed and those that haven't

Are you formally diagnosed with Autism Spectrum Disorder, or self diagnosed? You do not need to be formally diagnosed to answer this questionnair...e who have been diagnosed and those that haven't
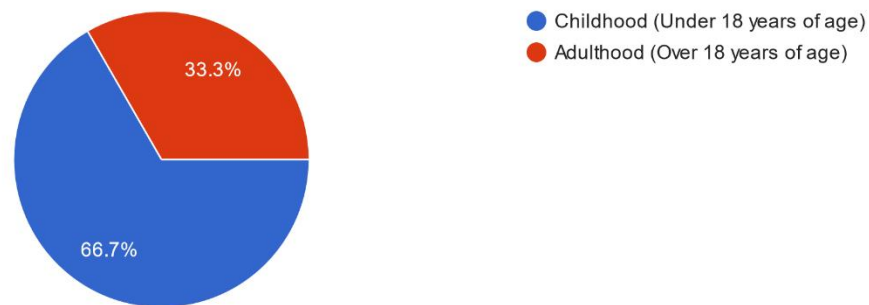4 responses

- Formally Diagnosed
- Self-Diagnosed
- Not Autistic
25%
75%

Q4: When were you diagnosed?

When were you diagnosed?
3 responses

- ● Childhood (Under 18 years of age)
- ● Adulthood (Over 18 years of age)

33.3%

66.7%

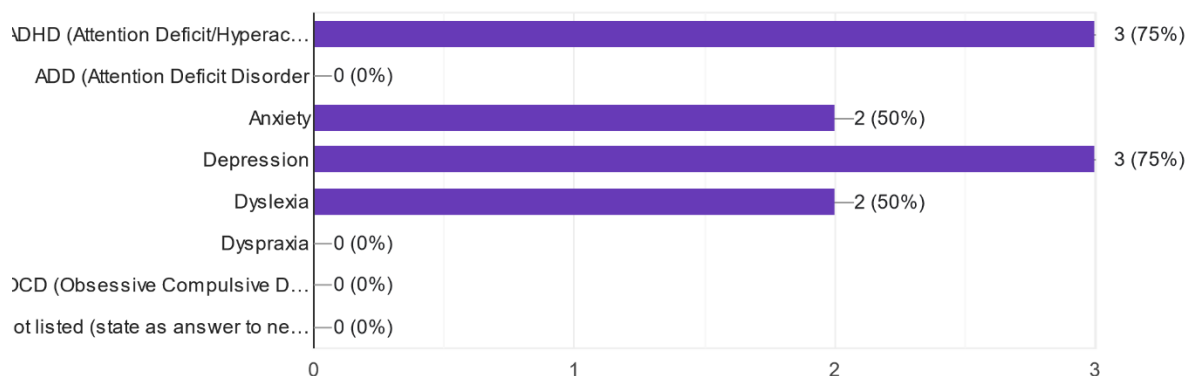## Q5: If you are diagnosed or self-diagnosed with another neurodivergent difference then please select any that apply here.

If you are diagnosed or self-diagnosed with another neurodivergent difference then please select any that apply here. I have only included 8 options here as I don't want to overwhelm anyone.
4 responses

ADHD (Attention Deficit/Hyperac...	3 (75%)
ADD (Attention Deficit Disorder	0 (0%)
Anxiety	2 (50%)
Depression	3 (75%)
Dyslexia	2 (50%)
Dyspraxia	0 (0%)
OCD (Obsessive Compulsive D...	0 (0%)
ot listed (state as answer to ne...	0 (0%)

Q6: Please list any diagnosis here that wasn't listed above. Separate them with a comma.
If you were able to fill the box(es) of all the relevant diagnosis then you can skip this question.
If you filled in any boxes above but have another difference that wasn't listed, please state it here:

No responses for this question

55

Q7: *What age range do you fit into?*
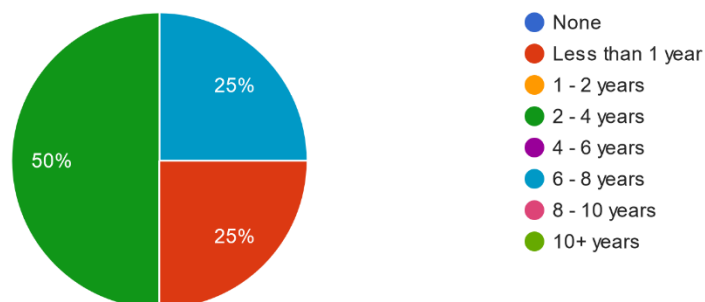
What age range do you fit into?
4 responses

- ● 16 - 25 years old
- ● 26 - 35 years old
- ● 36 - 45 years old
- ● 46 - 55 years old
- ● 56+ years old

100%

Q8: *How many years of experience do you have in any kind of workplace? This includes paid and volunteer work.*

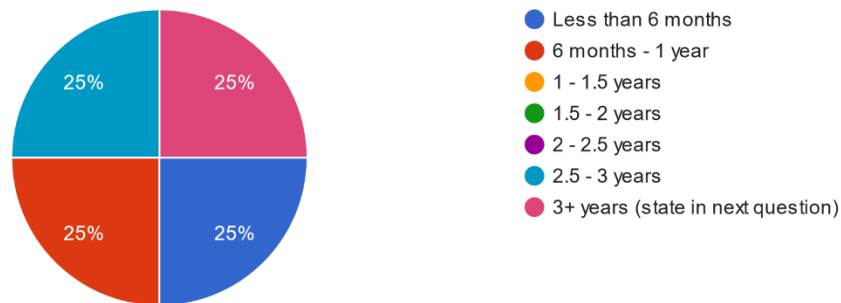How many years of experience do you have in any kind of workplace? This includes paid and volunteer work.
4 responses

- ● None
- ● Less than 1 year
- ● 1 - 2 years
- ● 2 - 4 years
- ● 4 - 6 years
- ● 6 - 8 years
- ● 8 - 10 years
- ● 10+ years

25%
25%
50%

Q9: What is the longest amount of time you have been employed at a single workplace?
Explanation: In this context a workplace counts as one location. So if you have worked in multiple locations, but for one company, then you have worked in multiple workplaces.

What is the longest amount of time you have been employed at a single workplace? Explanation: In this context a workplace counts as one location. S...pany, then you have worked in multiple workplaces
4 responses

- ● Less than 6 months
- ● 6 months - 1 year
- ● 1 - 1.5 years
- ● 1.5 - 2 years
- ● 2 - 2.5 years
- ● 2.5 - 3 years
- ● 3+ years (state in next question)

Q10: Did you receive any support at your workplace?
Explanation: In this context, support would be things like; making things easier to understand,making the work environment more sensory friendly, taking time to explain how to do something you haven't done before, taking the time to re-explain it to you if you don't understand or forget between now and the last time you needed to complete the task.

Did you recieve any support at your workplace?   Explanation: In this context, support would be things like; making things easier to understand, m... and the last time you needed to complete the task.
4 responses

- ● Yes
- ● No
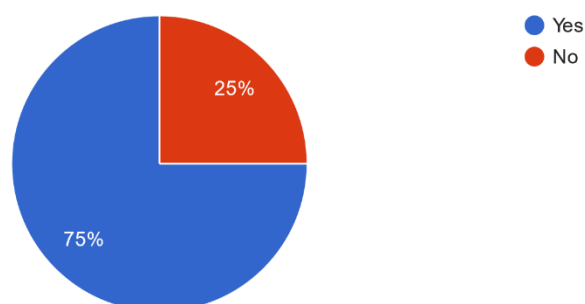
Q11: What kind of support was provided to help you work to the best of your abilities?

What kind of support was provided to help you work to the best of your abilities?

3 responses

Having tasks written down, re explanation if I don't understand, emotional support and advice

N/A

Co-workers often assist to keep me on track when my ADHD plays up in a particular bad way and they're always happy to read/spell check my work to help with my Dyslexia.

Q12: Did you find that the support given was sufficient, or do you feel that you needed more?

Did you find that the support given was sufficient, or do you feel that you needed more?

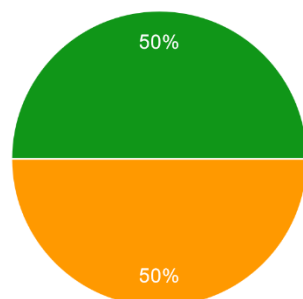3 responses

This is a good amount of support

N/A

It's a cool

Q13: How was the communication in your workplace?

How was the communication in your workplace?

4 responses

- Awful (No one told me anything or I was given the wrong information)
- Poor (I was only told things as they were about to happen and sometimes things…
- Ok (I was told things with a little bit of time beforehand)
- Good (I was told things with some time in advance so that I was able to adjust to t…
- Great (I was told things with plenty of time before they happened and was told as…

Q14: If you have a diagnosis, did you feel comfortable enough to tell anyone at your workplace?

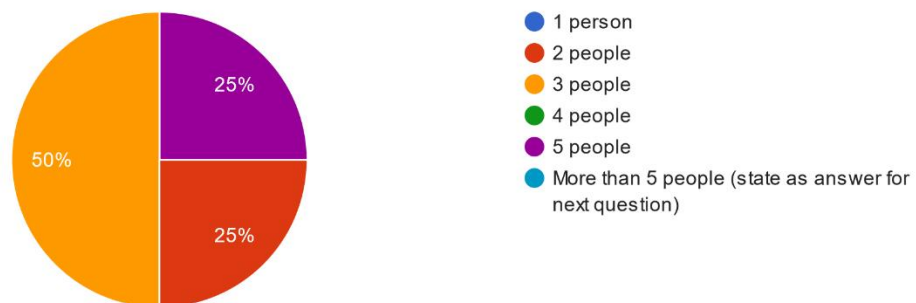If you have a diagnosis, did you feel comfortable enough to tell anyone at your workplace?
4 responses
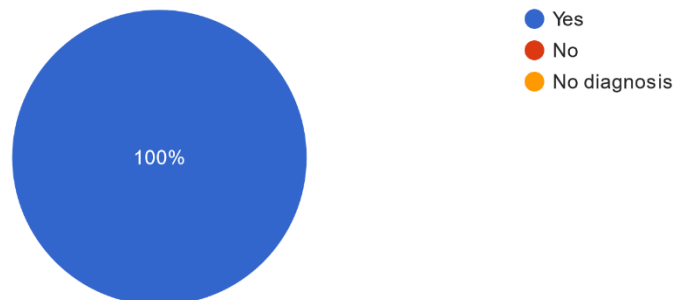
- Yes
- No
- No diagnosis

100%

Q15: How many people did you tell about your diagnosis?

How many people did you tell about your diagnosis?
4 responses

- 1 person
- 2 people
- 3 people
- 4 people
- 5 people
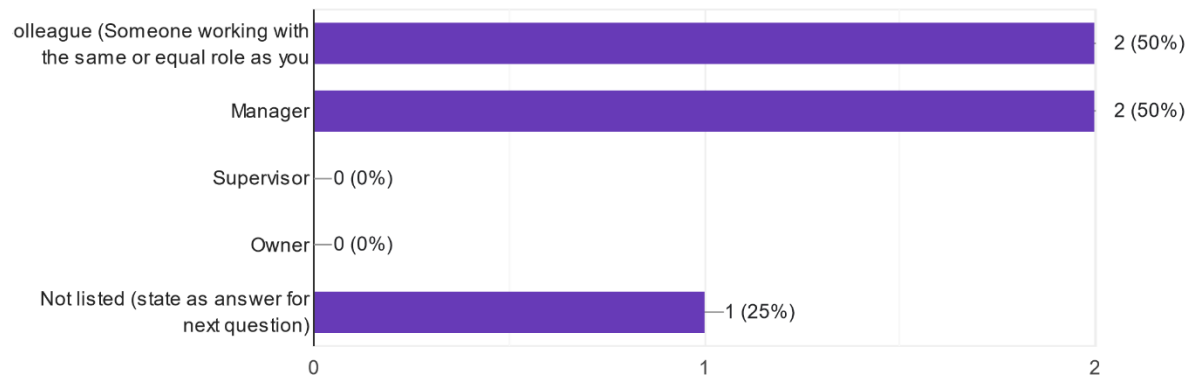- More than 5 people (state as answer for next question)

25%
50%
25%

Q16: If you told more than 5 people about your diagnosis, how many did you tell?

No responses for this question.

Q17: Whom did you tell?

Whom did you tell?

4 responses

olleague (Someone working with the same or equal role as you	2 (50%)
Manager	2 (50%)
Supervisor	0 (0%)
Owner	0 (0%)
Not listed (state as answer for next question)	1 (25%)

0   1   2

Q18: Please list the role of the person you told at your workplace, if not mentioned above.

Please list the role of the person you told at your workplace, if not mentioned above.

1 response

teacher

Q19: Feedback

Feedback

4 responses

Very good

no feedback, this was a quick and easy questionnaire.

Seems like an interesting project and the questionnaire will provide a good data set to work with. Solid work!

work experience was not mentioned for those in education

Appendix E
Database Design

Creating Database and tables:

```sql
CREATE DATABASE FYP;

CREATE TABLE task
(taskID smallserial primary key,
taskTitle varchar(50) not null,
taskDescription text not null);

CREATE TABLE subTask
(subTaskID smallserial primary key,
subTask_Title varchar(50) not null,
subTask_Description text not null);

CREATE TABLE staff
(staffID smallserial primary key,
staff_Fname varchar(30) not null,
staff_Lname varchar(30) not null,
neurodivergent boolean not null,
differences text null);

CREATE TABLE role
(roleID smallserial primary key,
roleName varchar(50) not null);

CREATE TABLE taskSubTask
(taskID int references task(taskID),
subTaskID int references subTask(subTaskID));

CREATE TABLE staffSubTask
(staffID int references staff(staffID),
taskID int references task(taskID),
subTaskID int references subTask(subTaskID),
primary key (staffID, taskID, subTaskID),
completed boolean not null,
timeStarted timestamp not null,
timeFinished timestamp null,
priority int not null);
```

```sql
CREATE TABLE staffRole
(staffID int references staff(staffID),
roleID int references role(roleID));
```

Inserting data into task

```sql
insert into task (taskID, taskTitle, taskDescription) values (1, 'Prepare presentation', 'in
        congue etiam justo etiam pretium iaculis justo in hac');
insert into task (taskID, taskTitle, taskDescription) values (2, 'Review documents', 'nunc nisl
        duis bibendum felis sed interdum venenatis turpis enim');
insert into task (taskID, taskTitle, taskDescription) values (3, 'Attend meeting', 'sociis
        natoque penatibus et magnis dis parturient montes nascetur ridiculus');
insert into task (taskID, taskTitle, taskDescription) values (4, 'Create project plan', 'sociis
        natoque penatibus et magnis dis parturient montes nascetur ridiculus');
insert into task (taskID, taskTitle, taskDescription) values (5, 'Conduct research', 'ac diam
        cras pellentesque volutpat dui maecenas tristique est et');
insert into task (taskID, taskTitle, taskDescription) values (6, 'Write report', 'nulla suscipit
        ligula in lacus curabitur at ipsum ac tellus');
insert into task (taskID, taskTitle, taskDescription) values (7, 'Organize files', 'justo
        sollicitudin ut suscipit a feugiat et eros vestibulum ac');
insert into task (taskID, taskTitle, taskDescription) values (8, 'Collaborate with team', 'orci
        luctus et ultrices posuere cubilia curae nulla dapibus dolor');
insert into task (taskID, taskTitle, taskDescription) values (9, 'Analyze data', 'vel lectus in
        quam fringilla rhoncus mauris enim leo rhoncus');
insert into task (taskID, taskTitle, taskDescription) values (10, 'Schedule appointments', 'nec
        nisi volutpat eleifend donec ut dolor morbi vel lectus');
```

Inserting data into subTask

```sql
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (1, 'Task 1',
        'Praesent lectus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (2, 'Task 2', 'In
        tempor, turpis nec euismod scelerisque, quam turpis adipiscing lorem, vitae mattis
        nibh ligula nec sem. Duis aliquam convallis nunc.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (3, 'Task 3',
        'Maecenas ut massa quis augue luctus tincidunt. Nulla mollis molestie lorem.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (4, 'Task 4',
        'Praesent id massa id nisl venenatis lacinia.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (5, 'Task 5', 'Morbi
        porttitor lorem id ligula. Suspendisse ornare consequat lectus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (6, 'Task 6',
        'Phasellus in felis. Donec semper sapien a libero. Nam dui.');
```

```sql
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (7, 'Task 7', 'Sed
        vel enim sit amet nunc viverra dapibus. Nulla suscipit ligula in lacus. Curabitur at
        ipsum ac tellus semper interdum.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (8, 'Task 8', 'Fusce
        posuere felis sed lacus. Morbi sem mauris, laoreet ut, rhoncus aliquet, pulvinar sed,
        nisl.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (9, 'Task 9',
        'Quisque id justo sit amet sapien dignissim vestibulum. Vestibulum ante ipsum primis
        in faucibus orci luctus et ultrices posuere cubilia Curae; Nulla dapibus dolor vel
        est.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (10, 'Task 10',
        'Suspendisse ornare consequat lectus. In est risus, auctor sed, tristique in, tempus
        sit amet, sem.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (11, 'Task 11',
        'Lorem ipsum dolor sit amet, consectetuer adipiscing elit.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (12, 'Task 12',
        'Vivamus tortor. Duis mattis egestas metus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (13, 'Task 13',
        'Suspendisse potenti. Cras in purus eu magna vulputate luctus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (14, 'Task 14',
        'Morbi quis tortor id nulla ultrices aliquet. Maecenas leo odio, condimentum id,
        luctus nec, molestie sed, justo. Pellentesque viverra pede ac diam.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (15, 'Task 15',
        'Nullam molestie nibh in lectus. Pellentesque at nulla.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (16, 'Task 16',
        'Vivamus vel nulla eget eros elementum pellentesque. Quisque porta volutpat erat.
        Quisque erat eros, viverra eget, congue eget, semper rutrum, nulla.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (17, 'Task 17',
        'Proin at turpis a pede posuere nonummy. Integer non velit.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (18, 'Task 18',
        'Fusce lacus purus, aliquet at, feugiat non, pretium quis, lectus. Suspendisse
        potenti. In eleifend quam a odio.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (19, 'Task 19',
        'Quisque id justo sit amet sapien dignissim vestibulum. Vestibulum ante ipsum primis
        in faucibus orci luctus et ultrices posuere cubilia Curae; Nulla dapibus dolor vel
        est.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (20, 'Task 20',
        'Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin risus. Praesent
        lectus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (21, 'Task 21',
        'Fusce consequat. Nulla nisl.');
```

```sql
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (22, 'Task 22', 'Cras
        in purus eu magna vulputate luctus. Cum sociis natoque penatibus et magnis dis
        parturient montes, nascetur ridiculus mus. Vivamus vestibulum sagittis sapien.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (23, 'Task 23',
        'Phasellus sit amet erat. Nulla tempus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (24, 'Task 24',
        'Pellentesque ultrices mattis odio. Donec vitae nisi.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (25, 'Task 25',
        'Suspendisse potenti. Nullam porttitor lacus at turpis.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (26, 'Task 26',
        'Curabitur convallis. Duis consequat dui nec nisi volutpat eleifend. Donec ut
        dolor.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (27, 'Task 27', 'Nunc
        rhoncus dui vel sem. Sed sagittis. Nam congue, risus semper porta volutpat, quam pede
        lobortis ligula, sit amet eleifend pede libero quis orci.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (28, 'Task 28',
        'Aliquam sit amet diam in magna bibendum imperdiet. Nullam orci pede, venenatis non,
        sodales sed, tincidunt eu, felis.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (29, 'Task 29', 'Sed
        ante. Vivamus tortor. Duis mattis egestas metus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (30, 'Task 30',
        'Integer non velit. Donec diam neque, vestibulum eget, vulputate ut, ultrices vel,
        augue. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere
        cubilia Curae.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (31, 'Task 31',
        'Morbi vel lectus in quam fringilla rhoncus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (32, 'Task 32',
        'Phasellus id sapien in sapien iaculis congue. Vivamus metus arcu, adipiscing
        molestie, hendrerit at, vulputate vitae, nisl. Aenean lectus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (33, 'Task 33',
        'Donec ut mauris eget massa tempor convallis.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (34, 'Task 34',
        'Pellentesque ultrices mattis odio.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (35, 'Task 35',
        'Mauris ullamcorper purus sit amet nulla. Quisque arcu libero, rutrum ac, lobortis
        vel, dapibus at, diam. Nam tristique tortor eu pede.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (36, 'Task 36', 'Duis
        mattis egestas metus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (37, 'Task 37',
        'Phasellus id sapien in sapien iaculis congue.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (38, 'Task 38',
        'Nullam molestie nibh in lectus. Pellentesque at nulla.');
```

```sql
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (39, 'Task 39',
        'Donec ut dolor. Morbi vel lectus in quam fringilla rhoncus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (40, 'Task 40',
        'Donec posuere metus vitae ipsum. Aliquam non mauris. Morbi non lectus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (41, 'Task 41',
        'Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin interdum mauris non
        ligula pellentesque ultrices.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (42, 'Task 42',
        'Aenean fermentum. Donec ut mauris eget massa tempor convallis.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (43, 'Task 43',
        'Fusce posuere felis sed lacus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (44, 'Task 44',
        'Nullam varius. Nulla facilisi.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (45, 'Task 45',
        'Lorem ipsum dolor sit amet, consectetuer adipiscing elit.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (46, 'Task 46',
        'Maecenas tincidunt lacus at velit. Vivamus vel nulla eget eros elementum
        pellentesque. Quisque porta volutpat erat.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (47, 'Task 47',
        'Aenean fermentum. Donec ut mauris eget massa tempor convallis. Nulla neque libero,
        convallis eget, eleifend luctus, ultricies eu, nibh.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (48, 'Task 48', 'In
        quis justo. Maecenas rhoncus aliquam lacus.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (49, 'Task 49',
        'Nulla mollis molestie lorem.');
insert into subTask (subTaskID, subTask_Title, subTask_Description) values (50, 'Task 50',
        'Quisque porta volutpat erat. Quisque erat eros, viverra eget, congue eget, semper
        rutrum, nulla. Nunc purus.');
```

Inserting data into staff

```sql
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (1,
        'Vergil', 'Willford', false, null);
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (2,
        'Adella', 'Keirle', true, 'Nam dui.');
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (3,
        'Roanna', 'Dorow', true, 'Donec dapibus. Duis at velit eu est congue elementum.');
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (4,
        'Jordain', 'Ewles', true, 'Pellentesque viverra pede ac diam. Cras pellentesque
        volutpat dui.');
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (5,
        'April', 'Colwell', true, 'Pellentesque ultrices mattis odio. Donec vitae nisi.');
```

```sql
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (6,
        'Rufus', 'Solway', false, null);
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (7,
        'Row', 'Vasiltsov', true, 'Fusce lacus purus, aliquet at, feugiat non, pretium quis,
        lectus.');
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (8,
        'Xymenes', 'Bellham', true, 'Aliquam sit amet diam in magna bibendum imperdiet.');
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (9,
        'Loria', 'Loader', false, null);
insert into staff (staffID, staff_Fname, staff_Lname, neurodivergent, differences) values (10,
        'Onfroi', 'Robun', true, 'Nulla neque libero, convallis eget, eleifend luctus,
        ultricies eu, nibh. Quisque id justo sit amet sapien dignissim vestibulum.');
```

Inserting data into role

```sql
insert into role (roleID, roleName) values (1, 'Social Worker');
insert into role (roleID, roleName) values (2, 'Human Resources Manager');
insert into role (roleID, roleName) values (3, 'Paralegal');
insert into role (roleID, roleName) values (4, 'Dental Hygienist');
insert into role (roleID, roleName) values (5, 'Senior Cost Accountant');
insert into role (roleID, roleName) values (6, 'Editor');
insert into role (roleID, roleName) values (7, 'Quality Engineer');
insert into role (roleID, roleName) values (8, 'Food Chemist');
insert into role (roleID, roleName) values (9, 'VP Sales');
insert into role (roleID, roleName) values (10, 'Financial Advisor');
```

Inserting data into taskSubTask

```sql
insert into taskSubTask (taskID, subTaskID) values (1, 1);
insert into taskSubTask (taskID, subTaskID) values (1, 2);
insert into taskSubTask (taskID, subTaskID) values (1, 3);
insert into taskSubTask (taskID, subTaskID) values (1, 4);
insert into taskSubTask (taskID, subTaskID) values (1, 5);
insert into taskSubTask (taskID, subTaskID) values (2, 6);
insert into taskSubTask (taskID, subTaskID) values (2, 7);
insert into taskSubTask (taskID, subTaskID) values (2, 8);
insert into taskSubTask (taskID, subTaskID) values (2, 9);
insert into taskSubTask (taskID, subTaskID) values (2, 10);
insert into taskSubTask (taskID, subTaskID) values (3, 11);
insert into taskSubTask (taskID, subTaskID) values (3, 12);
insert into taskSubTask (taskID, subTaskID) values (3, 13);
insert into taskSubTask (taskID, subTaskID) values (3, 14);
insert into taskSubTask (taskID, subTaskID) values (3, 15);
insert into taskSubTask (taskID, subTaskID) values (4, 16);
```

```
insert into taskSubTask (taskID, subTaskID) values (4, 17);
insert into taskSubTask (taskID, subTaskID) values (4, 18);
insert into taskSubTask (taskID, subTaskID) values (4, 19);
insert into taskSubTask (taskID, subTaskID) values (4, 20);
insert into taskSubTask (taskID, subTaskID) values (5, 21);
insert into taskSubTask (taskID, subTaskID) values (5, 22);
insert into taskSubTask (taskID, subTaskID) values (5, 23);
insert into taskSubTask (taskID, subTaskID) values (5, 24);
insert into taskSubTask (taskID, subTaskID) values (5, 25);
insert into taskSubTask (taskID, subTaskID) values (6, 26);
insert into taskSubTask (taskID, subTaskID) values (6, 27);
insert into taskSubTask (taskID, subTaskID) values (6, 28);
insert into taskSubTask (taskID, subTaskID) values (6, 29);
insert into taskSubTask (taskID, subTaskID) values (6, 30);
insert into taskSubTask (taskID, subTaskID) values (7, 31);
insert into taskSubTask (taskID, subTaskID) values (7, 32);
insert into taskSubTask (taskID, subTaskID) values (7, 33);
insert into taskSubTask (taskID, subTaskID) values (7, 34);
insert into taskSubTask (taskID, subTaskID) values (7, 35);
insert into taskSubTask (taskID, subTaskID) values (8, 36);
insert into taskSubTask (taskID, subTaskID) values (8, 37);
insert into taskSubTask (taskID, subTaskID) values (8, 38);
insert into taskSubTask (taskID, subTaskID) values (8, 39);
insert into taskSubTask (taskID, subTaskID) values (8, 40);
insert into taskSubTask (taskID, subTaskID) values (9, 41);
insert into taskSubTask (taskID, subTaskID) values (9, 42);
insert into taskSubTask (taskID, subTaskID) values (9, 43);
insert into taskSubTask (taskID, subTaskID) values (9, 44);
insert into taskSubTask (taskID, subTaskID) values (9, 45);
insert into taskSubTask (taskID, subTaskID) values (10, 46);
insert into taskSubTask (taskID, subTaskID) values (10, 47);
insert into taskSubTask (taskID, subTaskID) values (10, 48);
insert into taskSubTask (taskID, subTaskID) values (10, 49);
insert into taskSubTask (taskID, subTaskID) values (10, 50);
```

Inserting data into staffSubTask

```
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (1, 2, 6, false, '2023-06-21 14:57:57', null, 1);
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (2, 5, 25, true, '2023-06-21 20:21:30', '2023-06-29 13:51:33', 4);
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (3, 9, 43, false, '2023-06-19 18:29:40', null, 3);
```

```sql
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (4, 4, 19, false, '2023-06-21 20:07:44', null, 4);
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (5, 4, 20, true, '2023-06-19 08:38:58', '2023-06-26 19:12:15', 5);
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (6, 9, 45, true, '2023-06-21 13:42:58', '2023-06-27 10:14:26', 4);
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (7, 6, 30, true, '2023-06-20 13:39:18', '2023-06-27 23:58:58', 1);
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (8, 7, 32, false, '2023-06-20 08:20:11', null, 2);
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (9, 3, 15, true, '2023-06-21 23:15:39', '2023-06-26 03:35:54', 4);
insert into staffSubTask (staffID, taskID, subTaskID, completed, timeStarted, timeFinished,
        priority) values (10, 9, 42, false, '2023-06-20 03:53:47', null, 3);
```

Inserting data into staffRole

```sql
insert into staffRole (staffID, roleID) values (1, 5);
insert into staffRole (staffID, roleID) values (2, 7);
insert into staffRole (staffID, roleID) values (3, 7);
insert into staffRole (staffID, roleID) values (4, 2);
insert into staffRole (staffID, roleID) values (5, 2);
insert into staffRole (staffID, roleID) values (6, 2);
insert into staffRole (staffID, roleID) values (7, 7);
insert into staffRole (staffID, roleID) values (8, 9);
insert into staffRole (staffID, roleID) values (9, 5);
insert into staffRole (staffID, roleID) values (10, 2);
```