WBL301 Synoptic Project

2022/2023

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Automating tasks in a healthcare trust

Links

Source code: GitHub *https://github.com/rkerswell/DTS.git*

Project Vision

This project aims to develop a functional environment to operate Robotic Process Automation (RPA). We want to make use of the Software Development Life Cycle to apply existing programming knowledge to the UIPath Tool with some examples of workflows, coding and state machines.

The work will be within a IT project based environment using Dev-Ops/Agile practices and philosophies to integrate the processes between development and IT. In addition there will be the use of Lean principles through business analysis methods to streamline the development life cycle will be required.

The project will need to establish testing methods and practices to satisfy local and external (NHSe – National Health Service England) practices, legal and client requirements. It will also be establishing deployment methods for smooth release of automations placing them into routine procedure before consideration for ongoing support needs to be addressed.

Key to the project will be the continuous evaluation practices through benefit reporting which will consider both the organisation, NHSe and the patients of the University Hospital Plymouth Trust (UHPT). The key reasons behind the project are to increase the Trust efficiency, save the Trust money, enable clinical staff to increase patient care and allow new activities to be established.

To align with the Trust's Performance Information Teams vision, this project will be 'Implementing RPA to positively impact the NHS and patient care'.

Objectives

To create a functional environment and overarching process allowing two live Robotic Process Automation (RPA) by 1st March 2023 that will be a cost benefit for University Hospitals Plymouth Trust.

To deliver an RPA that will increase the response rate to 20% of Accident & Emergency patients providing feedback, meeting NHS National targets.

To increase the availability of operational resource data from 5 to 7 days for critical decision making by the Senior Leadership Team at University Hospitals Plymouth Trust using an RPA solution.

Technologies, Tools and Programming Languages

UIPath Studio Pro
UIPath Orchestrator
Dev Ops
C#
Visual Basic

HTML
Javascript
Microsoft .NET
SQL
SQL Server Reporting Services
SQL Server Management Studio
XAML
Microsoft Exchange
Microsoft Office
Azure Key Vault

Risk Plan

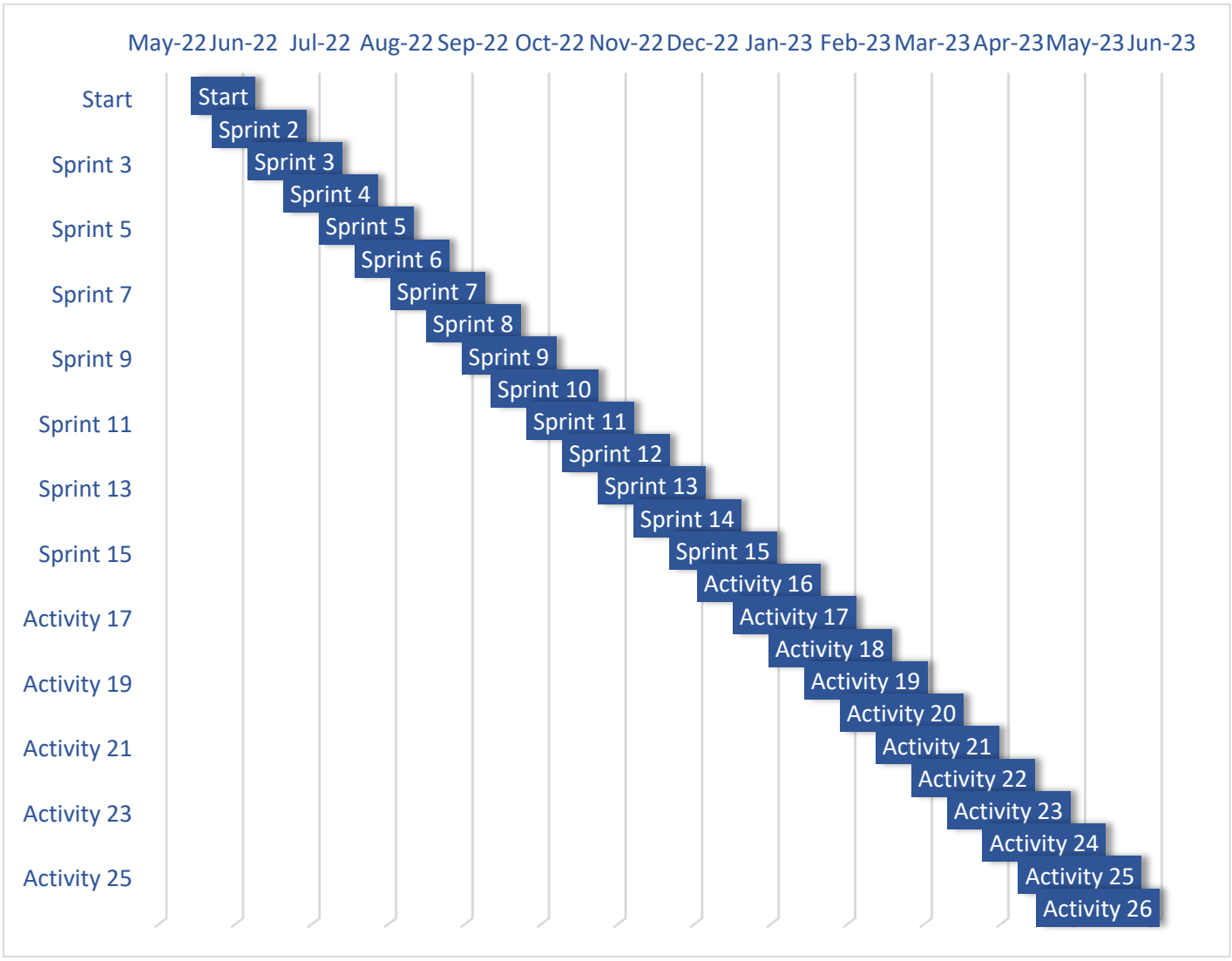
For the risk plan scoring matrix, see appendix.

Risk	Description of Impact	Likelihood (1-5high)	Impact (1-5high)	Risk level (Likelihood x Severity)	Mitigation strategy
Lack of IT resource at UHPT	*Work may cease*	*4*	*4*	*16*	*To identify requirements at earliest point. Implement procedure of work to ensure this.*
Not Information Governance compliant	*Process cannot go live*	*2*	*5*	*10*	*Work directly with the Trust's Information Governance Team to ensure timely compliance of processes.*
Not getting processes live	*Unable to provide final project*	*2*	*5*	*10*	*To ensure that the processes are functioning within the Dev/Test environment.*
Difficulties writing up the report in academic English.	*Exceeding allowed time, loss of marks*	*3*	*3*	*9*	*Booking a one-to-one session with Justin Truscott in January.*
Clinical System Access protocols	*Smart Card, Password change requirements*	*3*	*3*	*9*	*Create a secrets vault and implement a system to maintain*
UIPAth updates, licences renewals	*Expiry prior to end of project, requires further Trust financial commitment*	*2*	*4*	*8*	*Maintain update requirements, and work to license renewal dates.*
NHSe project assistance loss	*Change in direction of project, reduced support*	*2*	*4*	*8*	*Ensure complete program is fulfilled and handover meetings if required.*
Clients change of requirements	*No longer required, priority changes*	*3*	*2*	*6*	*Set up development work, ensuring routine verifications and changes are recorded.*
Becoming physically unwell	*Unable to work and meet deadlines*	*3*	*2*	*6*	*A plan to complete the project two weeks ahead of the deadline.*
Changes to UHPT Operating software	*Change of systems, significant upgrades.*	*1*	*5*	*5*	*Stakeholder meetings, approval group.*
Upskilling to meet requirements	*Time consuming element of the project*	*1*	*4*	*4*	*Continual learning required using UIPath Academy and other available tools.*

Team Member/resources changes	*Loss of related skills or dependancies*	*1*	*3*	*3*	*Maintain a record of skills required through documentation.*
Losing the laptop where the code is kept.	*Loss of work, unable to meet deadlines*	*1*	*3*	*3*	*Create a backup copy of the code on OneDrive, and use Github repositories.*

Proposed Gantt chart

The following procedure of work will follow an Agile methodology in line with my workplace, however it won't use the Azure DevOps system to monitor but will align to similar practices with DevOps. Each element of work will consist of 14-day Sprints which will involve specific commencement on completions of work. Each sprint will follow the structure: Assess, Plan, Do, Review cycle and iterated in each. Task are identified in advance with each milestone. However, Sprints will remain flexible and proportionate to enable the Software Development Life Cycle to remain iterative in its approach.



Position	Start Date	End Date	Milestone/Activity	Tasks
1	06/06/2022	19/06/2022	Start	To progress and aim to complete UI Path training academy
2	20/06/2022	03/07/2022	Sprint 2	Mentor development of Jnr Developer's SQL skills
3	04/07/2022	17/07/2022	Sprint 3	Understanding steps involved in test, deployment and continual improvement following automation design and development through DevOps
4	18/07/2022	31/07/2022	Sprint 4	Setting the standard for annotations and best practices within UiP (along with Jnr Developer) with accompanying documentation
5	01/08/2022	14/08/2022	Sprint 5	Introduce mentoring structure for potential new starters / developers
6	15/08/2022	28/08/2022	Sprint 6	Process development
7	29/08/2022	11/09/2022	Sprint 7	Process development
8	12/09/2022	25/09/2022	Sprint 8	Process development
9	26/09/2022	09/10/2022	Sprint 9	Process development
10	10/10/2022	23/10/2022	Sprint 10	1 Project Initiation 20th October 2022 During scheduled stand-ups
11	24/10/2022	06/11/2022	Sprint 11	Successful deployment of first internally built automation
12	07/11/2022	20/11/2022	Sprint 12	Process development
13	21/11/2022	04/12/2022	Sprint 13	Process development
14	05/12/2022	18/12/2022	Sprint 14	During scheduled stand-ups
15	19/12/2022	01/01/2023	Sprint 15	By 25th April 2022
16	02/01/2023	15/01/2023	Activity 16	Aim for innovation recognition award (In conjunction with NHSE/I) – RPA TEAM
17	16/01/2023	29/01/2023	Activity 17	Process development
18	30/01/2023	12/02/2023	Activity 18	Process development
19	13/02/2023	26/02/2023	Activity 19	Process development
20	27/02/2023	12/03/2023	Activity 20	Process development
21	13/03/2023	26/03/2023	Activity 21	Process development
22	27/03/2023	09/04/2023	Activity 22	Poster & Description Draft 30th March 2023
23	10/04/2023	23/04/2023	Activity 23	Poster & Description By 25th April 2022
24	24/04/2023	07/05/2023	Activity 24	Project Portfolio Complete 8th May 2023
25	08/05/2023	21/05/2023	Activity 25	Viva W/C 15th May 2023 During Viva
26	22/05/2023	30/05/2023	Activity 26	Project End

Keywords

Automation, NHS, UIPath, Robotic Process Automation, RPA, SDLC (Software Development Life Cycle): Design, Development, Testing, Implementation, Agile, Gantt

Appendix

Likelihood		Impact				
		Insignificant	Minor	Moderate	Severe	Catastrophic
	Almost Never This probably will never happen/recur.	1	2	3	4	5
	Unlikely Do not expect it to happen/recur, but it may do so.	2	4	6	8	10
	Likely Might happen or recur occasionally.	3	6	9	12	15
	Highly Likely Will probably happen/recur, but is not a persisting issue or circumstance.	4	8	12	16	20
	Almost Certain Very likely to happen/recur; possibly frequently.	5	10	15	20	25

Figure 1. NHS Risk Assessment Criteria