Change2

Enigma / Team 29

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Change Report

Our initial designs for change management our project is to go over each deliverable from the previous project in turn and read over them. Once we have a good understanding of the framework that we are building on we can start making changes to these areas. We are storing copies of the original documents on google docs and making copies of these originals to make edits to. This allows us to quickly tell where we have made our changes and to what specific areas. We have decided to use google docs for this as it allows us to see when and where changes were made and by who. Google docs also allows us to keep all our documents on the cloud as well as allowing us to work on changes together.

We decided to manage our changes of the code with the aid of Github and manual comments. Connecting Github to your IDE which for our group was Intellij Idea allows us to commit our code regularly to our personal machine and provide useful comments about the edits we have made to that code over the commit. Eventually when we have made a larger amount of changes to the project that should be shared among the rest of the group we can push these changes onto the project directly from the IDE. Along with this we also created a number of different branches on our git repository. This allows us to push changes even when we’re not completely sure they are working properly but want to be able to share with other members of the team without breaking the rest of the project for those working on the main branch. These branches also allow us to split off from each other when thinking of different solutions to a problem and try different approaches without accidentally breaking each other's code.

Changes in the code itself were made to fit in the same architectural designs made by the previous team in an attempt to keep a consistency in the coding style throughout the project. Comments for important additions were made similarly to the previous team as well as the naming schemes decided for functions and class names. The structure of the project was kept mostly the same with new class folders being created where needed to keep the project organized.

After we made a change to the deliverables we added this change to change Report and summarized what we edited on the previous groups project. This means that we will always have an update report on all changes made as they happen.

Requirements changes

https://enigmagroup29.github.io/auber-website/deliverables/Req2.pdf

The first change made to the Requirements document was the flip all the pages into landscape mode rather than portrait mode, this meant that the tables would fit more easily onto the page without sentences having to take up multiple lines. This made the tables much easier to read.

The next change we made to the requirements document was combining the tables together, in our copying of the document some of the tables were split into multiple tables making it hard to read. As you can see in the image below this table was split into two tables and needs to be recombined.

Functional Requirements

ID	Description	User requirement
FR_MOVEMENT	The system shall move the user's playable character upon input from directional keyboard keys.	UR_MOVEMENT
FR_TELEPORT	The system shall teleport the user's playable character upon input from the user.	UR_TELEPORT
FR_ROOMS	The system shall have several accessible rooms throughout the map.	UR_ROOMS
FR_DIFFICULTY	The system shall have a set difficulty that provides a challenging experience for the user.	UR_DIFFICULTY

FR_MAP	There should be a map of the game accessible to the user during the game.	UR_NAVIGATION
FR_ARREST	The system should allow you to arrest NPCs you suspect of being infiltrators.	UR_ARREST
FR_HEAL	The system should allow the user's character to heal in the infirmary.	UR_HEAL
FR_DEMO	The system should allow a short simulation of how the game is to work to play	UR_DEMO
FR_ENDGAME	The system shall allow the game to end and not be playable forever.	UR_REALTIME and UR_SYSREQ

Some of the columns are very wide in comparison to the amount of information shown in them. This means that the column is taking up a lot more space than they have to so we have reduced the size of the columns so they are not taking up too much space such as the “Priority” column.

We next added the UR_PLAYER_ABILITIES row to the User requirements table. This row is for the new user requirement “Implement five special power ups that Auber can obtain on the journey e.g. granting temporary immunity, becoming invisible”.

We next added the UR_SAVE row to the User requirements table. This row is for the new user requirement “Implement five special power ups that Auber can obtain on the journey e.g. granting temporary immunity, becoming invisible”.

Updated the group names on the title page to reflect the current group and group members names.

Some of the tables are too large to fit onto a single page and go across multiple pages. This means that the headers for the table are not visible on the second page making it harder to tell what each column is describing without going back and forth between the pages to check the column title. we have added the column titles on each table when it goes onto a new page. As shown in the image below it is hard to tell what the column titles where once the table crosses multiple pages.

UR_NAVIGATI ON	The user should be able to easily navigate the map of the game.	The map should be memorable and well laid out.	Shall
UR_NOTIFY	The user should be notified of any key systems being destroyed	The game should indicate to the user that a key system is being destroyed	Should
UR_HEAL	The user should be able to heal their playable character in the map's infirmary.	The game should heal the user's playable character to full health upon input.	Should
UR_ABILITIES	Infiltrators should be able to use three abilities that make them more difficult to arrest.	Infiltrators should use abilities as a response to the player to try and escape arrest	Should
UR_REALTIME	The system shall play in real-time, and not in a turn-based format.	All processes shall be tracked in real time.	Shall

Next we edited the UR_DIFFICULTY row, Originally this said that the game should have fixed single difficulty that “should be challenging but not impossible for anyone to beat.”. The new user requirements specify that there should be multiple levels of difficulty in the requirement “Implement support for different levels of difficulty in the game (e.g. easy, normal, hard)” we have made changes to this user requirement to reflect the new requirements given to us.

As the UR_DIFFICULTY column was originally specific to a single difficulty the functional requirement FR_DIFFICULTY that was related to this also had to be updated to reflect the new requirements. This was changed so it now mentions that multiple difficulties are required rather than the single difficulty that was implemented by the original team.

To be able to implement that saving and loading functionality into the game the user must be able to access a pause screen in the game. This screen will pause the game and allow the user to select the option of saving their current game or reloading their previous save. we added this requirement to the Functional Requirements under the ID “FR_PAUSE_SCREEN”

Finally we added page breaks to the requirements deliverable to place new tables onto their own screen and space all of the topics out. This means that each area has its own space and is easily identifiable making the whole deliverable easier to navigate and read. These page breaks are superior to manually adding spaces to force tables or other writing onto new pages as they adapt to new text being added and automatically move new pages to their correct position.

The rest of the requirements still remained the same as they are in the second half of the project so we have left these alone.

Abstract and concrete architecture changes

https://enigmagroup29.github.io/auber-website/deliverables/Arch2.pdf

We updated the front cover so that it included the names of both the original group and our group.

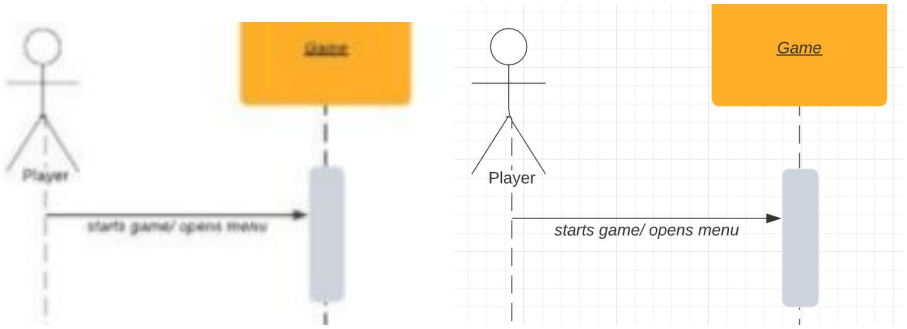
“State Diagram”, “Sequence Diagram” and “UML Class Diagram” have been renamed to “Old State Diagram”, “Old Sequence Diagram” and “Old UML Class Diagram” because we later show newer diagrams that better reflect the game for assessment 2.

The new state diagram includes additional information that was not included on the first diagram. This includes:

- a ‘Difficulty Selection’ state in between the ‘Menu Screen’ and the ‘User Controls Auber’ states, allowing the user to change the difficulty. This implements the FR_DIFFICULTY requirement.
- a ‘Pause Screen’ state, allowing the user to pause/unpause the game and exit to the main menu. This also implements the FR_PAUSE_SCREEN requirement.
- a change of the ‘Tutorial Mode’ and ‘Exit Tutorial Mode’ transitions on the ‘Main Menu’ state to ‘Demo Mode’ and ‘Exit Demo Mode’, reducing confusing naming because a tutorial menu is available from the main menu.
- An additional, ‘Tutorial Menu’ state, which presents a slide show, showing how to play the game. We thought the tutorial in addition to the demo mode would help new players understand how to play better than just a demo mode and in addition, improve our current implementation of the UR_DEMO.

We have remade the sequence diagram to better reflect our architecture. This new diagram includes more information on the main menu, including the tutorial and exit states. Additionally, it clearly shows how the entities NPC, infiltrator, system, and Auber are created by the game, information that the previous diagram left out. This new diagram also includes information about how the game can end as a result of arresting the infiltrators. For some of the actions, we have separated the standard behaviour and exceptional behaviour. For example, after destroying a system, a check is made that looks whether there are any systems left and if not, the game will end.

We increased the resolution of the original images(Old state/sequence/UML diagrams) in the document so that the diagrams' text is clearer and without the heavy compression that google docs applies. Additionally, we added links to the higher resolution image sources so the reader can zoom in further if they so wish. This is particularly important for the UML diagram that includes very small text.



Old low quality image example *New high quality image example*

We reduced white space after the sequence diagram description and after the UML diagram description. This allowed the sequence diagram description and the justification of architecture to fit on their respective pages cleaner.

We decided against changing the diagram descriptions. They provide a short, simple description of what the diagrams represent and we have found no benefit to removing them. In addition, These descriptions are also part of 3.3.1, in architecture section '*a'*, meaning the removal of them would be inadvisable. However, we did abbreviate the UML diagrams' description; the additional explanation of the entity compartments was redundant and provides no additional information to the first sentence so it could just be removed.

We trimmed down the justification a little bit, however it still remains mostly unchanged. Some of these changes included the sentence and grammatical structure, however we did change the text to better reflect the new state diagram. This meant changing the "Tutorial Mode" to "Demo Mode". That said, we thought the justification worked well with our current project and found little reason to change parts chunks. They have explained how the diagrams helped them in places and how they're relevant to the requirements.

We updated the group names on the title page to reflect the current group and group members names.

Methods and plans changes

https://enigmagroup29.github.io/auber-website/deliverables/Plan2.pdf

To begin with in the Team Organisation area of Methods and plans we updated the roles table as it originally contained the roles and jobs of the previous team. We updated this to describe the roles and jobs of our team members and outline the tasks that each member of the team was responsible for. As this table now extended over the side of a page we inserted a page break above it to force this table onto a new page so it would not be cut in half by a page.

Renamed the original teams roles table to “Old teams roles”

we next went over the original document and increased the font size of the titles and made them bold so they were distinguishable from the other text and clearly the titles.

Many of the diagrams the previous team used are now not relevant to the second half of the project. This means that we need to create a new collection of diagrams to take their place. The first diagrams that must be replaced is the gantt chart because we are working on different areas and over a different time frame.

The second diagram we needed to update was the Systematic Plan diagram. This needed to be changed for similar reasons to the gantt chart, the areas we are working on have changed and this diagram no longer represents the areas that we should be working on.

We have removed the sentence “Engineering 1 assessment: Architecture Team 32 “ that appears regularly in the method selection and planning deliverable in seemingly random places, we believe that these might once have been headers for the pages but were broken during the copying process.

We have left the first paragraph in the “outline and justification” area alone because our group follows the same working methodology as the previous group and no edits seemed necessary to form it to our current group ethic.

we have also left the second paragraph in the “outline and justification” area alone as it is talking about communication methods used in the previous group. Both of our two groups seemed to have similar ideas when it comes to possible means of communication between our team members and both of us decided to use discord as our primary communication method.

We have deleted the third paragraph in the “outline and justification” area entirely as it is talking about the use of an online program called “Trello” to help manage people's tasks and activities. As we do not use Trello this paragraph is unrelated to our groups work and does not need to be included.

We have left the fourth paragraph in the “outline and justification” area alone as our group is also using a git repository to store our code for similar reasons to the previous group. We also considered the same options for using gitlab but similarly decided against it for practical reasons.

We have mostly left the fifth paragraph in the “outline and justification” area alone as our group also uses Intellij for the same reasons as the previous group although some of our team have used Eclipse not for coding but to access some of its unique features.

The first paragraph of the “Team Organisation” section had to be entirely rewritten as it is talking specifically about members of the previous group and does not relate at all to our current teams organisational structure. We kept the topic of the area the same which was about team leadership and how we decided on these roles.

we have left the second paragraph on the “Team Organisation” section alone as it is talking about how we assigned roles to each other. Our group followed a nearly identical methodology to assigning roles to each other so we decided that no further edits to this paragraph would be necessary.

The final paragraph on the “Team Organisation” required only minor edits to become accurate to the work style of our group. we removed the area related to the Kanban board as we are not using one.

Updated the group names on the title page to reflect the current group and group members names.

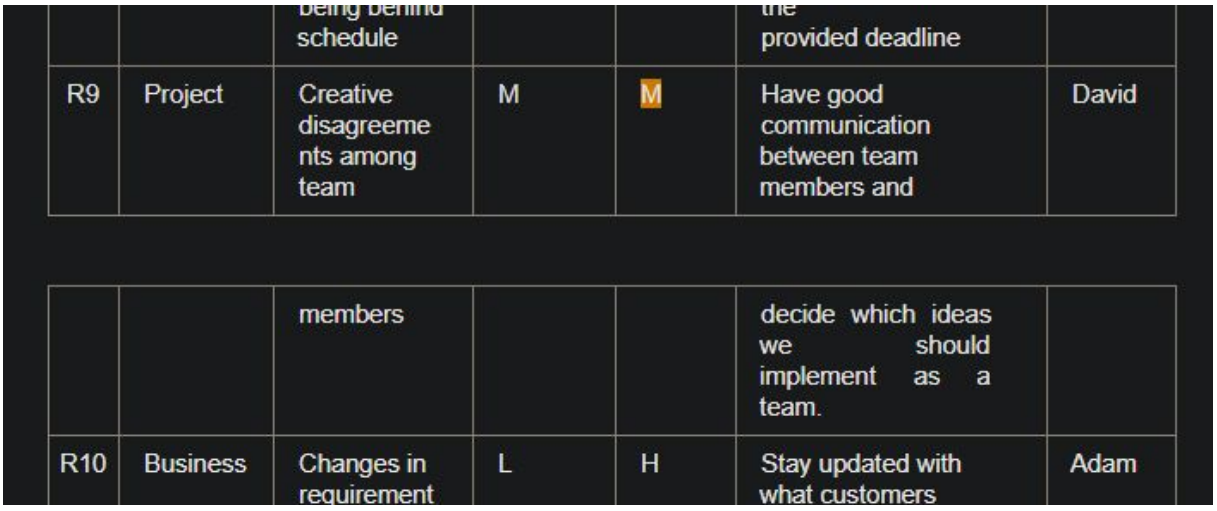
Risk Assessment and Mitigation Changes

https://enigmagroup29.github.io/auber-website/deliverables/Risk2.pdf

The First change we made to Risk Assessment and Mitigation was to correct the spacing of some of the sentences as during the copy some of the sentences have removed all of their spaces making it impossible to read.

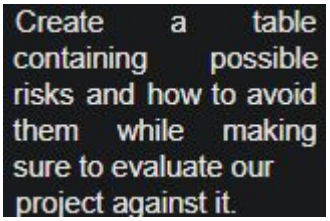
We next decided to re-distribute responsibilities for the risks that the previous team addressed as those risks are still present in our group although the team is different and new people must take responsibility for ensuring that their risks are addressed properly.

Our next change was to merge some of the tables together which had separated into two separate tables in the middle of the page. This made the whole page harder to read as well as making the tables look separate when they are supposed to be a single table. An example of this is shown in the picture below.



		being behind schedule			the provided deadline	
R9	Project	Creative disagreements among team	M	M	Have good communication between team members and	David
		members			decide which ideas we should implement as a team.	
R10	Business	Changes in requirement	L	H	Stay updated with what customers	Adam

The text in the table is formatted so that the sentences centre in the middle of their box, this can look pretty and make the table appear better although in some cases this causes huge gaps in the text making the spacing inconstant and hard to read. An example of this is shown in the picture to the right.



Create a table containing possible risks and how to avoid them while making sure to evaluate our project against it.

Some of the tables are not wide enough to fit the whole word into it on a single line. This means that this word is broken up into multiple lines and along with the centering of the sentences making this very hard to read. We made the columns wider to accommodate this. An example of this is on the right.

Everyone

We added page breaks at the end of sections to separate topics from each other and allow the table to start on a new page rather than starting at the end of the old one.

Added column headings to the top of each page's columns so it is easy to identify columns without going to the start of the table to read the column headings.

We decided to add colour coding to the risk table as this seems to have not been copied to make the priority risks stand out and allow us to quickly identify areas that the group should focus on.

We have added a couple of new risks that have been identified due to the new user requirements set out in the new assessment these new risks include.

- Not being able to understand the previous groups code.
- The previous groups code not being set up to allow easy access to data that we need
- Exams diverting time away from the project.

We decided to remove some risks that are not relevant to the project such as “Ensure data is not leaked”. As our project is on a public github this is not an issue.

Fixed small spelling mistakes found in the table (E15 instead of R15.).

Updated the group names on the title page to reflect the current group and group members names.

We decided not to edit the introductory paragraphs which explain what a risk is and how the group is managing them as our group is following the same guidelines for risk management already and this description transfers easily to our groups current mindset.