OnkoDICOM Project Requirements Documentation

@OnkoDICOM2021

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Peter Qian	5137202	Requirement Analysis, Risks Analysis, Introduction
Peter Yu	6284711	Executive Summary, Conclusion, Introduction

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Letter of Transmittal

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Radiation Oncologist/ Owner
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Dear Dr. Andrew Miller and Dr. Jack Yang,

The attached Product Requirements Documentation provides a comprehensive overview of Team 19's approach to satisfying the requirements of the open-source project, OnkoDICOM. The purpose of this report is to assess the project's overall level of difficulty and feasibility.

Within this document, you will find information on the target market and a comparison of systems with similar functionality currently available to radiation oncologists. The report examines the functionalities to be implemented with consideration to the project's development and deployment environments. The tools necessary for the continued development of this project is also outlined.

The contents of this report are subject to review and any necessary future updates shall be made in a timely manner. If you have any further questions, please do not hesitate to contact us at lhq036@uowmail.edu.au. We look forward to your feedback and working with you further on OnkoDICOM.

Sincerely,

Team 19 – Chai Forest, Felicina Chau, Joshua Thomas, Melinda Vay, Peter Qian and Peter Yu.

Executive Summary

DICOM stands for **D**igital **I**maging and **Co**mmunication in **M**edicine which is commonly familiarised within the field of radiation therapy. DICOM software is utilized to help process, transfer and store medical imaging data. To further assist radiation Oncologists and enhance the functionalities of current existing applications in the market, an open-source solution such as OnkoDICOM has come to place. The project will be developed under the guidelines and requirements from product Owner Dr Andrew Miller. The goal of the project is to expand and incorporate the product's functionality including image fusion, manipulation of Regions of Interest and plugging for machine learning functionalities when processing data.

The key requirements and focuses of the system for this year are listed below:

- Establishing the connection to SQLite database
- Opening and reading of DICOM images with the following formats DICOM-RT, CT, MRI, PET
- Closing of DICOM images without tempting unintended data
- Expanding current functionalities of viewing DICOM images
- Allowing image fusion between DICOM-RT, CT, MRI and PET images
- Expanding current manipulation of regions of interest
- Providing plug-in feature for Machine learning capability

In this document, project development process will be investigated and broken into the following sectors:

- Detailed study on the target market to research and understand the current technologies and solutions
- Analysis on Design Methodologies to help determine the choice of methodology for the product
- Research on possible product Development Environment and Deployment Environment including all the tools that will be utilized
- Comprehensive Analysis on the product's system Requirements

At last, through this document, we are aiming to address any upcoming issues in the development process, and to keep an active engagement between the team and the product owner to have a better understanding of the requirements and provide the best solution.

REVISION LOG

VERSION NUMBER	Updated By	Reviewed By	Version Description	Changes Made
1	Team19		First Submission	-

Introduction

This document will analyse and display the system requirements of the project, OnkoDICOM. The project is currently under its third year of development, aiming to further improve and expand on its functionalities. The application adopts open-source technologies which offer radiation Oncologists with a platform to operate and study on standard datasets such as DICOM-RT, CT, MRI and PET.

The document provides an overview of the project requirements. The following project requirements include: target market analysis, Design Methodology, Development and Deployment environment, Tools, Requirements and Risk Analysis**.**

In-scope

The product is to meet the requirements from Dr Andrew Miller, the outcome of the procject scope can be found below:

- Successful opening of all DICOM files
- Enabling image fusion of DICOM-RT, CT, MRI, PET into one data set
- Expanding current manipulation of regions of interests
- Allowing plug-in feature for machine learning algorithms

Out-of-scope

For this project, the team is not required to develop a web-based counterpart for OnkoDICOM. Updates on the application's GUI are also not expected.

Target Market

What are the current systems/products in the market?

RadiAnt

A PACS (Picture Archiving and Communication System) DICOM viewer that supports the display and manipulation of a wide range of different imaging modalities with the option of purchasing a CD/DVD autorun package. RadiAnt allows for both basic manipulation and advanced manipulations including Multiplanar reconstructions, 3D volume rendering, PET-CT image fusion.

Pricing:

- Subscriptions ranging from $51.20 to $62.40 AUD a year per device depending on quantity of subscriptions purchased.
- One-time purchases ranging from $166.39 to $206.39 AUD per device depending on quantity purchased.
- CD/DVD autorun ranging from $510.38 to $638.38 AUD per device depending on quantity purchased.

Compatibility:

- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Windows Vista
- Windows XP SP3

MicroDicom

A free for non-commercial use DICOM viewer that supports basic manipulation (zooming, panning, measurements, brightness/contrast control etc.) and handling of DICOM imaging modalities.

Pricing:

- Free for non-commercial use
- One-time purchase for commercial use ranging from $103.43 to $129.62 AUD per device depending on quantity purchased.
- One-time purchase for DICOM viewer CD/DVD/USB ranging from $320.76 to $458.24 AUD per device depending on quantity purchased.

Compatibility:

- Windows 10
- Windows 8.1
- Windows 8
- Windows 7
- Windows Vista
- Windows XP

OsiriX

The most widely used DICOM viewer in the world utilized in over 20,000 institutes, supports the display of all medical images produced from medical equipment and is certified as FDA & CE medical device software, class II, for diagnostic imaging. OsiriX MD also includes a large variety of manipulations for viewing and post-processing of DICOM files, utilization of a PACS server that allows for an unlimited number of simultaneous clients, anonymisation options for research and teaching as well as CD/DVD burning.

Pricing:

- Monthly subscription of $104.99 AUD per device.
- Licence with 1-year free updates ranging from $953 to $1192 AUD per device.
- Licence with 2-year free updates ranging from $1453 to $1817 AUD per device.
- Licence with 3-year free updates ranging from $1953 to $2442 AUD per device.
- Licence with 5-year free updates ranging from $2954 to $3693 AUD per device.

Compatibility:

- Any Mac computer, running from OS X 10.11 to macOS 11.0

Mango

Mango or Multi-image Analysis GUI is a medical image viewer that allows for analysis, manipulation and navigation of multiple image formats including DICOM, Analyze, NEMA-DES, MINC, NIFTI and NIFTI2. Mango is a free software that is only available for educational and scientific purposes and not for commercial use.

Pricing:

- Free

Compatibility:

- Desktop: Mac, Linux, Windows
- Browser (Papaya): Firefox, Chrome, Safari and IE
- Mobile (iMango): Apple iPad

LIFEx

LIFEx is a freeware that provides capabilities of DICOM viewing and Texture analysis allowing for calculations across a broad range of conventional, textural and shape indices from PET, MR, US and CT images. LIFEx acts as a DICOM viewer both locally and over a network through a DICOM browser and is compatible with OsirisX and is already in circulation throughout various research labs, nuclear medicine and radiology departments as a tool to assist in the further investigation of various tumour types such as gliomas, cervix, lung, breast and colorectal tumours.

Pricing:

- Free

Compatibility:

- Windows
- Linux
- Mac
- Browser

Are there any products under development that have similar features?

There are 504 repositories on github alone that implement various functionalities associated with DICOM. The large majority of these repositories are of limited scope or are updates on already released products, “DVH Analytics” and “Aliza MS” are examples of products in continued development that feature DICOM viewing and analytical capabilities respectively that share similarities to the OnkoDICOM project.

What will differentiate your system/project?

The OnkoDICOM project provides a platform for DICOM viewing and manipulation while incorporating radiomic functionality. OnkoDICOM is an open-source project that features cross-platform compatibility and has a functional model that promotes continuous adaption and progression by continuous injection of new team members with fresh ideas to maintain the longevity of the project. OnkoDICOM differentiates itself from current systems by providing more comprehensive functionality than other current open-source systems through the incorporation of radiomics for further analysis of DICOM files.

Design Methodology

Scrum, an agile framework, is the development methodology chosen for this established project that our team will continue to develop on. As a team, we will identify tasks with Ashley Maher (Scrum Master), and the project progress will be tracked via a series of sprints created through Redmine. Any queries from the team regarding the product development can be communicated to Dr Andrew Miller (Product Owner) through Slack, and queries related to the subject outcomes can be communicated to Dr. Jie (Jack) Yang (Project Supervisor) through Email and Ashley Maher through Slack.

The team will be employing the following structure throughout the development of this project:

- Weekly Group Meetings
  - Discuss upcoming assignment details
  - Discuss any issues that the team needs clarification on
  - Provide materials required for the weekly sprint meetings
- Weekly Sprints Meetings
  - Discuss any issues or difficulties related to the project
  - Present the completed sprint tasks for the week
  - Identify tasks required to complete for the following weeks sprint
- Scrum Daily Stand-up
  - Performed through Slack in the mornings
- Redmine tickets
  - Create tickets for the tasks needed to be completed each week
  - Create sub-tickets when necessary (log any progress or issues)

Advantages of Scrum

Dealing with international crisis: The appearance of COVID-19 has affected the living situations of every member on the team and subsequently increased the difficulty of team members being able to meet in person and completing tasks. The use of weekly sprints through scrum allows the team to adapt to missed goals and understand the progress made.

Better quality: The use of scrum allows the team to receive immediate feedback from the scrum master or product owner after a sprint ends and before a new sprint starts. This will allow the team some time to implement any missing requirements immediately.

Development Environment

The following table list the development tools and languages that are to be used for the development of the product. Our team will be looking at utilising PyQt5, and Python to develop the product.

Table 1 Development Tools/ Languages

Development Tools/Languages	Description	Reasoning
Python	An object-oriented, high-level programming language with dynamic semantics	Python has been chosen for this project as the current OnkoDICOM is written using Python.
PyQt5	A library that enables the user the ability to use Qt GUI framework from Python.	PyQt5 is the framework used with Python for the current OnkoDICOM and is therefore chosen for this project.

Front-End

Since the development of the system will be consisting of the use of the PyQt5 MVC framework, the front-end of the system will be referred to as the 'View Class'. The view classes will provide the GUI for user interactions. With the 'delegate' or 'controller' class handling data inputs.

Back-End

In the back-end development of the system, the information will be processed using the 'Model Class' of the framework. Where the 'delegate' handles as the controller and communication between the front-end and back-end.

In terms of server side, the system will be required to connect to SQLite database to which database will also be handled in the backend.

Deployment Environment

The following table details the operating systems that are considered for the deployment of the product. Currently, the user wants the application to work on both Windows, Mac OS, and Linux.

Table 2 Operating Systems

Operating System	Description	Reasoning
Windows	An OS developed and published by Microsoft.	The user would like the OnkoDICOM applications to be compatible with the existing Windows, Mac OS, and Linux operating software.
Mac OS	An OS developed and marketed by Apple Inc.	
Linux	An OS or a kernel distributed under an open-source license.	
SQLite	A C-language library that implements a fast, small, self-contained, high reliability, full-feature, SQL database engine.	SQLite has been chosen as the database where the DICOM files will be stored in.

Aside from the operating systems, SQLite is also used for the deployment of OnkoDICOM. The C-language library has been chosen as the database where the DICOM files will be stored in as it implements a fast, small, self-contained, high reliability, full-feature, SQL database engine.

Tools

OnkoDICOM requires many tools throughout its development life cycle. The current tools are listed below and categorised into Project Management and Development tools respectively:

Project Management:

- **Slack:** This is the platform used for written communication between the project team and the team leader, product owner and expert
- **Zoom:** This is the platform used to hold virtual team meetings with the project team and project manager. It is also the platform for the product owner and expert to give demonstrations and for all stakeholders to give presentations.
- **Redmine:** This is the platform where project documentation, product backlog and sprint documentation are managed and stored.

Development:

- **PyCharm:** This IDE is the development environment for OnkoDICOM
- **GitHub:** This online platform hosts the OnkoDICOM source code and is used to adjust and fork code.
- **Linux/Ubuntu:** This operating system is the environment in which the OnkoDICOM application is modified and tested during development.
    - Ubuntu 18.04
    - Ubuntu 20.04
- **Windows and Mac:** These operating systems are used to test OS based differences during OnkoDICOM testing.
    - Windows 10
    - Mac OS Catalina 10.15.7
- **Oracle VM VirtualBox:** This program is used to host the Ubuntu VM, as all team members have windows/mac computers and require access to Ubuntu for development
- **OnkoDICOM:** This is the program the team is working with and knowledge of how the program functions is necessary for development

Requirements Analysis

First Requirement

The user currently wants the system to be able to pull DICOM(.dcm) files off an SQLite database and open DICOM files containing CT, MR and PET/CT image sets. The user wants to be able to open DICOM files pulled from the database in a fault-tolerant procedure.

Second Requirement

Region on Interest (ROI)

When applying a Draw ROI on a slice, only that specific slice contains information of the ROI. The user wants to be able to apply the ROI on a targeted volume and the system automatically applies a rough sketch of the ROI of every slice related to the targeted volume (that is every slice before and after the current slice).

Third Requirement

Region of Interest (ROI)

Currently the ‘Draw ROI’ tool functionality creates a new window for the user to be able to perform ROI analysis on a specified slice in the image set. This new window, display a similar user interface compared to the main menu. The user wants to perform the ‘Draw ROI’ tool within the same window of the main window and eliminate a new window pop for every time the user wishes to draw a ROI.

Fourth Requirement

Image Fusion

The user wishes to be fuse images between CT, MR and PET (under the assumption that the PET images have not already been combined as a PET/CT image set). That is to be able to impose images sets of different image acquisition modes against each other.

Typically, fusing at this current involves in a process of two image sets that may be misaligned, translational and rotational values are used to align image sets together. The DICOM file stores these values so when the user opens the DICOM image sets, the images are fused based on the translate and rotate values.

Fifth Requirement

Operating Software Compatibility

The user wants the OnkoDICOM application to be compatible with current existing Operating Software: Windows, Linux and Mac OS. The user wants to extend the compatibility and therefore the usability to satisfy the needs of radiation oncologists and medical physicists globally.

Sixth Requirement

Currently the dose-volume-histogram (DVH) becomes exported into a CSV file with the use of ‘EXPORT DVH’, where information is stored about the patient ID, RT_STRUCT, volume and dose (cGY) in 10 cGy increments. The Pyradiomics also can be exported into a CSV, containing information of versions of libraries installed and calculations of the image taken under the ROI.

The user wants information of the DVH and Pyradiomics to be stored back into the DICOM_SR (Structured Reporting) file. Where this file contains information to the DVH and Pyradiomics information and be able to extract the information back to CSV files. The user also says, if possible, to do this in a batch process.

Seventh Requirement

Machine Learning Functionality

The user wants there to be a plug-in functionality available for OnkoDICOM in the event the user wishes to implement a machine learning algorithm in their analysis.

Risks, Issues and Dependences

Risk Identification

Revised from A1.

Table 3 Risk Identification Matrix

ID	Impact Rank	Probability	Name	Description	Category	Cause	Response
1	Medium	Medium	Transition from old team to new team	Transition from old and new team will impact the development of the system as the new team will need to develop an understanding of the system in its current state. The new team will need to understand the system in order to introduce new features or continue to enhance pre-existing features.	Time-risk	The new team will have a different work ethics and productivity will differ. There is also a difference in skill sets.	Team will develop the necessary skills to collaborate as a team to work with the project manager. Team will also develop their skillsets to provide benefits to the system.
2	High	High	Learning OnkoDICOM	The new team will be required to understand the system functionalities and the source code. SQLite database is also another system functionality used to	Technical	Team does not have knowledge of the system	Team will study the system's functionalities.

				store and access DICOM(.dcm) files.			
3	High	High	Learning the system's framework	The team will need to learn the current framework the system has been developed in. The current software is built on PyQt GUI framework.	Technical	Team does not have knowledge of the framework the system has been written on.	Team will study the PyQt5 framework.
4	Medium	High	Application of Agile methodology on Redmine platform.	The Redmine platform will be used as SCRUM framework for communication and organization between the SCRUM master/project manager and the rest of the team.	Time	New SCRUM platform that may be unfamiliar to the team. Proprietary system used for documentation of OnkoDICOM	The team will be required to understand how the platform can be used.
5	Low	High	Team miscommunication	Due to the current circumstances od COVID-19, the team communication methods have been impacted. This reduces face-to-face meetings. Online communications methods such as Zoom and Slack have been employed.	Communication	COVID-19	Developers will adapt their communication habits to the circumstances.
6	High	Medium	Patient data may be visible	Patient data may be present even after processing.	Technical	The patient data may be exposed to the development team.	Team will remain confidentiality

7	Medium	Low	Team member unavailable	A team member may become unavailable due to external factors. They maybe become unresponsive to communication methods such as: email, phone, Slack and Facebook.	Technical	An external factor may have caused the team member to become unavailable.	The first procedure is to reattempt contact via the main communication methods. If no communication has been deployed to the unavailable team member, then ask for project manager for further assistance.
8	High	Medium	Unit Test Case	In the event of unit testing, the unit tests could be designed poorly, incorrectly judging the system's performance.	Technical	Error in the unit test case	Fix the error
9	High	Medium	Overdue Sprint Ticket	When the progression of an assigned Sprint ticket is overdue	Time	It is likely students are overwhelmed with university-related or life-related events. Or possibly that the task workload would be too intensive	Communication with the project manager to determine best course of time management.
10	High	Medium	Understanding of project scope/ requirements	Project scope could be defined poorly from the previous documentation (A1) and/ or lacking timely updates, consequently affecting the consistent understanding of the project requirements to be designed and	Technical	Misinterpretation of information obtained from stakeholder meetings. Difference in educational backgrounds also affect the students' ability to grasp	Regular engagement with the clients to confirm tasks to be performed. Communication with the product owner and project manager will mainly involve the logging and revision of

				developed across all team members.		particular requirements.	sprint tickets on the Redmine platform.
11	Medium	Medium	Learning Linear Algebra	There is an inherent requirement of mathematical knowledge from students as the successful implementation of the image fusion functionality requires a strong understanding of matrix multiplication and linear transformations. Incorrect design and application may lead to inaccurate outputs.	Technical	Linear algebra is not a mandatory subject for students enrolled in a course at the School of Computing and Information Technology.	The team will study the mathematical knowledge as required. Note: Team 19 has the option of having their mathematics students train the rest of the group.
12	Medium	Medium	Team Velocity and group dynamics	The pace at which the team completes assigned tasks could be significantly lower than the other contracted teams, consequently impacting on the overall project schedule and project owner satisfaction.	Time-risk, Communication	Each team member will have a different work ethic and pre-existing commitments.	Team members will work to compromise with one another by using their individual strengths to support one another. Daily Scrum comments to build mutual support and maintain open communication within the team.

Risk Monitoring

Top Ten Risk Item Tracking

As part of Team 19's risk management strategy, Top Ten Risk Item Tracking is utilised to monitor the most significant risk items identified in the section above. This maintains the team's awareness of the risks, particularly those concerning communication and time, throughout the project life cycle of OnkoDICOM and periodically assess the effectiveness of the risk mitigation strategies put in place. The table below offers a comparison of the risks identified in the past two months (as of time of submission, we will be looking at monthly periods March – April and April - May 2021 respectively):

Table 4 Top 10 Risk Item Tracking March - May 2021

MONTHLY RANKING				
Risk Event	**Rank This Month (April 2021 – May 2021)**	**Rank Last Month (March 2021 – April 2021)**	**Number of Months in Top Ten**	**Risk Resolution Progress**
Overdue Sprint Ticket	1	1	2	Revise time management with project manager.
Poor Scope/ Requirements Definition	2	6	2	Daily interactions with SCRUM Master to clarify scope and affirm tasks.
Learning the system's framework	3	4	2	Review of PyQt5 and collectively write an additional document that summarises the team's findings to demonstrate a working knowledge of the framework.
Team Velocity and Group Dynamics	4	5	2	Daily Scrum interaction using Slack

Application of SCRUM on Redmine	5	2	2	The team is becoming more familiar with the documentation standards of the proprietary system used for OnkoDICOM.
Team Member Unavailable	6	9	2	Extended self-imposed deadline for their contribution to this documentation. Other team members on standby to take over if team member's health issues have yet to be resolved.
Team Miscommunication	7	7	2	A more consistent interaction with the Scrum Master on Slack can be observed. Daily Scrum comments.
Learning OnkoDICOM	8	8	2	Revise OnkoDICOM presentation given by Dr. Andrew Miller.
Patient Data may be visible	9	-	1	Members across all three teams to return the required confidentiality agreement to the project manager as soon as possible. Discussion about patient data to remain with team members,

				project manager and product owner only.
Transition from old team to new team	10	3	2	Continue making consistent efforts to learning the required languages.

Note: The above ranking was determined with a special consideration to the deliverables required for the submission of this document as well as a mini project assigned to all contracted teams by the Scrum Master.

Redmine Product Backlogs

The application of SCRUM on the Redmine platform has enabled the monitoring of task-associated risks as sprint tickets have the option to be logged with a parent task. This clearly establishes the dependencies between the affected and impacting tasks. Examples of this can be found in the product backlogs attached in this documentation.

Risk Mitigation Strategies

The table below defines risk mitigation strategies that will be deployed during the remainder of the project with Team 19.

Table 5 Risk Mitigation Strategies

Technical	**Communication**	**Time**
Increase frequency of monitoring team performance	Constant use of communication tools such as Slack, Discord and Facebook	Consistently create sprint tickets and assign members to tasks to their capability
Team discussion on research performed to increase team's understanding with the tools used.	Daily Slack Mornings (optionally on weekends)	Frequently update Sprint tickets to record team's progress
	Frequent communication between Project Manager and Team	
	Regular logging of sprint tickets to ensure product owner and project manager remain aware of the tasks being completed by the team	

Conclusion

This document is the continuation of the OnkoDICOM project, progressing into its third year. It is the summary of the specified project requirements that are to be met in order for the development of the software application. As discussed in the target market analysis, the comparison between OnkoDICOM and its competitors are outlined. From this, we are able to analyse the various products on the current market and their functionalities to refine our specified requirements of OnkoDICOM.

For the successful development of the project, we have employed SCRUM as the chosen framework. The use of SCRUM allows constant communication between the development team and relevant stakeholders. Project progresses will be tracked over a series of sprints and adjustments will be made along the way when necessary. Therefore, the specified requirements stated by the product owner of the OnkoDICOM will be satisfied throughout the development of the project.

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Glossary

WORD/ ABBREVIATION	DEFINITION
COMPUTERISED TOMOGRAPHY (CT)	Using computer processing to create cross-sectional image slices of the human anatomy, including organs and soft tissues, from a sequence X-ray images taken from multiple angles across the body. (Mayo Clinic 2020)
DOSE VOLUME HISTOGRAM (DVH)	Information regarding to the amount of the ROI volume receiving Dose (cGy). (OnkoDICOM n.d.)
MACHINE LEARNING (ML)	The application of non-linear algorithms to get something for organisational/ prediction services
MAGNETIC RESONANCE IMAGING (MRI)	3D anatomical images generated for the purpose of detecting, diagnosing, and treating diseases. The non-invasive imaging technology creates these images by tracking the rotational axis of protons present in the water that makes up living tissues. (National Institute of Biomedical Imaging and Bioengineering n.d.)
POSITRON EMISSION TOMOGRAPHY (PET)	An imaging test that requires the patient to consume a radioactive drug combined with a tracer. This will then concentrate in body areas with higher levels of chemical activity, which is normally an indicator of disease and show as bright spots in the images. (Mayo Clinic 2020)
PYRADIOMICS	A Python open-source library that examines the histogram and grey scale variations in scan areas designated as a Region of Interest (ROI). (OnkoDICOM n.d.)
RADIOMICS	The examination of the texture and statistical analysis of the image data rather than simply looking at the grade scale
RT-STRUCTURE SET (RT_STRUCT)	Contours and position on the CT, around the organs and tumour

Appendix

Meeting Agendas/ Minutes Summary

WEEK/ DATE	MEETING AGENDA	MEETING MINUTES
WEEK 2 – 9TH MARCH 2021	Group Formation and Roles	Projects of interest discussed and member roles informally delegated.
WEEK 3 – 17TH MARCH 2021	Final selection of top 3 projects	Projects selected – OnkoDICOM, Sunly, IMB. Project selection form submitted and client directly contacted.
WEEK 4 – 23RD MARCH 2021	Introduction to Redmine	Team members' accounts created on Redmine. Team Slack channel created as primary communication channel with ScrumMaster.
WEEK 4 – 26TH MARCH 2021	Discussion of Assignment 1	A1 sections evenly distributed.
WEEK 5 – 31ST MARCH 2021	Introduction to DICOM	Attended Zoom presentation by DICOM expert. A1 to be submitted by Peter Qian.
WEEK 5 – 1ST APRIL 2021	Overview of Ticket Standards	Mini project assigned to all three groups. Team to devise sprint ticket structure in spreadsheet.
WEEK 6 – 8TH APRIL 2021	Review Sprint Spreadsheet	All academic submissions must also be ticketed in Redmine. Sprint ticket structure needs improvement and provide feedback to other teams on their ticket structure.
WEEK 7 – 13TH APRIL 2021	Overview of Assignment 2	Went over the specifications for Assignment 2. Noted questions to ask ScrumMaster.
WEEK 7 – 15TH APRIL 2021	Revision on Sprint 1	More sprint tickets need to be logged. Improved version to be submitted for review.

MIDSESSION RECESS – 22ND APRIL 2021	A2 Requirements and Product Backlog Presentation by Dr. Andrew Miller.	Discussed product backlog and asked questions about OnkoDICOM's design methodology for Assignment 2 submission. Attended presentation by Dr. Andrew Miller on OnkoDICOM's purpose and current functionality.
MIDSESSION RECESS – 23RD APRIL 2021	Overview of Requirements	Assignment 2 sections distributed and associated tickets logged in Redmine.
WEEK 8 – 29TH APRIL 2021	Meeting Format and Weekly Sprint	Prepare for next week's sprint. Team to download OnkoDICOM and investigate its class structure.

Product Backlog

Sprint #1229

Edit Log time Watch Copy Delete

Sprint20210429

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Added by Joshua Thomas about 14 hours ago. Updated about 14 hours ago.

Status:	In Progress	**Start date:**	23/04/2021
Priority:	Normal	**Due date:**	
Assignee:	-	**% Done:**	0%
		Estimated time:	(Total: 0.00 h)

Subtasks

Add

Sprint #1195: PyQt5	New	23/04/2021		
> Sprint Subtask #1196: Views	New	23/04/2021	Peter Qian	
> Sprint Subtask #1197: Model Class	New	23/04/2021		
> Sprint Subtask #1198: View Class	New	23/04/2021		
> Sprint Subtask #1199: Delegate Class	New	23/04/2021		
> Sprint Subtask #1200: Drag and Drop Model	New	23/04/2021	Shengjie Yu	
> Sprint Subtask #1201: Proxy Models	New	23/04/2021	Joshua Thomas	
> Sprint Subtask #1202: Model Subclassing	New	23/04/2021	Chai Forest	
Sprint Subtask #1230: Virtual Machine	New	29/04/2021		
Sprint Subtask #1231: Unit Testing	New	29/04/2021		
Sprint Subtask #1232: Onko Source Code	New	29/04/2021		

Related issues

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Sprint #1087

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Sprint20210411

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Added by Peter Qian 18 days ago. Updated 16 days ago.

Status:	Closed	**Start date:**	11/04/2021
Priority:	Normal	**Due date:**	14/04/2021
Assignee:	-	**% Done:**	100%
		Estimated time:	2.00 h

Description

Quote

Problem/Motivation

Team is required to review Teams 14 and 23's SCRUM Product Backlog and provide feedback on other's product backlog as well develop ideas on improving our own product backlog.

Proposed Resolution

Each member will review the SCRUM Product backlogs. Then the team will need to discuss the organisation of the product backlogs.

Done Definition

1. Document detailing feedback on Team 14 and 23's Product backlog
2. Document detailing improvements on our Product backlog.

Files

spreadsheet-feedback.pdf (379 KB) Peter Qian, 13/04/2021 04:58 PM

Subtasks

Add

~~Sprint Subtask #1092~~: Week 7 Task - Everyone: Detail Feedback on Product Backlog	Closed	11/04/2021	13/04/2021	
~~Sprint Subtask #1093~~: Week 7 Task - Everyone: Revise our own Product Backlog	Closed	11/04/2021	14/04/2021	

Related issues

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Sprint #1062

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Sprint20210408 - A2: Project Requirements Documentation

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Added by Peter Qian 22 days ago. Updated about 14 hours ago.

Status:	In Progress	**Start date:**	08/04/2021
Priority:	Normal	**Due date:**	30/04/2021 (Due in 1 day)
Assignee:	-	**% Done:**	66%
		Estimated time:	(Total: 0.00 h)
		Spent time:	(Total: 0.50 h)

Description

Quote

Problem/Motivation

Group is to write a professional report outlining plans for development of the system.

Proposed Resolution

Plan and allocate tasks among members of the team. Regular slack mornings to keep team updated on progression.

Done Definition

1. Project Requirements Documentation

Subtasks

Add

~~Sprint Subtask #1064~~: Letter to client/supervisor	Closed	08/04/2021	27/04/2021	Felicina Chau	
Sprint Subtask #1066: Executive Summary	New	08/04/2021			
Sprint Subtask #1071: Conclusion	New	08/04/2021	30/04/2021		
~~Sprint #1226~~: Design Methodology	Closed	08/04/2021	27/04/2021	Melinda Vay	
~~Sprint #1227~~: Development Environment	Closed	08/04/2021	28/04/2021	Melinda Vay	
~~Sprint #1228~~: Deployment Environment	Closed	08/04/2021	28/04/2021	Melinda Vay	

Related issues

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Sprint #1060

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Assignment 1 - Initial Project Description

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Added by Felicina Chau 22 days ago. Updated 22 days ago.

Status:	Closed	**Start date:**	24/03/2021
Priority:	Normal	**Due date:**	02/04/2021
Assignee:	-	**% Done:**	100%
		Estimated time:	10.00 h (Total: 10.75 h)
		Spent time:	10.00 h

Description

Quote

Assignment 1 for CSIT321, deliverable for Jack Yang (Subject Coordinator)

Subtasks

Add

~~Sprint Subtask #1061~~: Initial Business Case	Closed	24/03/2021	02/04/2021	Peter Qian	
~~Sprint Subtask #1063~~: Initial Project Scope	Closed	24/03/2021	02/04/2021	Peter Qian	
~~Sprint Subtask #1065~~: Scope Management	Closed	24/03/2021	02/04/2021	Peter Qian	
~~Sprint Subtask #1067~~: Market Analysis	Closed	24/03/2021	02/04/2021	Chai Forest	
~~Sprint Subtask #1068~~: Time and Quality Management	Closed	24/03/2021	02/04/2021	Felicina Chau	
~~Sprint Subtask #1069~~: Risk Management	Closed	24/03/2021	02/04/2021	Peter Qian	
~~Sprint Subtask #1070~~: Member Skills and Experience	Closed	24/03/2021	02/04/2021		
~~Sprint Subtask #1072~~: Stakeholder Matrix	Closed	24/03/2021	02/04/2021	Joshua Thomas	
~~Sprint Subtask #1073~~: Group Charter	Closed	24/03/2021	02/04/2021	Shengjie Yu	
~~Sprint Subtask #1074~~: Group Ethics	Closed	24/03/2021	02/04/2021	Melinda Vay	
~~Sprint Subtask #1075~~: Writing and Collation of Meeting Minutes	Closed	24/03/2021	02/04/2021	Felicina Chau	

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