

Appendix B – Heuristic Evaluation Evidence

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Severity Ranking

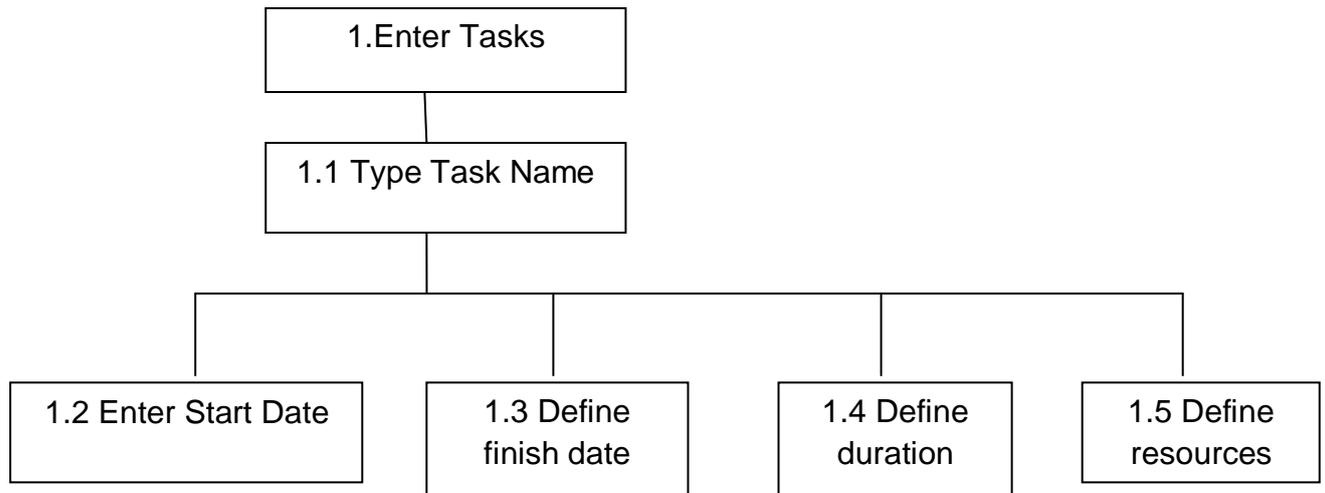
Rating	Definition
0	<i>Violates a heuristic but does not seem to be a usability problem</i>
1	<i>Superficial usability problem; may be easily overcome by user or occurs infrequently.</i>
2	<i>Minor Usability problem; may occur more frequently or be more difficult to overcome.</i>
3	<i>Major Usability problem; occurs frequently and persistently or users may be unable or unaware of how to fix the problem.</i>
4	<i>Usability catastrophe; serious impairs of product that cannot be overcome by user.</i>

Microsoft Project

Hierarchical Task Analysis

1. Scheduling 5 tasks in a Gantt chart
2. Changing working time
3. Link 5 Tasks together

Task 1: Scheduling Tasks in a Gantt Chart

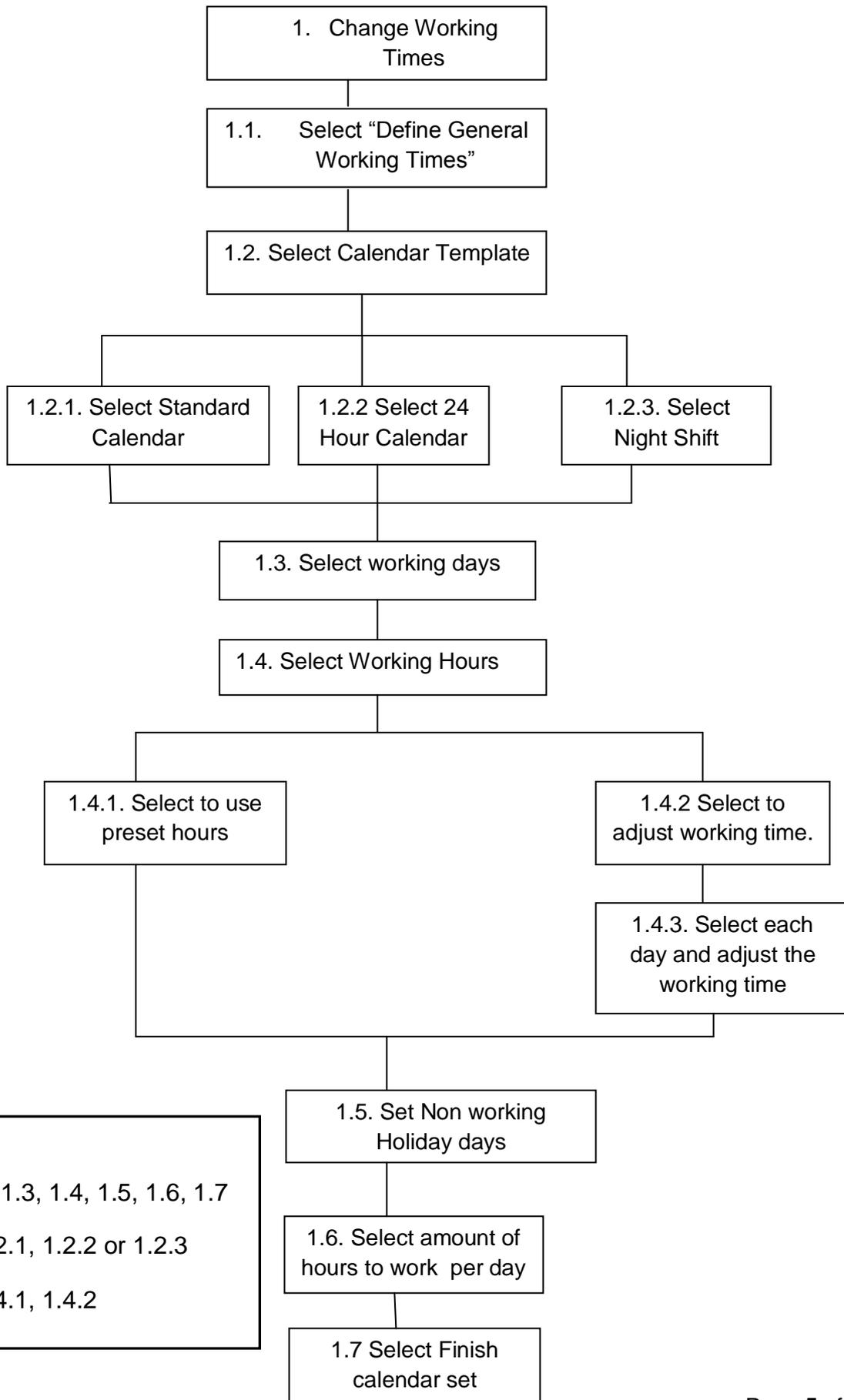


Plan

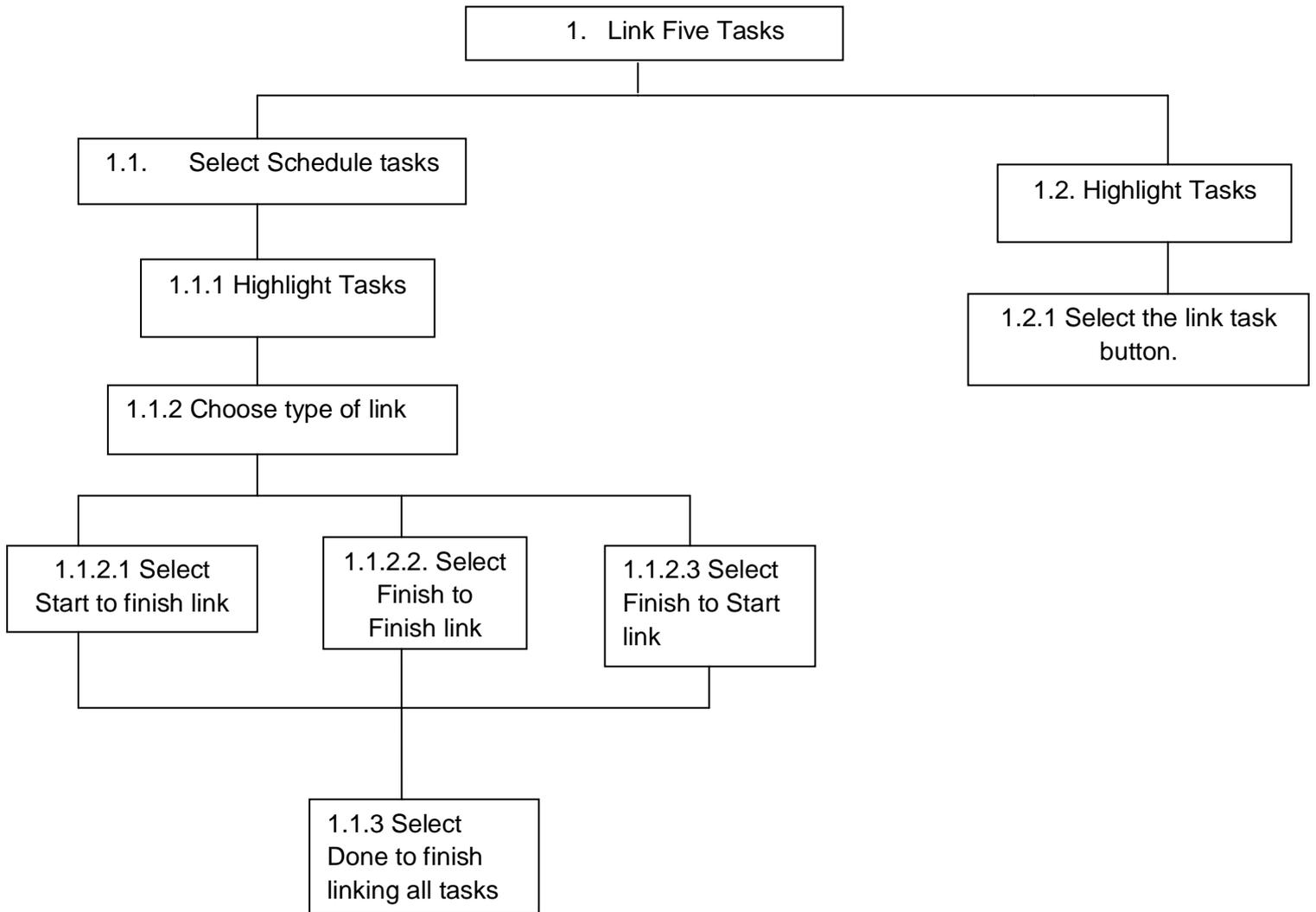
Do 1, 1.1, 1.2, 1.3

Do 1.4, 1.5(Optional)

Task 2: Changing Working Times



Task 3: Linking Five Tasks Together



Plan

Do 1, 1.2, 1.2.1

OR

Do 1, 1.1, 1.1.2 1.1.3

Do either 1.1.2.1, 1.1.2.2, 1.1.2.3

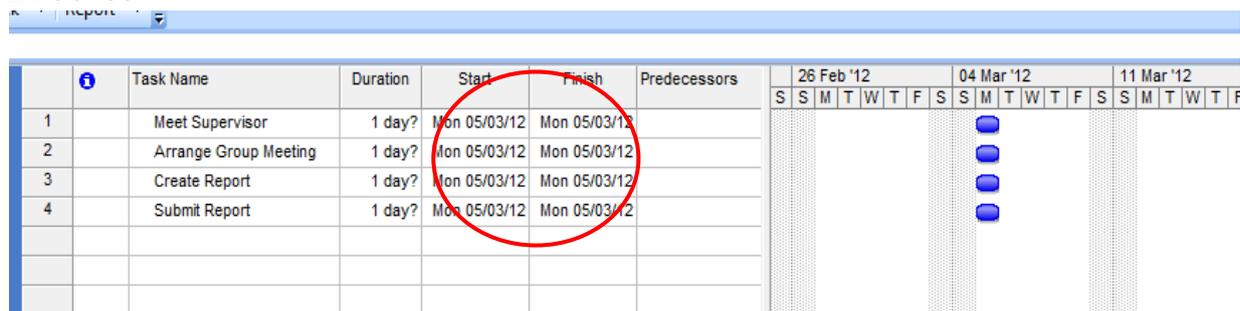
Heuristic Evaluation- Microsoft Project

Heuristic Problem No.	Heuristic Problem	Severity Rating	Violated Heuristic	Heuristic Title
1	Without having to define information in the project such as start date and working times I can still create tasks and import information. This is not good because dates may be inaccurate especially in a project setting.	1	6	Error Prevention

Explanation of Heuristic

Without the users clearly defining dates there is a high possibility that dates and times will be incorrect. In a project plan these are the most important pieces of information and without this it makes the plan ineffective in this setting. The program should force the user when a new document is opened to input at minimum the start date for the project. When each task is added it should ask for a clear duration so that at each stage the dates provided for start and finish are correct and the group can clearly keep track of their project. I believe that this issue violates heuristic number 6 of Jakob Nielsen's 10 heuristics as it does not prevent the error of wrong information for the team. The heuristic states that "careful design will help prevent a problem from occurring in the first place" – this does not do that as it assumes that the day you write the plan is the day the project started which in most cases is not.

Evidence



	Task Name	Duration	Start	Finish	Predecessors	26 Feb '12	04 Mar '12	11 Mar '12											
						S	M	T	W	T	F	S	S	M	T	W	T	F	
1	Meet Supervisor	1 day?	Mon 05/03/12	Mon 05/03/12															
2	Arrange Group Meeting	1 day?	Mon 05/03/12	Mon 05/03/12															
3	Create Report	1 day?	Mon 05/03/12	Mon 05/03/12															
4	Submit Report	1 day?	Mon 05/03/12	Mon 05/03/12															

As you can see from the image above, the project start date is the current date. It does not ask me to input when this project started or even the duration of these tasks. I would have to meet the supervisor to get a project brief before I could make a plan therefore in the scenario of the group project there would be tasks that would need to be documented in the plan that would have already happened. This project plan would be used as a method of tracking what they have already done and what they need to do so past activities would need to be included which Microsoft Project does not easily allow.

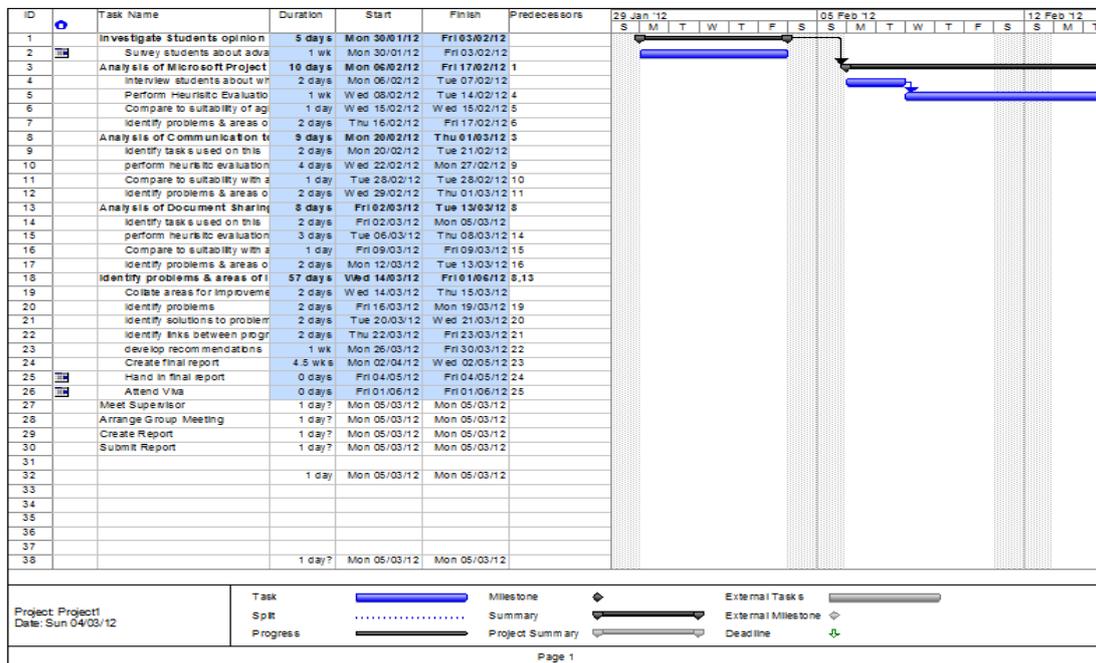
Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic Title
2.	The design of a project plan does not allow for easy printing. When the project plan is very rich in detail it is difficult to print to one readable page to show a client or other groups	2	8	Flexibility & Efficiency of Use

Explanation of problem

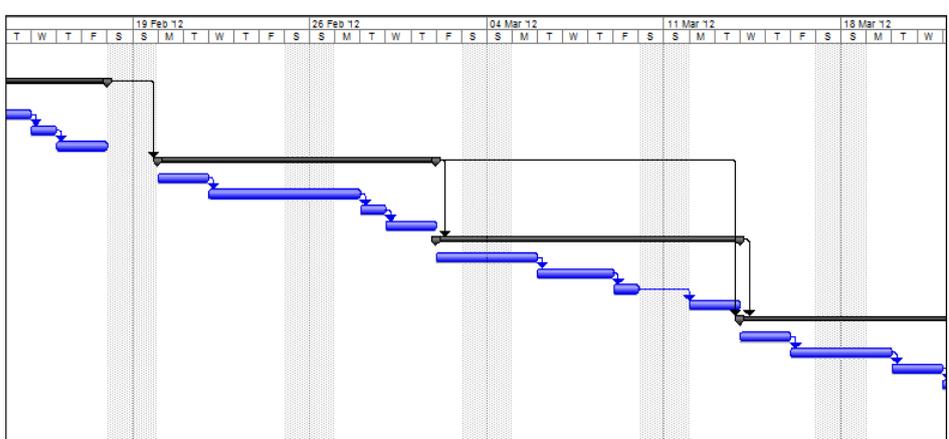
The program does not make it easy for the user to create a print friendly plan in order to have a hard copy. It will take the user several attempts to alter and change the plans view in order to make it printable. This is an inconvenience for the user which leads to frustration and a lack of productivity. It is important that the project plan they create is flexible to their needs and shareable amongst the team. Microsoft Project violates these factors and in turn, violates Jakob Nielsen's heuristic number 8 which states that there should flexibility and efficiency of use in their program meaning that even a novice user will be able to print a plan readable. I do not believe this is the case.

Evidence

Page 1:



Page 2:



As you can see from the above screenshots the second page does not make any sense if not joined with the first. The plan is not readable and will take a lot of effort to line up each stage to the first page. This will be frustrating to the user and will result in them straying away from the plan if they cannot easily access it on a computer with the required software installed. In meetings where no computer is available having the project plan as a paper copy will prove very useful to discuss information amongst the client, supervisor and the team. In order to resolve this issue you need to alter the view and see information by month rather than by week and to do this you need to have experienced knowledge of the program as the option to do this is hidden under multiple toolbars. For a novice user they would find this extremely frustrating and will lead to migration from this program. This information

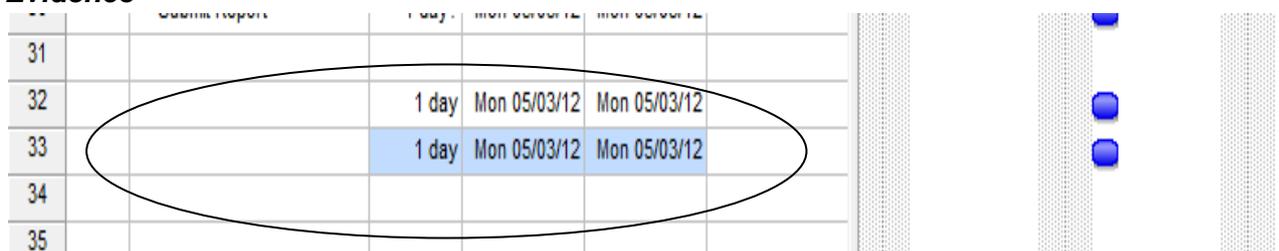
was expressed in the initial survey and on investigation I have experienced the same problems showing this as a severe usability problem in the context of the group project module.

Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic Title
3.	The program allows you to add duration and a start and finish time without enforcing the need for a title. Therefore you can have entities on your project plan which have no title making them completely irrelevant and causing confusion to the intended user of the plan.	1	6 2	Error Prevention Match between system and real world

Explanation of problem

The user can add duration before adding a title and it will allow the user to continue adding more tasks without having to fill in a title field. This leads to blank entries on the project plan which appear like tasks but have no understandable title making them irrelevant to the user. The program should avoid errors like this as they reduce the quality and clarity of the plan. To avoid errors like this the program should create error messages to the user to tell them that they have missed out the title and this should be a critical field in every entry of the program plan. Further to this, I also feel like this problem violates heuristic number 2 – match between system and real world as to have a plan that has entries with no meaning will not make sense in the project context. It will become useless and irrelevant to the team and should not be allowed to happen in the first place.

Evidence



As you can see from the above evidence the title space is left empty yet the program has allowed two entries with blank titles be entered into the project plan. These have no meaning and will confuse the users of the plan. Error messages need to be implemented in order to prevent this from happening or alerting the user that they have done so.

Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic Title
4	The program does not allow the user to notice that they can add resources to each task if they do not have prior knowledge of the program	0	7	Recognition rather than recall.

Explanation

The area in which to add resources is hidden behind the Gantt chart. For a novice user they would not know where to find this tab and ignore that the program has this functionality at all. In the context of the group project this functionality is useful for the team as each person has a different responsibility. Without knowing this exists the team will ignore this and will not be able to create a comprehensive project plan where everyone knows exactly what tasks they need to complete and what their colleague's responsibilities are. I believe this violates heuristic number 7 for recognition rather than recall as a novice user would not clearly know this exists and a experienced user would only have easy access to this functionality.

Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic Title
5	When adding resources in which more than one team member needs to be involved it does not allow you easily to add these from the drop down list. Only one can be selected.	2	3,8	User Control & Freedom Flexibility & Efficiency of use

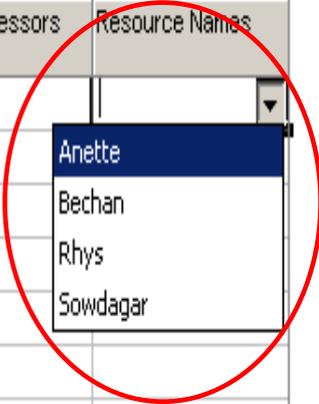
Explanation of Problem

From using Microsoft project to allocate people tasks I found a usability error which I think has significant impact of the usability of the system. Many tasks may need more than one team member to complete especially in a group project consisting of 10 people such as the one that this project relates to. When attempting to allocate more than one resource from the resources stated in the drop down it removes the current selection and replaces it with the new entry. This means that only one can be selected using this drop down method in the project plan. I think that this problem violates heuristic numbers three and eight. It violates user control and freedom as the drop down menu has been created to quickly add resources and improve usability but in the context of a complex group project it does the opposite.

I think it also violates heuristic number eight which is flexibility and efficiency of use as in order to add more than one resource the user would have to find an alternative way of adding resources such as adding a resource name called “full team” and using that from the drop box or going through the settings to add resources. This is definitely not flexible and the user is changing how they would like to use the program to suit the functionality of the developed program which is not good for usability and customer satisfaction.

Evidence

		Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		Attend Meeting with super	1 day?	Thu 08/03/12	Thu 08/03/12		
2		Create Requirements	1 day?	Thu 08/03/12	Thu 08/03/12		
3		Write Weekly Report	1 day?	Thu 08/03/12	Thu 08/03/12		
4		Deliver Report	1 day?	Thu 08/03/12	Thu 08/03/12		



As you can see from the evidence above you can only input one name into the resource names column. When selecting more than one name it removes the current selection and replaces with the new option.

Heuristic Problem No.	Heuristic Problem	Severity ranking	Violated Heuristic	Heuristic Title
6	When setting up the working times, you can only set one calendar. In terms of a group project this is difficult as each team member may be free at different times meaning individual work does not need to be carried out when all team members are free.	3	2	Match between system and real world

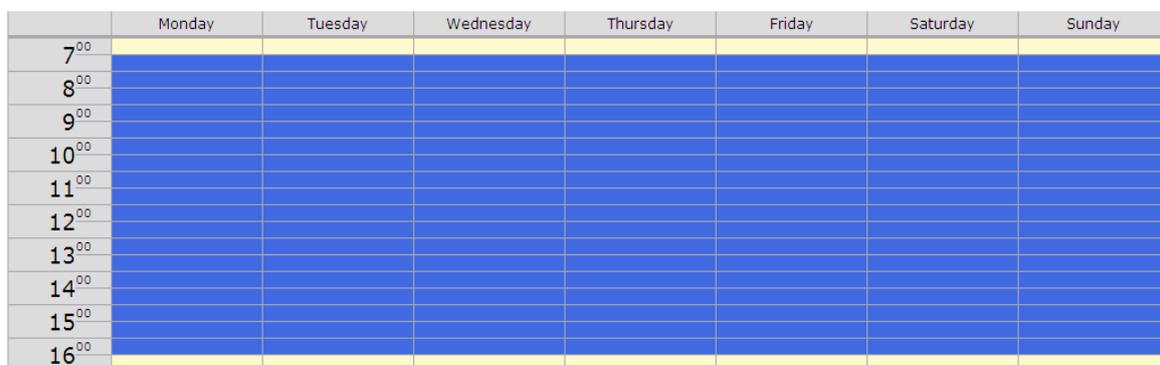
Explanation of problem

In the context of a group project each team member would have different commitments depending on their degree scheme, chosen modules and extracurricular activities. One of the biggest challenges from my own experience of undertaking this module is finding times where all group members are free. These times are useful for scheduling meetings but a lot of the work can be carried out individually. When setting up the working calendar within the program you can only select one selection of availability even though this will differ for each person. I believe this problem violates heuristic number 2 which is the match between system and the real world as in this environment it does not meet the requirements of the team and the plan cannot be accurate.

Evidence

Preview Working Time

Legend:
■ Working time
■ Nonworking time



As you can see from the diagram above only one account of working times can be attended assuming that only work can be completed when the entire team is free.

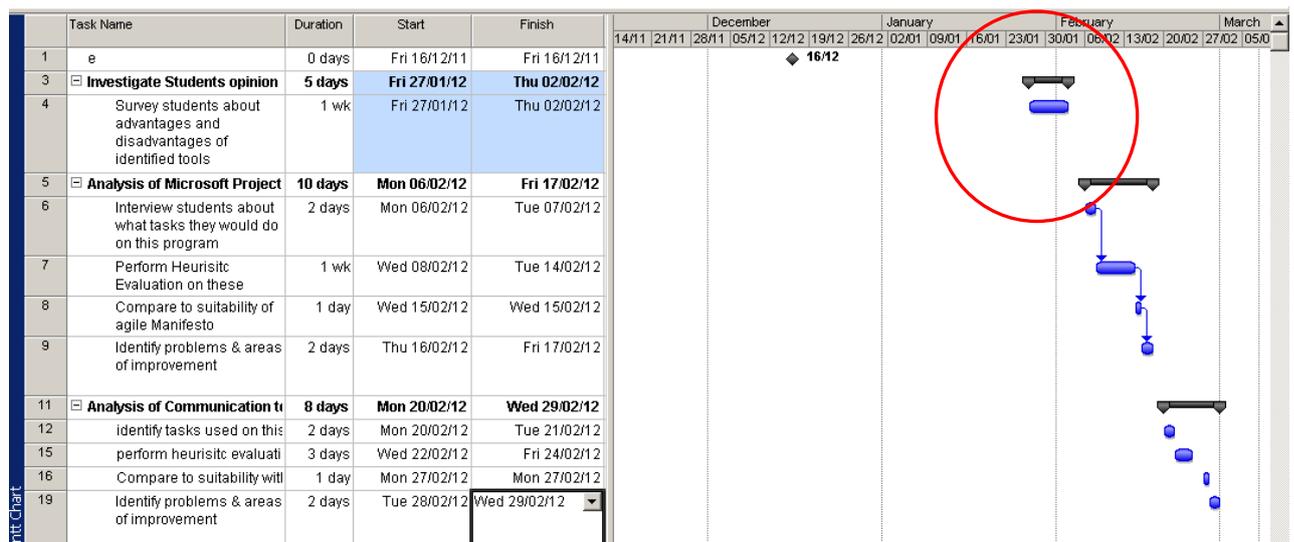
This would mean that work would take so much longer to complete or the plan would be inaccurate, neither of which improve the usability or desire to create a project plan using Microsoft project.

Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic Title
7	When you alter a date within a project plan rather than readjusting all linked tasks it unlinks itself from the tasks without displaying any reasonable error message or warning to the user.	4	3 8 5 10	User Control and freedom Flexibility and efficiency of use Error Prevention Help & Documentation

Explanation of Problem

In a group project there are sometimes unexpected events which cause the project to deviate from the project plan. In instances like this the project plan must be updated in order to reflect this so that all other tasks due dates can reflect the delay in the previous task which they are linked to. When you change a date of one task it unlinks the tasks related to it in the phase and does not display an error message to the user. This is a severe violation as the whole point of the project plan is to keep track of information by dates of completion and milestones. If the plan does not automatically update dates or notify the user that tasks are being unlinked then it is a severe violation of four out of ten usability problems regarding flexibility of use and error and documentation.

Evidence



The highlighted portion of the diagram above used to be linked but on changing the date they have become unlinked with no notification error to the user that this has done so. This is a serious violation of usability heuristics and does not notify the user

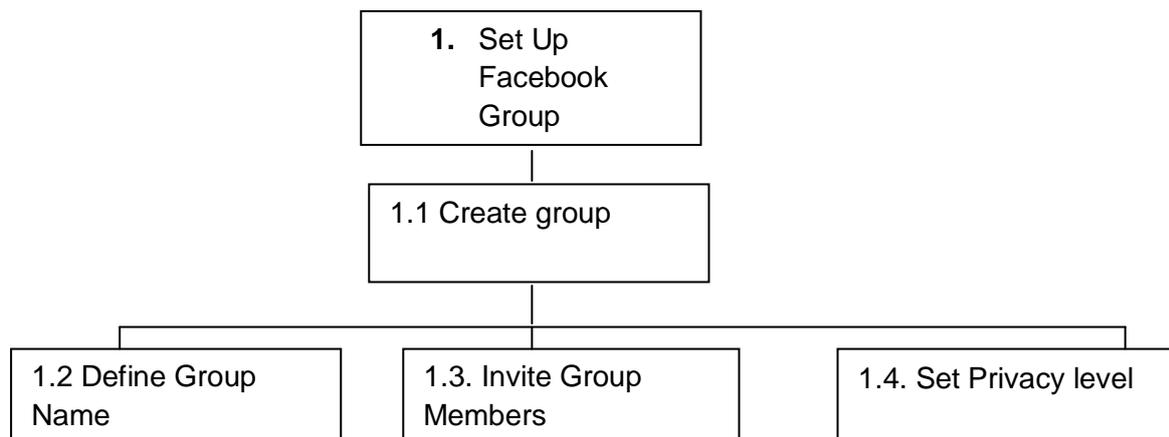
that a serious error has occurred so that they can see the impact and severity of this on their plan and develop a solution.

Facebook

Hierarchical Task Analysis

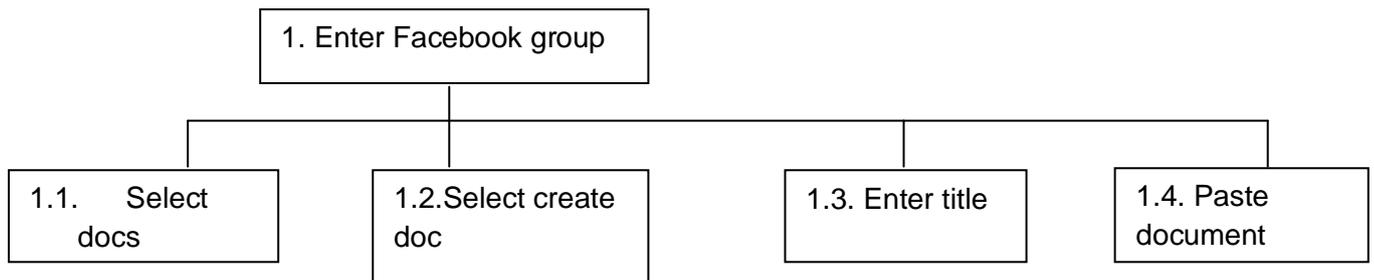
1. Setting up a Facebook group
2. Posting a meeting request
3. Uploading a document

Task 1: Setting up a Facebook group



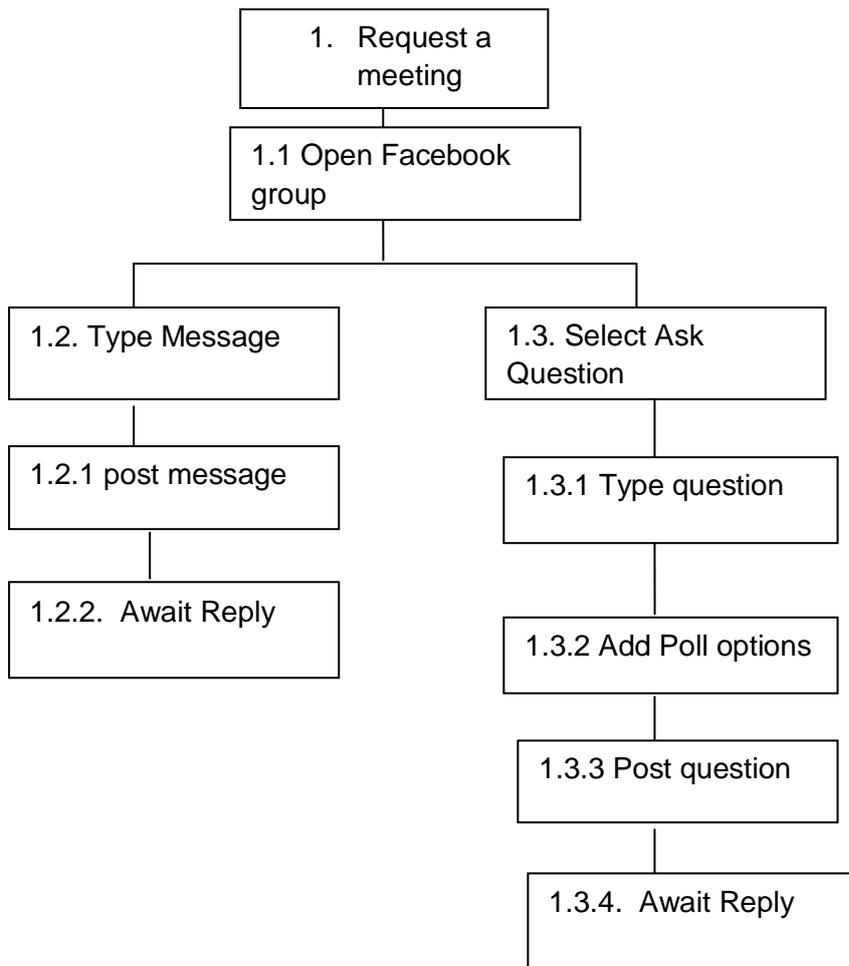
Plan
1, 1.1, 1.2, 1,3 and if required 1.4

Task 2: Uploading a document



Plan
Do 1.1, 1.2, 1.3, 1.4

Task 3: Posting a meeting request



Plan
Do 1, 1.1 1.2,1.2.1,2.2
OR
Do 1, 1.1., 1.3,1.3.1, 1.3.2, 1.3.3, 1.3.4

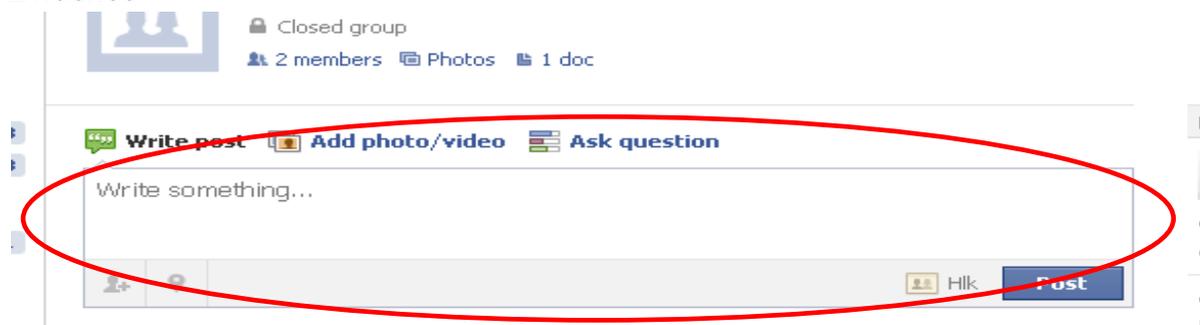
Heuristic Evaluation – Facebook

Problem No.	Problem	Severity ranking	Violated heuristics	Heuristics title
1.	Immediately forced to “write a post” rather than have a option.	1	8, 7	Flexibility and efficiency of use. Recognition rather than recall.

Problem

When entering the group space you are immediately forced upon the write post option when there are other options available. These options include “Ask a question” and “upload a photo”. As writing a wall post is the most common use outside of groups this is probably why it is the pre selected function and therefore has a fairly low severity ranking. Without prior knowledge of Facebook, it is unclear that there is further options than just writing a wall post. This violates heuristics principles flexibility and efficiency of use as it just assumes that writing on the wall is the task you expect to do. Also it violates “recognition rather than recall” as when I was evaluating this program I did not even notice the other possible ways of communicating. A novice user would just assume that writing a post is the only way to communicate. This however is not very severe due to the fact that writing a post is an effective way of communicating but it is a good way to have the other options open.

Evidence



Heuristic Problem No.	Problem	Severity Ranking	Violated Heuristics	Heuristics Title
2	When asking a question the program does not make it obvious that you need to add poll options and allows questions to be asked without poll options.	1	6 10	Error prevention Help & Documentation

Explanation of Problem

When using the ask question option of the group space it is important to add poll options as it allows you to gather votes quickly from the other team members. In order to this you ask the question and then add the relevant poll options so the team member answering can just quickly select one of the possible options. When using this functionality, you can ask a question without any poll options – this means this functionality turns into nothing but a wall post so why bother having the functionality at all. This violates error prevention and help & documentation as it does not allow the user to be told that there is no poll options and does not notify the user that they have forgotten to add this.

Evidence

The screenshot shows a social media interface with three options: "Write post", "Add photo/video", and "Ask question". The "Ask question" option is selected, and a text box contains the question "When is best for next meeting?". Below the text box is a grey bar with the text "Add Poll Options" on the left and a "Post" button on the right. The user's name "Hlk" is visible next to the "Post" button. Below the question, a user profile for "Bechan Carpenter" is shown with a profile picture and the question text "When is best for next meeting?". Below the question is a text box with the placeholder text "+ Add an option...". At the bottom, there are icons for "Like", "Comment", and "Unfollow post", along with the text "2 seconds ago".

As shown by the evidence above a question can be written and posted in the same way as a wall post and does not enforce you to add answers to a post.

Heuristic problem No.	Problem	Severity ranking	Heuristic violated	Heuristic Title
3	When creating a group you are enforced to add group members. A group is a place for many members to come together however facebook functionality allows you to delete members and be in the group on your own.	4	6	Error prevention

Explanation of Problem

The group space is used as it is a private space where team members can communicate and share ideas over the social networking site. A group must have more than one member in order to be a group however facebook allows a group to be used with only one member and does not notify that you're the only member within the group. This is very severe as the group space serves no purpose if only one person is within the group. This violates error prevention as it does not notify the group member that they are the only member left within that group.

Evidence



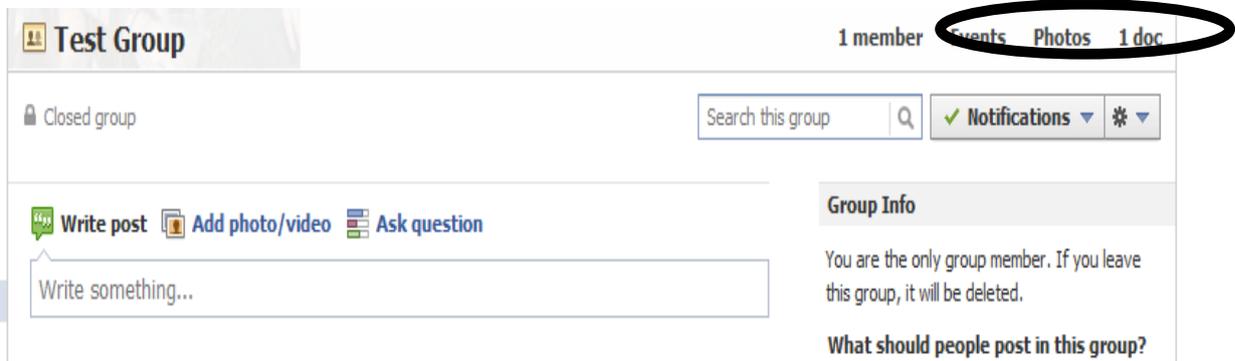
When creating a group on Facebook you are enforced to add other members to the group before allowing the group to be created. Unfortunately after the group is created the functionality of facebook allows you to delete all members and be in the group alone.

Heuristic Problem No.	Problem	Severity Ranking	Violated Heuristics	Heuristics Title
4	Not obvious how to add a document.	1	7	Recognition rather than recall.

Explanation of Problem

Facebook has functionality within the group space to share documents however it is difficult to quickly see the functionality which allows you to add a document. The write post functionality is quite dominant on the page however the add document is hidden in a far away corner. This violates the heuristic “recognition rather than recall” as a novice user will quickly be able to find this functionality.

Evidence



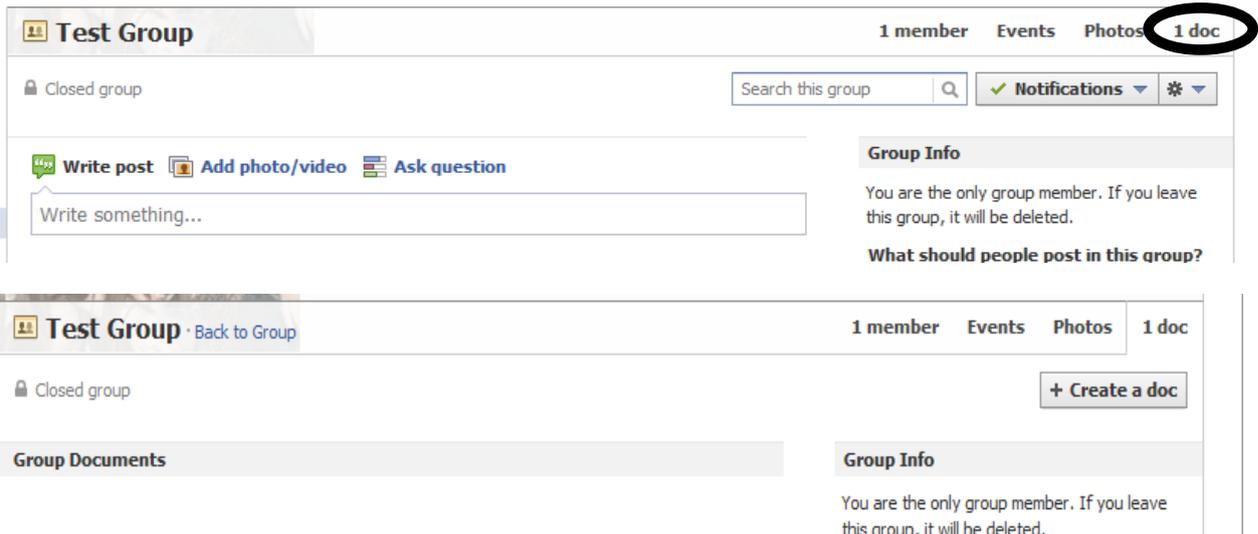
From the evidence above it is not obvious where to add a document. There is a option to see documents but again this is not notably obvious to upload documents

Heuristic Problem No.	Problem	Severity Ranking	Violated Heuristics	Heuristic Title
5	Does not update the number of documents appearing in the group quickly.	2	1	Visibility of System status

Explanation of Problem

The system does not have quick enough updates in order for the system status to be accurate at all times. When testing this fact – I deleted a document however still ten minutes later this document was still being shown as existing on the main screen. This violates visibility of system status and is quite severe as if the team members try to view a document that is not there they may perceive themselves to be missing accurate important pieces of information.

Evidence



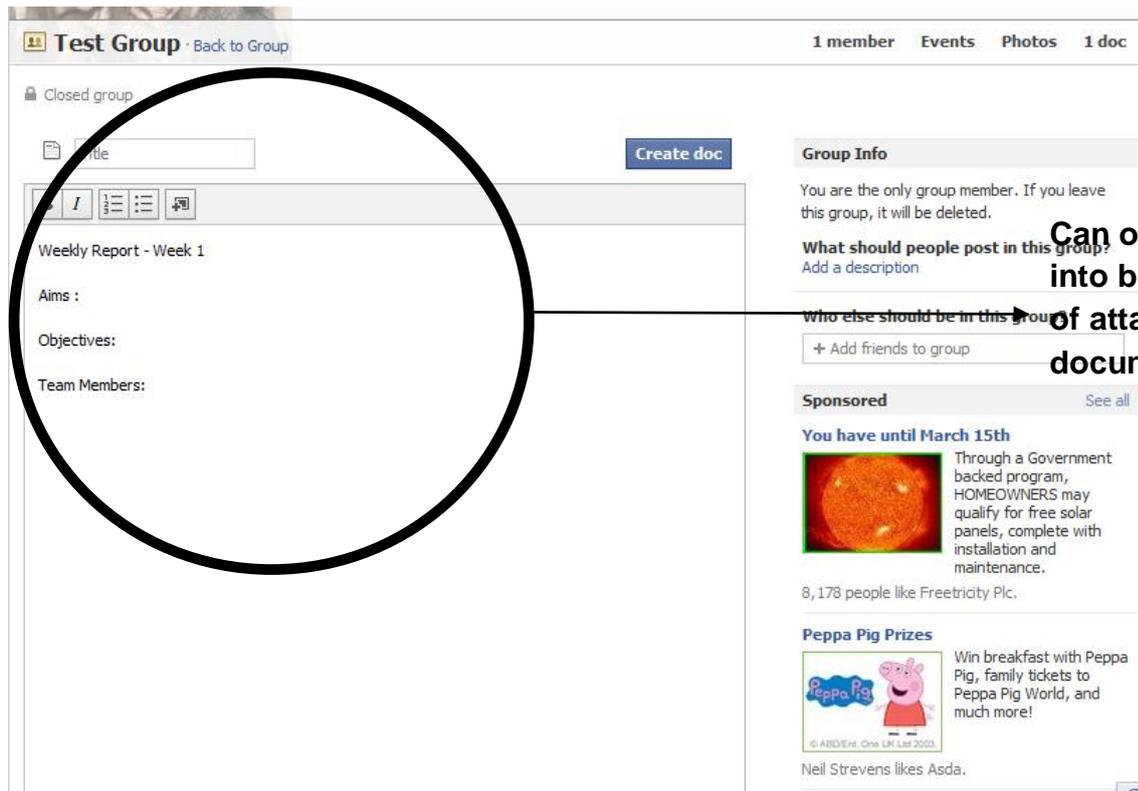
As you can see from the evidence it shows the user there is one document available – however once you enter the document space there is no documents. This is because previously there was a document which was deleted – the group space does not update quick enough that even after several hours it is still showing. This could lead to severe confusion to group members as they may worry that they are missing important information in order to complete their tasks. The facebook shown to all members should be accurate, up to date and the same to all members.

Heuristic Problem No.	Problem	Severity Ranking	Violated Heuristics	Heuristics Title
6	When adding a document it does not allow you to put in other formats and will only allow you to put a document in by copying and pasting text.	4	3 8	User Control & freedom Flexibility & efficiency of use.

Explanation of Problem

When adding a document into the group space, it does not allow you to keep the format of the document that you would like. Instead you must copy and paste the text into a text box and click save. This will make it hard for the details to be edited and to be removed from the program back into a word document when it needs to be submitted for example.

Evidence



Can only add text into box. No way of attaching word documents etc.

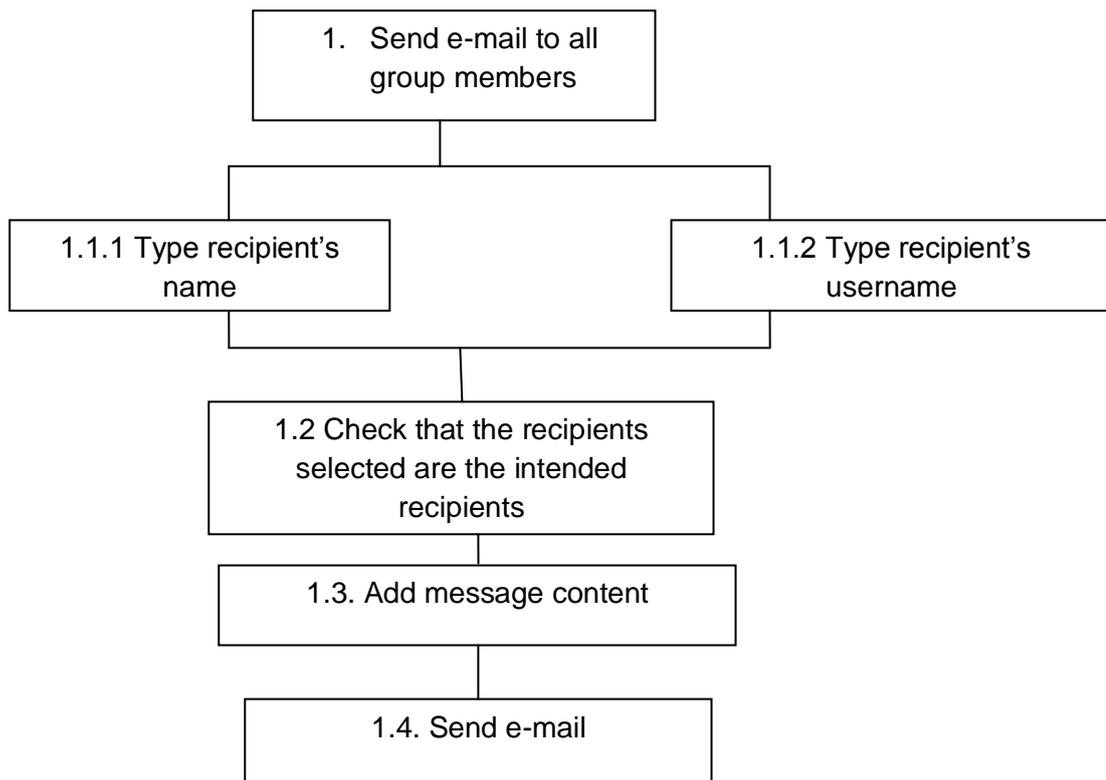
This decreases the convenience of using this website to manage the project. The standard hand in format for reports and documents is usually a word processed documents using a programme such as Microsoft Office or Open Office. In order to have to store information in two different formats will be a hassle for the users and will enforce the user not to be bothered to use this function of the programme. This is the reason why the students also identified Google Docs as a programme they like to use.

Cardiff University E-mail System

Tasks

1. Send an email to all group members
2. Attach a document

Task 1: Sending a e-mail to all group members

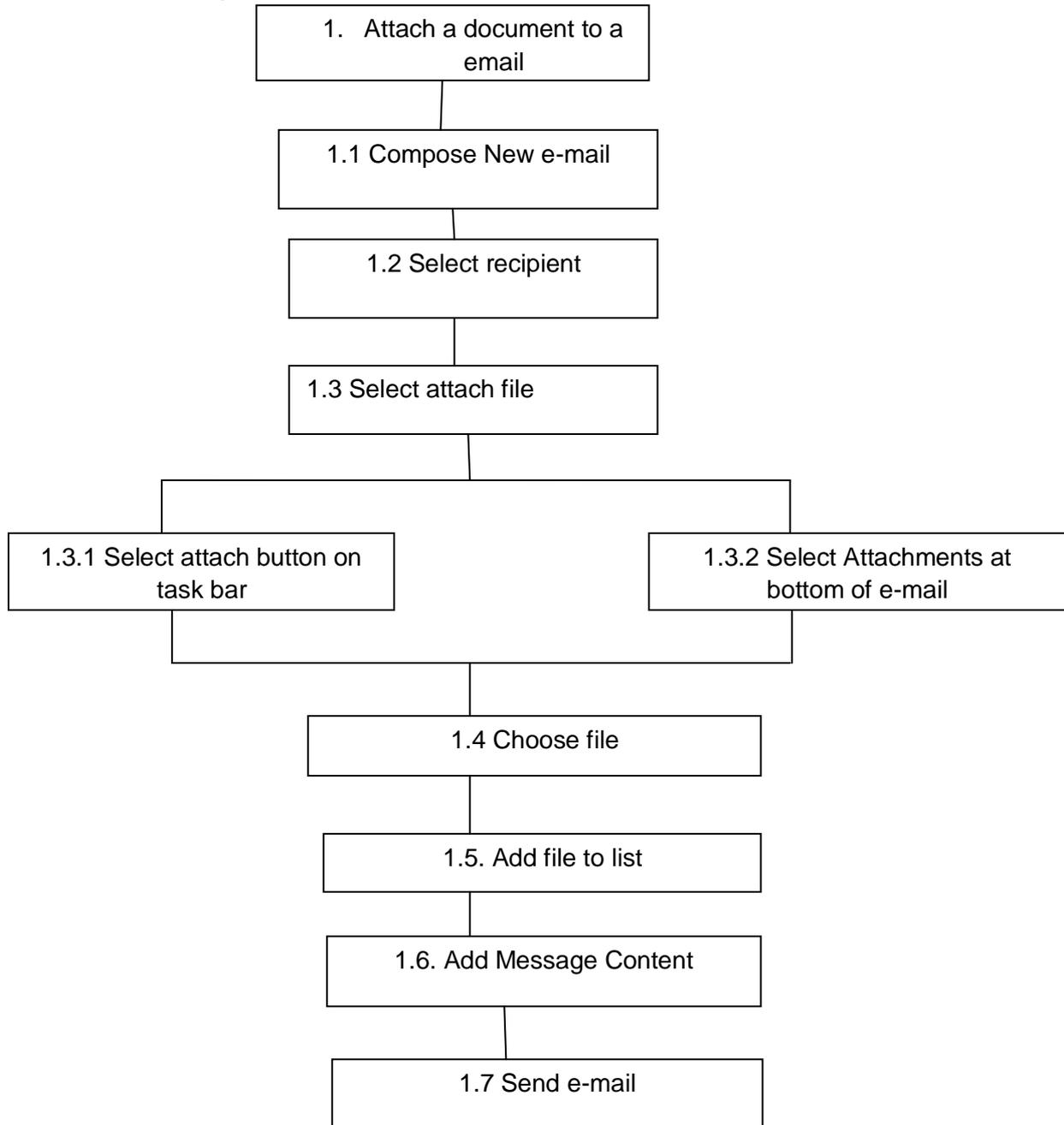


Plan

Do 1, 1.2, 1.3, 1.4.

Do either 1.1.1 or 1.1.2

Task 2: Attaching a document to an e-mail



Plan
Do 1.1,1.2,1.3,1.4,1.5, 1.6 & 1.7
Do either 1.3.1 or 1.3.2

Heuristic Evaluation – Cardiff University E-mail System

Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic Title
1	You cannot quickly add a mailing list of all group members – each person needs to be added individually.	2	8	Flexibility and efficiency of use.

Explanation of Problem

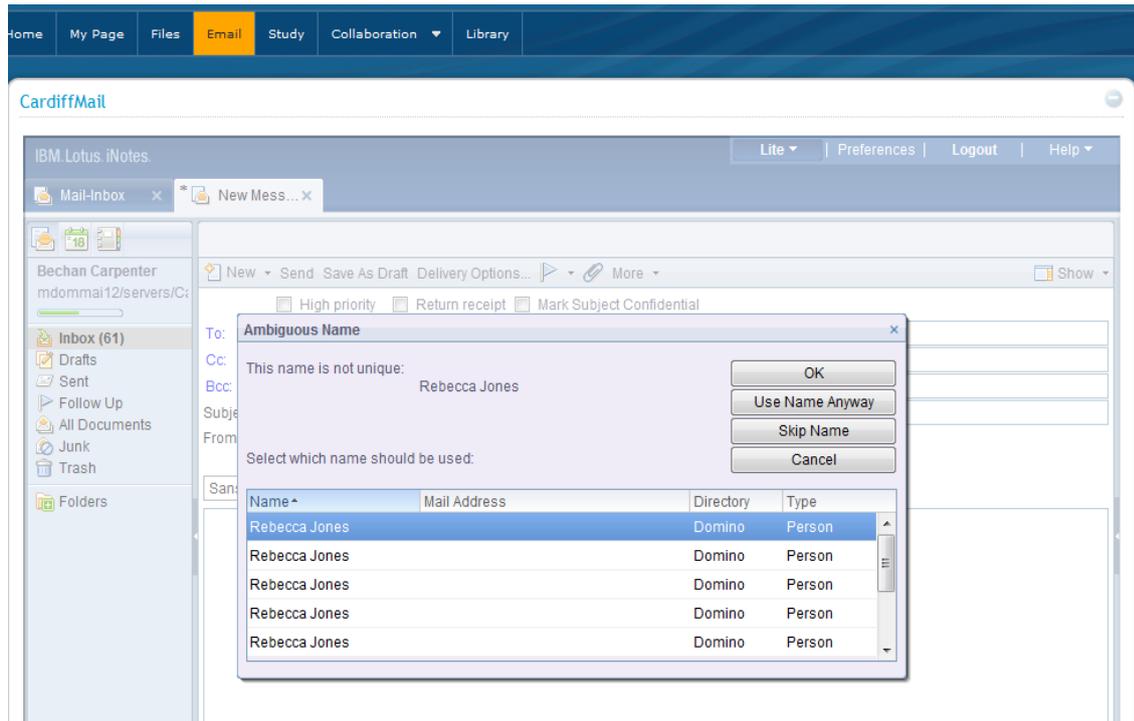
As part of a team you will need to be in constant contact with each other in order to keep up to date with progress and ensure work is being completed to deadlines and the project is moving a steady pace. This will involve sending e-mails to the students about information that they may need such as meeting times, room availability etc. The team will need to contact each other with ease and using a email system that they already use for academic purposes will be convenient for all parties. Each team member being enrolled in the School of Computer Science and Informatics will have a Cardiff University email address and so will clients and supervisors of the project being academic staff members. I believe that this problem is quite severe in the fact that over the course of the year the students will need to email each other regularly and to type out each team member especially in groups of ten people will become tedious and frustrating very quickly. I think this problem violates heuristic number 8 as it does not provide a flexible system where the students can quickly send a new email to intended participants with minimal effort in the set up of this email.

Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic Title
2	If two users have the same name it is difficult to find which user is the correct one.	3	8	Flexibility and efficiency of use.

Explanation of problem

Some team members have users with common names when attempting to email these users with their names it is difficult to quickly add them to a mailing list. In some cases several users with the same name are found and there is no quick way of differentiating which student belongs to which school and if it is the correct person the team need to contact. This is extremely severe as information which may be sensitive could quite easily be sent to the wrong person outside of this project and in cases where personal information is involved this may breach laws such as Data Protection Act. Obviously in terms of a group project the outcomes may not be severe but the groups may still deal with sensitive information and need to pass on information which is critical to the progress and completion of the project.

Evidence



As you can see from the above image on searching for name “Rebecca Jones” you have several results. None of the table columns helps the user in any way differentiate what school they belong to, what course they study or even what is their student number. The table columns shown are irrelevant and will only frustrate the user!

Heuristic Problem No.	Heuristic Title	Severity Ranking	Violated Heuristic	Heuristic Title
2b	In relation to the above problem the program does not allow you to link a student number to a name when trying to differentiate between two people with the same name.	2	8	Flexibility and efficiency of use.

Explanation of problem

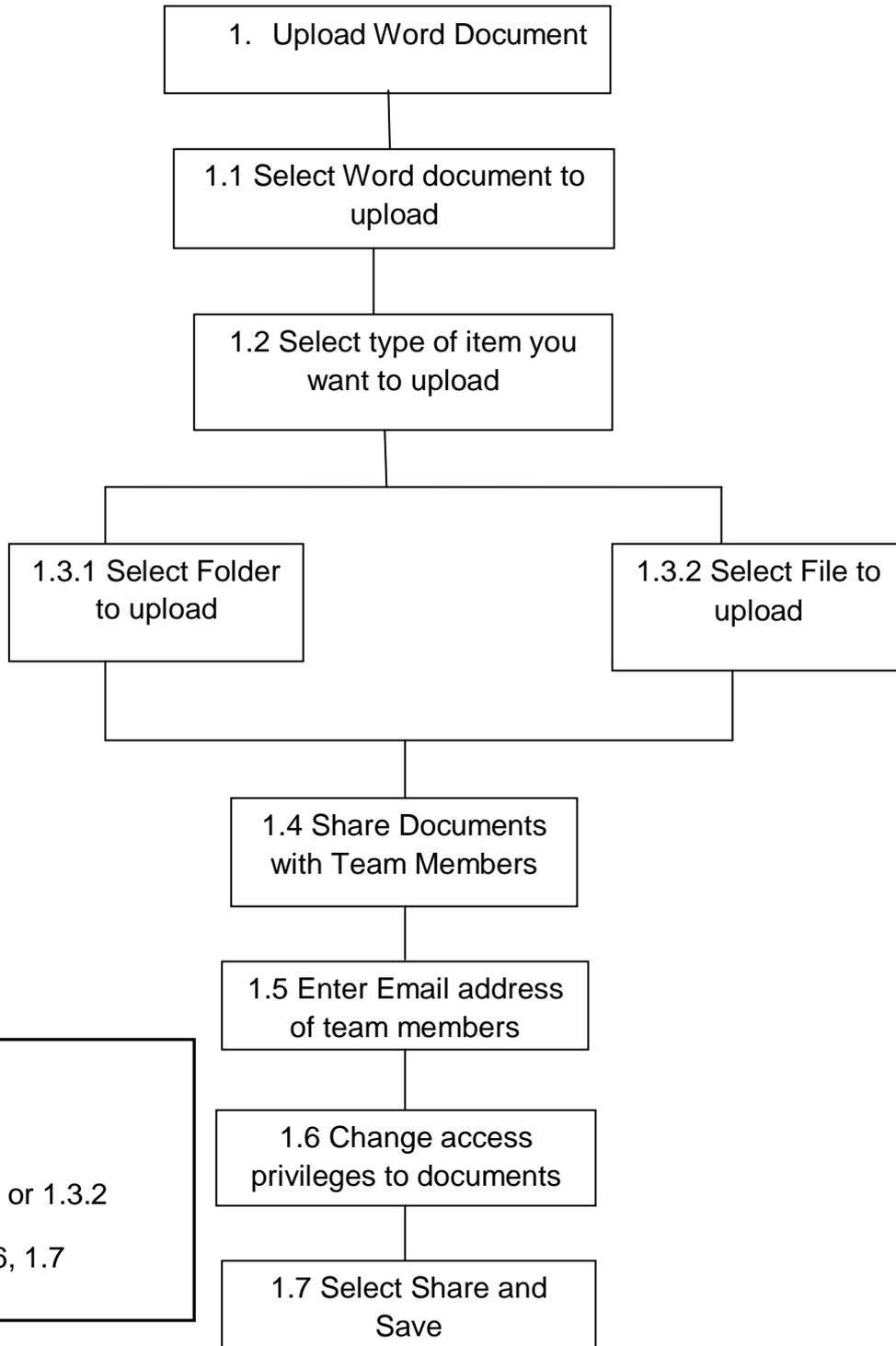
As explained above when there is a group member with a common name it is sometimes difficult to find them just from their name. When you do get to the page shown in the image above there is no second way of identifying this through their student number. Even though you can find a person by using their student number first initially, this is a number which is not always known by group members. As the message above states that the name is not unique it should use the unique identifier as a way to differentiate these students yet it does not.

Google Docs

Tasks

- *Upload existing word document*
- *View document uploaded by a friend*
- *Edit document*

Task 1 - Upload Item to documents



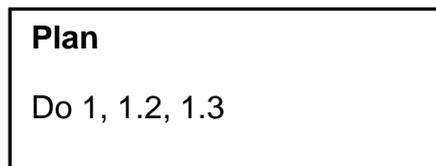
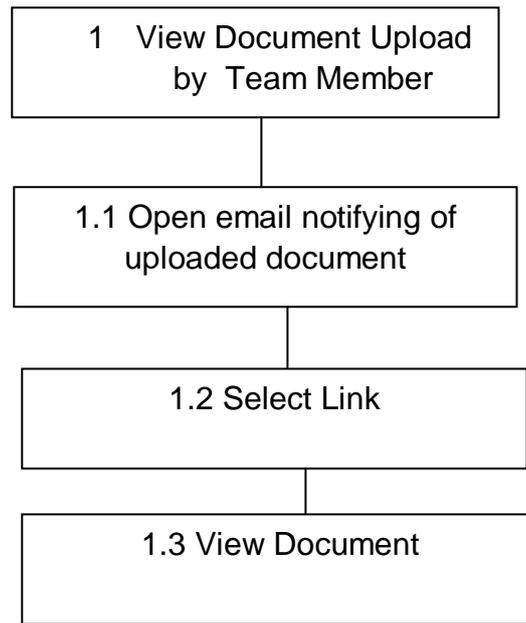
Plan

Do 1, 1.1, 1.2

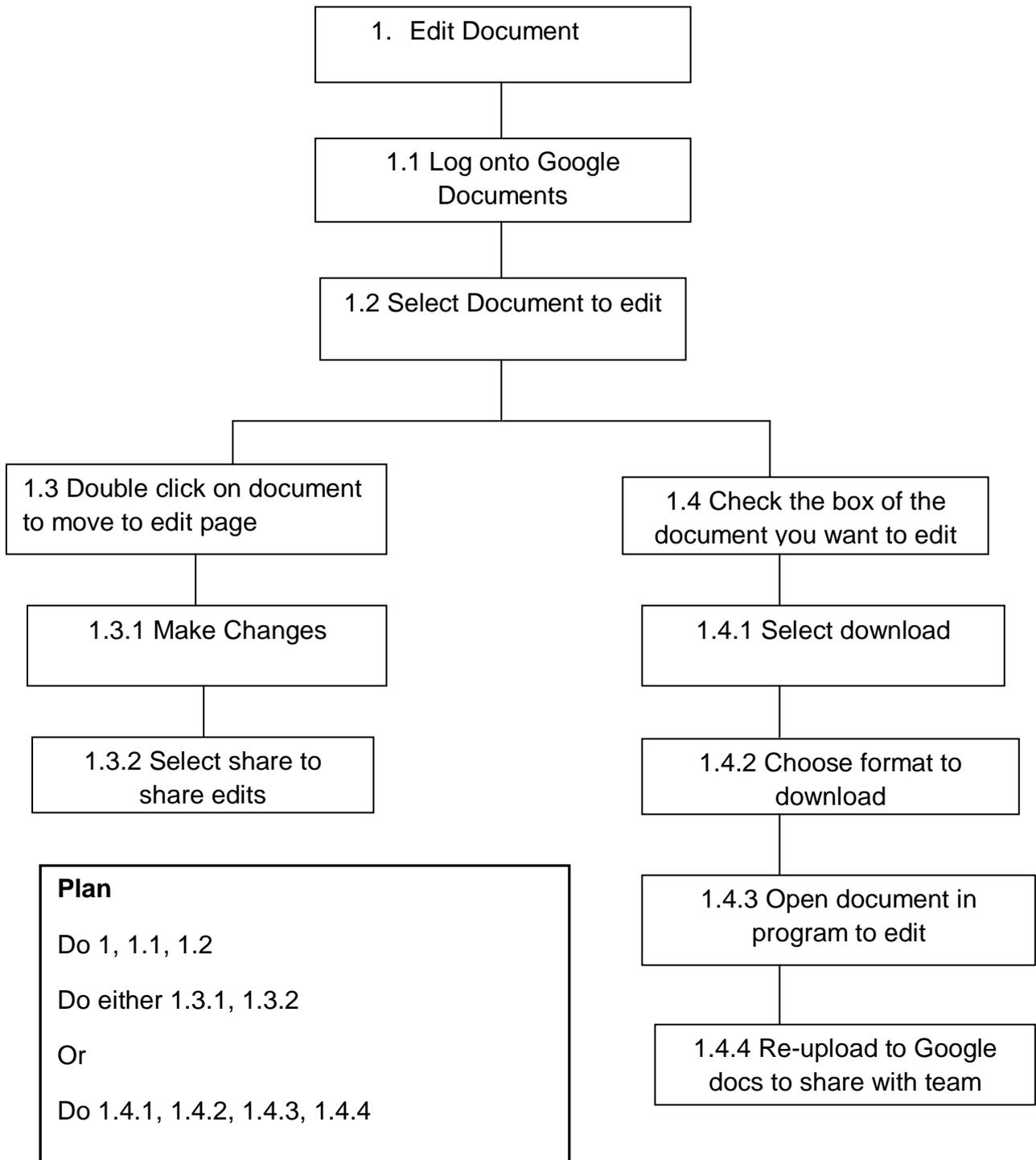
Do either 1.3.1 or 1.3.2

Do 1.4, 1.5, 1.6, 1.7

Task 2 – View Document Uploaded By a Team Member



Task 3 – Edit Document



Heuristic Evaluation – Google Docs

Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic title
1	Not obvious how to share a document as there is not a share document button to quickly share documents with team members.	1	8	Flexibility and efficiency of use.

Evidence

The screenshot shows the Google Docs interface. At the top, there is a search bar with 'Home' and a search icon. Below the search bar, the word 'Docs' is displayed. On the left side, there is a sidebar with a 'CREATE' button and a list of navigation options: Home, Starred, Owned by me, All items, Trash, My collections, and Collections shared with me. The main area displays a list of documents with the following columns: TITLE, OWNER, and LAST MODIFIED. The documents listed are: 'Project Plan - Phase 1 Shared' (owner: Luke7k, last modified: Apr 3 me), 'Untitled document' (owner: me, last modified: Apr 2 me), and 'Business Strategy internship2.docx Shared' (owner: me, last modified: Apr 2 me).

As you can see from the screenshot above there is not an easy share button which can clearly show how to share a plan. The document has to be opened in order to share effectively and then it is still not clear how to share a document. This program would be used within the group project as sharing documents as its primary use. If it is not easy to share those documents then this program will have little benefit. This violates heuristic principle – flexibility and efficiency of use for this reason.

Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic title
2	The system does not clearly display who else the document is shared with only the owner.	2	1	Visibility of System Status



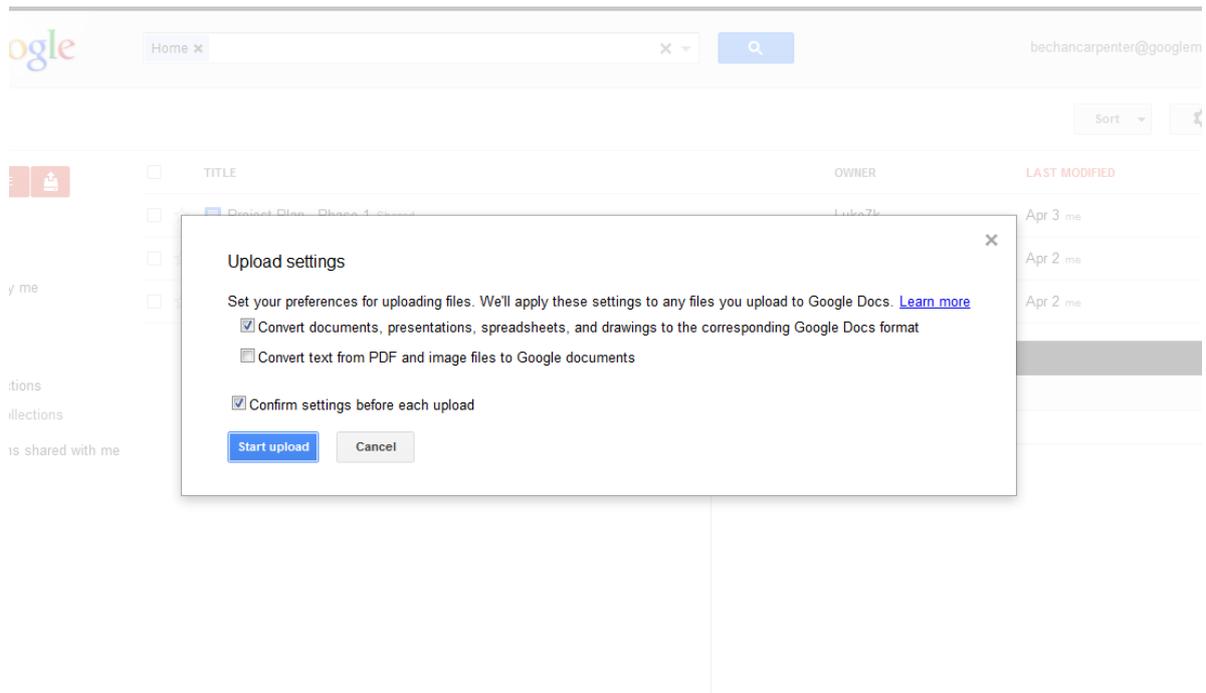
Explanation of Problem

As you can see from the above, the program only tells you that a document has been shared but does not tell you from the main screen who this has been shared with. This is a severe usability error due to the fact that every team member needs to have the same access to a program. If someone is accidentally not shared then it is not possible to notice this quickly and rectify this mistake. I believe this effects visibility of system status as even though it notifies us that this document has been shared it does not tell us who this has been shared and when it was shared. This is not enough information visible to us to act upon.

Heuristic Problem No.	Heuristic Problem	Severity Ranking	Violated Heuristic	Heuristic title
3	When uploading a document it request you to change your document from Microsoft word into a google docs format. This may confuse the users who want to keep their documents the same when uploading	1	8	Flexibility and efficiency of use.

Evidence

As seen from the below screen shot this the box that appears when trying to upload a document. This may confuse users who are not experienced to the use as it does not make the student aware that this will not alter any functionality of their program and does not ensure that they can revert it back to a doc. Format.



Explanation of problem

The above documents shows that word documents cannot stay in their existing file format if it wants to upload to this program. This may be worrying for the students as they may fear that they cannot revert back to their original settings. Converting a file may also alter the formatting of the document and this will worry the students greatly. The students just want a easy conveyant place to store and share documents but do not want them to convert them to a format in which they are unfamiliar with. I believe this effects the heuristic principle of flexibility and efficiency of use as it does not keep the original file format that the students have chosen to use – however this is not very severe as it can be reverted back to a document when you download it.

Details of Heuristics

1. Visibility of system status
The system should always keep the user informed about what is going on through appropriate feedback and within a reasonable time.
2. Match between system and real world
The system should speak the user's language by using familiar words and phrases and following real world conventions by undertaking tasks in a logical order.
3. User Control and freedom
The system should have a clearly marked exit function allowing the user to leave any unwanted state.
4. Consistency and Standards
The system should be consistent with the vocabulary it uses. The user should not have to wonder whether various words have the same meaning. Similar tasks should be completed in a similar way.
5. Help users recognize, diagnose and recover from errors.
Error messages should be in a language that the user can understand and provide insight to the problem and solution.
6. Error prevention
Careful design will help prevent a problem occurring in the first place. Check for error prone conditions and present the user with a confirmation option before commitment to the action.
7. Recognition rather than recall
By making option, objects and actions visible, the memory load of the user is minimized. The user should not have to remember information from one part of the system to another.
8. Flexibility and efficiency of use
Accelerators may be used to enhance the usability for expert users. These can be unseen by a novice user but would allow users to tailor frequent actions to their needs and likes.
9. Aesthetic and minimalist design
The system should not allow dialogs to present information which is irrelevant or rarely needed. Less is more – less information or complexity is easier to understand.
10. Help and documentation
It may be necessary to provide help and documentation for the system which is easily searchable and focused on the users tasks.