Kings Casino

Lottery Draw

Detailed Process Description

Version 1.5

Revision History

Date Issued	Version	Description	Author
01/07/20	1.0	Initial draft of final project.	DA, JH, GW
03/07/20	1.1	Introduction & manual process flow added.	DA, JH, GW
06/07/20	1.2	Manual process description added.	DA, JH, GW
07/07/20	1.3	Automation workload & robot initialisation process walkthrough added	DA, JH, GW
08/07/2020	1.4	Robot CRUD process walkthrough added	DA, JH, GW
09/07/2020	1.5	Sections 1,2 and 3 have been completed, with updates to section 4 completed.	DA, JH, GW

Contributors

The content of this document has been authored with the combined input of the following group of key individuals.

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Business Sign-off

The following table contains the people required to sign-off and/or review this document and those that require the document for information only.

Name	Department	Responsibility
Chris Lucas	*Consultant Project Liaison*	*Sign off / Review*
Matt Hunt	*Consultation Contract Manager*	*Review*
Alberto Borghi	*Project Supervisor*	*Information*

Document Classification

Classification	*Company Confidential*
Definition	*Users information is confidential and to be kept by Alberto Borghi.*
Context	*Users details are to be kept securely and confidential within the company. Failure to do so results in a negative impact to the credibility of Kings Casino*

Contents

King's Casino has reached out to QA Consulting to help bring their services online. A specialist company for events directed towards elderly individuals, King's Casino, has taken a hit during the Covid-19 pandemic and is looking to adapt to the new environment by transferring a lot of their operations online.

Initially, King's Casino ran bingo/lotto events for the elderly, where they would run a manual process that involved the repetitive and menial task of collecting user details, storing them and running the actual bingo. This involved drawing a number for all the entered users, at the start of the week (monday) and as the week progressed, a new number would be drawn for the user each consecutive day, with a cumulative increase until the user reached their final total on the Friday. The user with the highest total by Friday, would be "crowned" the winner of King's Casino.

QA Consulting has had a change to view the company's manual process and has proposed the opportunity for automation in the following areas:

- *User registration*
  - *Usually, the user's details will be collected manually, and then inputted manually into the user database, however QA has proposed an automated solution for this.*
- *Lotto-Drawing*
  - *King's Casino would draw a new number for each participating user each day, store that number, and calculate the cumulative total for that user, until the final total on friday. However, QA has offered to automate that process so that the robot is able to calculate the cumulative total of each user and report back to the individual user, their current total.*
- *User-Purchases*
  - *Users are given the opportunity to "boost" their chances of winning the competition, by paying an additional £1, which allows the user to have an additional ball drawn that day, increasing their cumulative result. This option is available to the user on a daily basis. QA has proposed to automate the payment - transaction processes, where the automation would track the incoming transactions, determine who has paid what, and how much of an increase the individual is entitled to.*
- *User-Receipt and Reporting*
  - *Usually, King's Casino would send a response email back to users when a user-related action has occurred, either registration-confirmation or an update/delete alteration, however this can be automated so that the user will automatically receive an emailed-receipt of the related action to their account.*
  - *In terms of reporting, King's Casino has said that their reporting wasn't as consistent as they would like, as sometimes it was manually taxing to record all changes to users, as well as their updates and the current status regarding the competition. QA proposed the automation of the reporting process, where King's Casino is able to receive a daily or weekly report of the desired information - to be decided by the company.*

2.1 OVERVIEW

Overview of the manual process as it stands currently. Includes bullet pointed list of high-level steps to take to run the process.:

The first process QA will tackle to automate will be the user's journey throughout the company, which includes; set up, registration, update of information, unsubscription of services, and the competition.

- *Set up*
  - *Kings Casino set up the event within a community centre/care home environment*
  - *Users are then asked if they would like to participate in the game*
- *Registration:*
  - *If the user has chosen to take part, the user's entry will be recorded along with their credentials*
  - *These details are stored within a workbook*
  - *Once the user's entry is recorded, they are assigned a random number*
- *Update User information:*
  - *Users have the option to update their credentials*
  - *The user emails Kings Casino informing them of the updates they wish to make*
  - *Kings Casino update that user's information within the workbook*
- *Unsubscription of Services:*
  - *Users have the option to unsubscribe from the competition*
  - *The user emails Kings Casino informing them that they wish to be removed*
  - *Kings Casino remove that user's information within the workbook*
- *Competition:*
  - *Users are required to pay £5 upon entering the competition*
  - *Users are then assigned a random number*
  - *A daily draw takes place, giving users an additional number each day*
  - *Users are informed of their position*
  - *Users given the option to increase their chances of winning*
  - *User pays additional fee of £1 to increase chances*
  - *Extra ball added to their daily draw to increase chances*
  - *Final draw on Friday revealing winner; the user with the highest total.*

2.1.1 USER PURCHASES / TRANSACTION TRACKER

Users initially deposit £5 to Kings Casino, entitling them to partake in the competition. The user can make further payments into the competition to try to better their stats and increase their odds of winning. This in turn grants the user an extra ball to add to their total, each of these transactions costs the user an extra £1. All transactions between Kings Casino and their users are recorded.

2.1.2 USER RECEIPT AND INFORMATIONAL UPDATES

Should the users choose to partake in the event, add an extra ball, or change their details (updating/deleting), Kings Casino sends a receipt to the user informing them that their requests have been acknowledged and will be processed.

Daily updates are also sent to the user, informing them of their position. Allowing the user to recognise where they are within the competition and to aid them in the decision of whether to try to increase their odds by purchase of an extra ball.
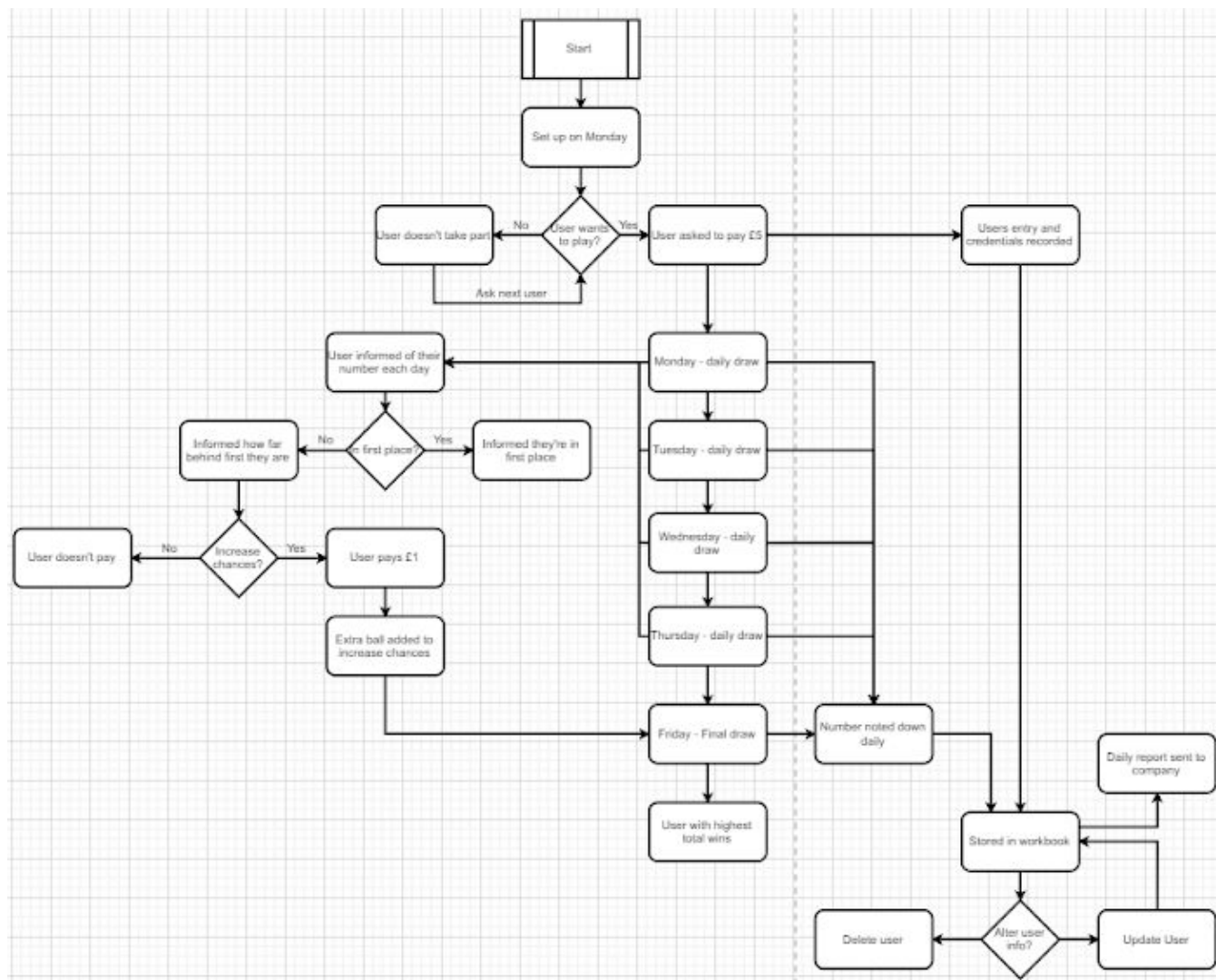
2.1.3 DRAWING OF RESULTS

The randomly assigned numbers will be aggregated by Kings Casino throughout the week. Users will receive an email informing them of their number on a daily basis. If a user has opted for an additional number to be drawn, this will also appear in their email. On the Friday of that week, the numbers will be reviewed within the database and the user with the highest total will be the winner of that week's competition.
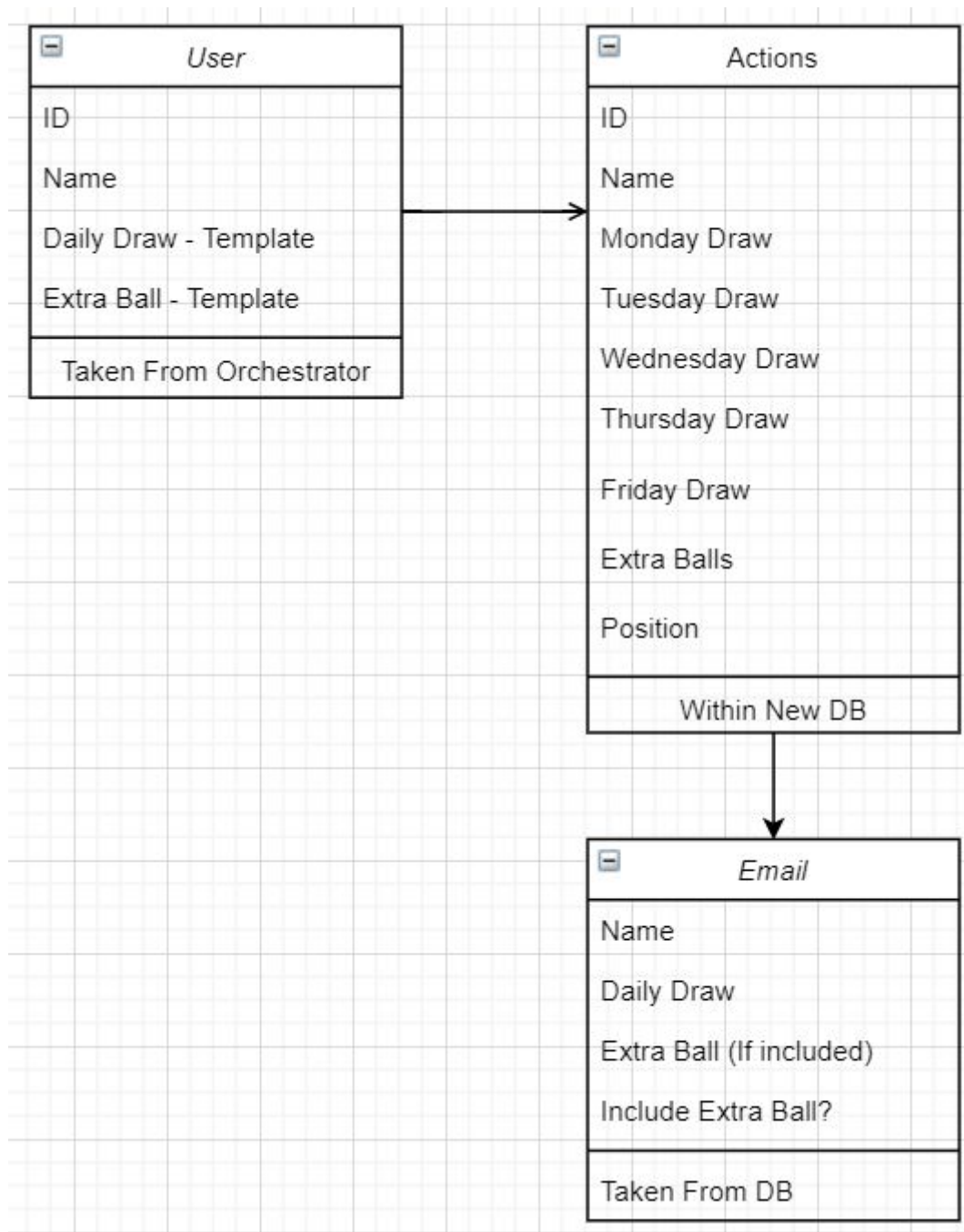
2.1.4 REPORTING

Kings Casino collates all the transactions that have occurred that day as well as any user registrations, update/delete alterations. These reports are then sent to the company by email, allowing Kings Casino to have a record of all the actions taken within their database, as well as being able to track all transactions the company receives, such as registration fees and any additional payments made to increase the users chances.

2.2 DETAILED PROCESS FLOW

*Detailed flow diagram covering **all** steps in the current manual process*

User	
ID	
Name	
Daily Draw - Template	
Extra Ball - Template	
Taken From Orchestrator	

Actions	
ID	
Name	
Monday Draw	
Tuesday Draw	
Wednesday Draw	
Thursday Draw	
Friday Draw	
Extra Balls	
Position	
Within New DB	

Email	
Name	
Daily Draw	
Extra Ball (If included)	
Include Extra Ball?	
Taken From DB	

3 AUTOMATION PROPOSAL

3.1 OVERVIEW

High level overview of the proposed automation, including detail around the type of automation

QA Ltd proposes to integrate automation for the entire process – allowing for a more efficient and streamlined process.

- *Initialization Process:*
  - *The initialisation process involves the robot accessing the company's email account and going through it's inbox's. It also runs through the Config JSON array that was written up and applied throughout the project.*
- *User Registration Process:*
  - *Scan Tobor inbox for "CREATE" emails*
  - *Scrape the user details from the email*
  - *Insert user details into the user database*
  - *Log the new user actions within company inbox to act as the daily report*
- *User Update Process:*
  - *Scan Tobor inbox for "EDIT" emails*
  - *Scrape the user details from the email*
  - *If the users ID matches the ID of the user in the database, change the fields within that row*
  - *Log the updated user actions within company inbox to act as the daily report*
- *User Delete Process:*
  - *Scan Tobor inbox for "DELETE" emails*
  - *Scrape the user details from the email*
  - *If the users ID matches the ID of the user in the database, remove row*
  - *Log the deleted user actions within company inbox to act as the daily report*
- *Lottery Draw:*
  - *Scan Kings Casino Orchestrator Queue, which contains the user's information from the database.*
  - *Check the "roll" status of each individual, whether they have an existing number (in which case a new number is added on top of the existing) or if they don't have an existing number (in which case they're given a new random lotto number).*
  - *The robot detects the day of the week, and assigns the numbers accordingly, refreshing the lottery draw throughout the week and accumulating each (viable) user's total, until it reaches friday.*
  - *At the end of each day, the transaction data is collected and sent back to the orchestrator, where the reports automation is able to pull the data and compile a report, to be sent off to Kings Casino.*
  - *The robot will also send another report to each user, to inform them of their current number status within the lotto draw competition, and if it is a friday, it will inform the user that it has either won or lost that week's competition.*
- *Report Process*
  - *Users rolls are noted daily*
  - *All results are recorded and sent to the individual users*
  - *A copy is also supplied to the company*
  - *On a weekly basis, all users who partook are noted*
  - *Their results are then sent to them*
  - *A copy is also sent to the company*

3.2 Automated Process Flow

The automated process flow is similar to that of the manual process flow, in a sense that all actions will be automated instead of manually completed.

3.3 Target Systems & User Requirements

Name	Description	User Permissions/Access
MS Outlook	Email Inbox	Used to simulate the company's email. Robot required access to company inbox - kingscasino@outlook.com - to access to users data
Gmail	Email Inbox	Used to simulate the user's email
User Database	Written in MS Excel	Used to simulate the Tobor Inc. internal database
UiPath: Orchestrator	Handling Transaction data and user data.	Accessed by the automation robot to handle email send-offs and competition processes.

3.4 Impacted Business Areas

- *The automation will affect the general business, which includes the majority of the departments, ranging from the accounting and finance department, to the senior department that oversees the general.*

- *The marketing department could use this opportunity to advertise the robot's capabilities, and the advance automation processes.*

- *Departments such as human resources aren't necessarily affected by automation, however it may be the job of the HR department to explain any changes to some employee's work schedules, as the automation will most likely relieve some of the workload that certain individuals have.*

3.5 Workload

Metrics related to the automation, table example below

Average No. Users in Database	*30*
Average No. New Users Registered (Weekly)	*2-3*
Average No. User Updates (Daily)	*1-2*
Are there any periods when a higher workload is anticipated?	*Normally, holiday seasons are considered more active, but the difference isn't very significant, so King's Casino would experience a consistent amount of activity throughout the year.*
Average No. purchase transactions completed (daily)	*3 -5 transactions; it's a mix of user registrations and those who pay extra to increase their chances of winning.*

How many people do this process per day? (Average)	1-2

Summary of average time process takes a user to run manually, including timings of any dependent parts such as responses coming back from 3rd parties.

Automating the steps below will realise an average time saving of 405 minutes (6.75 hrs) per day, which is 33.75 hours per week and 2,025 minutes weekly, for <Lottery Draw>:

- *User Journey: This includes altering the internal database and sending an email-receipt to the user.*
  - Registration: 10-15 minutes
  - Updates: 10-15 minutes
  - Deletes: 10-15 minutes

- *Competition: Generating a new number for each user, and updating their cumulative total, as well as sending out emails back to the user to update them on their competition status takes around 2-3 hours, with the current number of 30 users within the internal database.*

Total User Journey = 12.5 x 3 = 37.5 minutes
Average number of daily activities = 6
37.5 x 6 = 225 minutes/3.75 hours (daily) / 1,125 minutes/ 18.75 hours (weekly) = User Journey Manual Processes.

Updating each user's status in the competition and sending the emails takes about 3 hours on the daily, and around about 15 hours on average weekly.

The manual process will usually take up 6.75 hours daily, which is completed by a single individual.

Acronyms – detail the meanings of any acronyms used above e.g. systems, clients etc.

3.6 OPERATIONAL CONSTRAINTS

- *List of all operational constraints. Examples could be working hours, system availability etc. – essentially anything that could have a bearing on how the automation can function.*

- *In terms of operational constraints, the automation functions from monday - friday, so any requests that come through during the weekend or friday afternoon, won't be handled until monday morning. The System availability is on a weekly basis, that doesn't include the weekend, due to the actual competition automation that runs from monday to friday, with friday being the day of the total results.*

3.7 DELIVERY

The project is to be completed and delivered by the 10th of July 2020.

3.8 CONTACT LIST

List of key contacts for the project, both QA Ltd and Client e.g.

RPA Consultant - James Harper

RPA Consultant - Daryl Atienza

RPA Consultant - Gareth Wilson

Consultant Project Liaison - Chris Lucas

Project Supervisor - Alberto Borghi

4 Automation Details

4.1 Automation Walkthrough

4.1.1 First robot - Kings Casino Bingo Initialization

- *The robot initialises the config if it's the first time the process is being run. The initAllApplications workflow is invoked. Within this workflow the robot reads the Kings Casino Database excel sheet. All of these activities are placed within a try catch in order to handle any exceptions that may be thrown.*
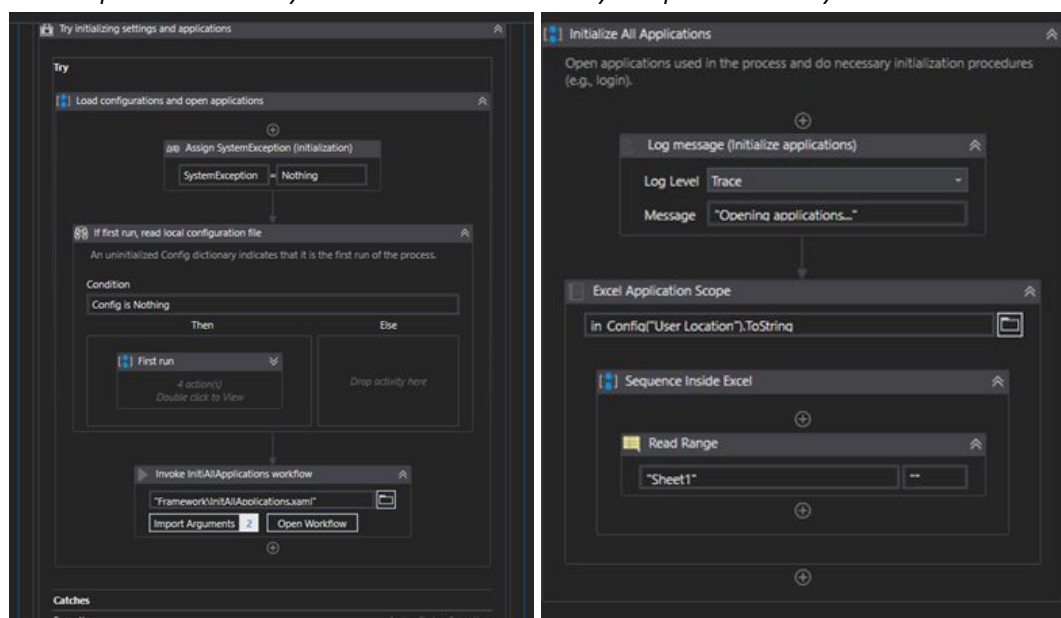
- *The robot then loads the Kings Casino Database*

- *The robot then retrieves user data from the database it accessed prior and processes the current TransactionItems. If there is nothing to process, a log message has been implemented to request that the process stops.*
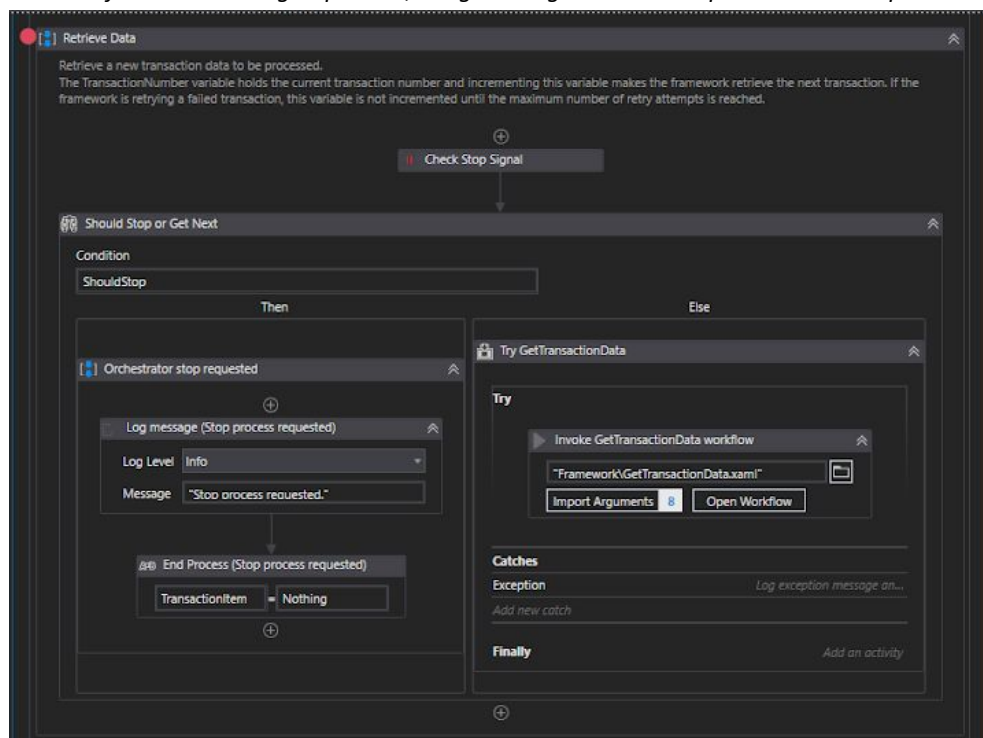
- *The Process workflow invoked assigns the Unique ID, First name, Last Name and Users email from the database. These details are then queued in Orchestrator. The robot repeats this process for each user within the database until all have been processed.*
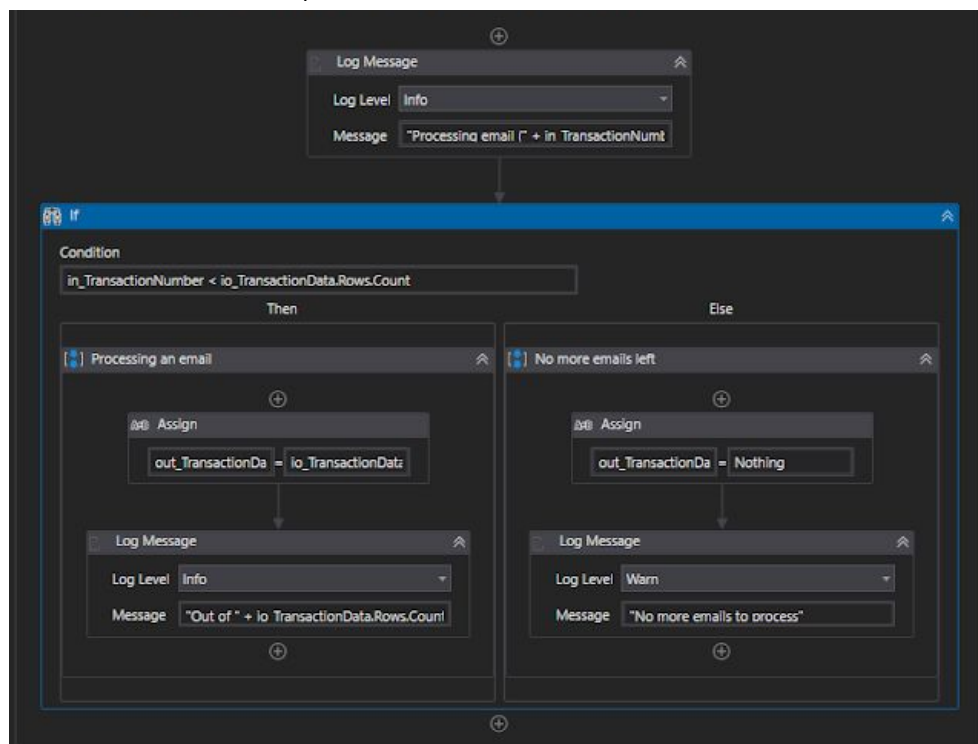
4.1.2 CRUD: Create/Register New User

- *The Robot will run through the initialisation process and read any emails within the Kings Casino inbox, specifically reading any emails with the subject of "CREATE".*

- *The Robot will recognise the email's intention is to create a new user, and will go into the "CREATE" process of the automation.*
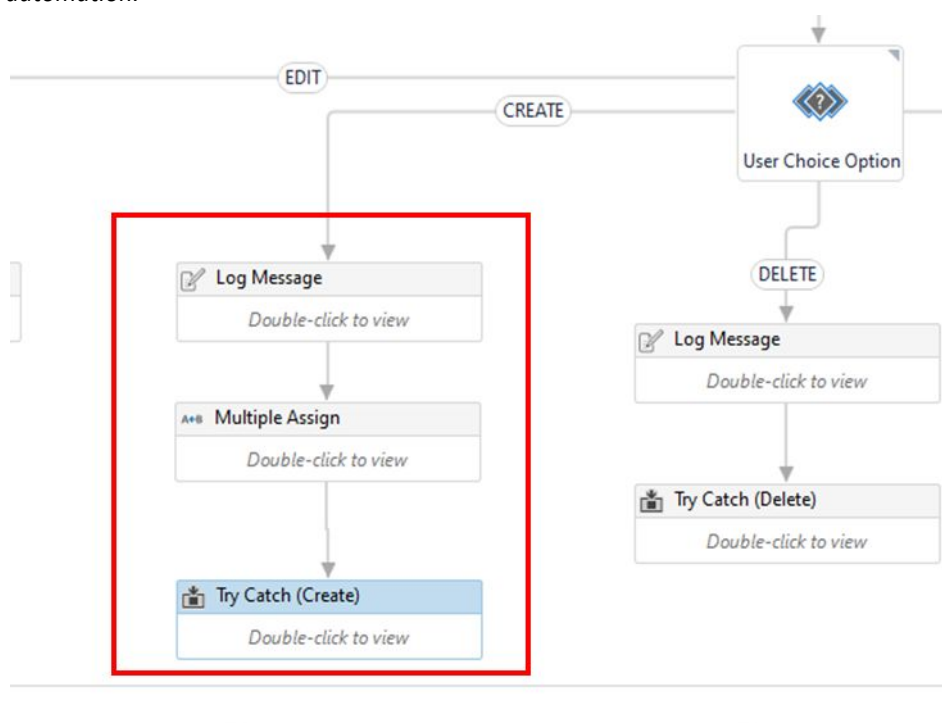
- *After Logging the initial activity, it then creates a unique ID for the user, which uses the specific timestamp the user was created.*

- *Since the email's body has already been scraped and manipulated into strings, all the robot has to do during this process is manipulate the location in which the strings are put into an array. A "build-data-table" activity is used to simulate the fields in the initial user database, which acts as a place where new user information is stored.*
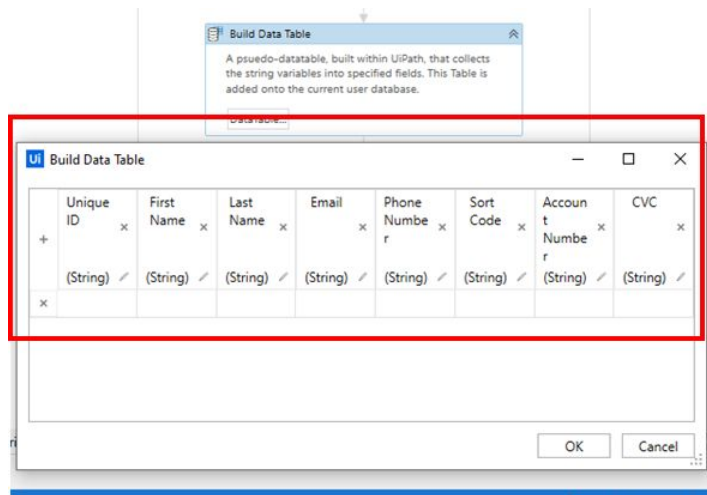
- *Once the data row is added to the "Build-Datatable", an excel application scope is used to refer to the initial database, and a "Append-Range" is used to add the new data into the user database.*
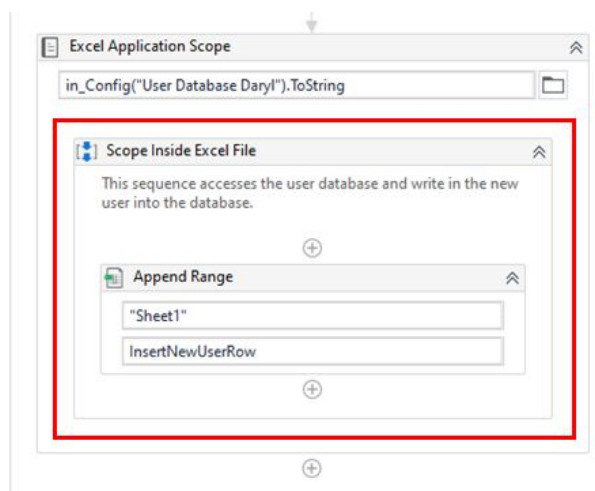

*This updates the current table, inserting the new user at the top of the table and so on.*

- *The Robot will run through the initialisation process and read any emails within the Kings Casino inbox, specifically reading any emails with the subject of "EDIT".*
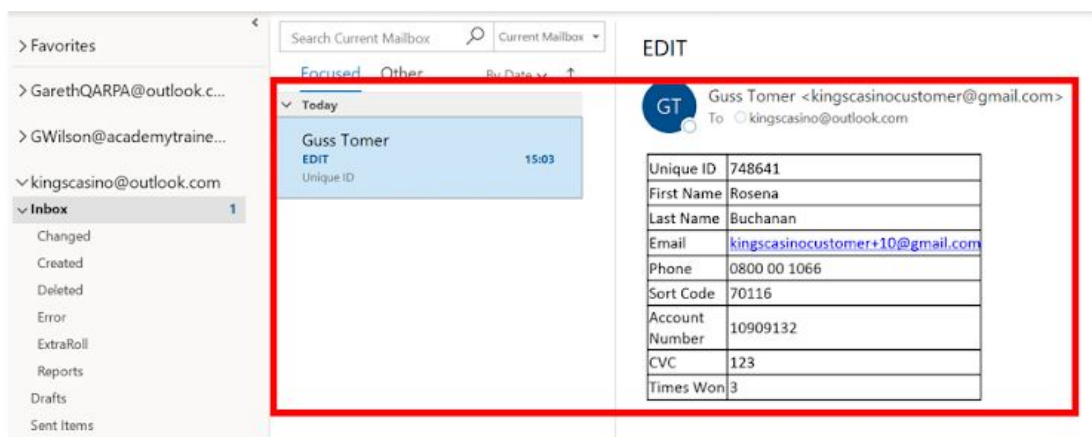

- *The Robot will acknowledge the email's intention is to update the users details, and will go into the "EDIT" process of the automation. A log message activity is in place to inform that the user has requested to edit their account.*
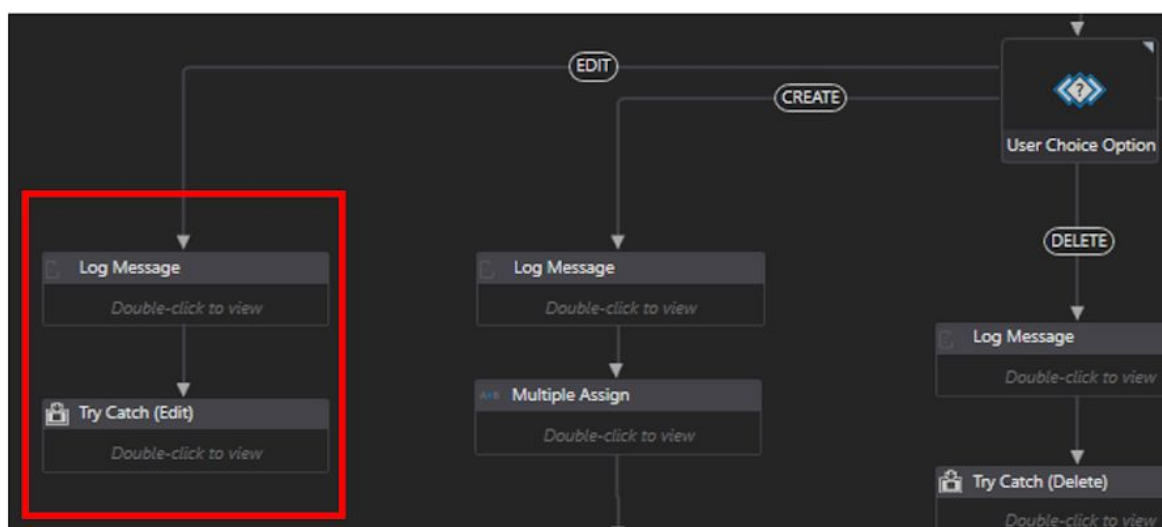
- *A try catch containing the invoked edit workflow, a log message explaining that the user who requested the change has been edited, and a move mail message activity which moves the edit email to the relevant folder within the companies email has been implemented. If the user is unable to be edited, the exception will be caught.*
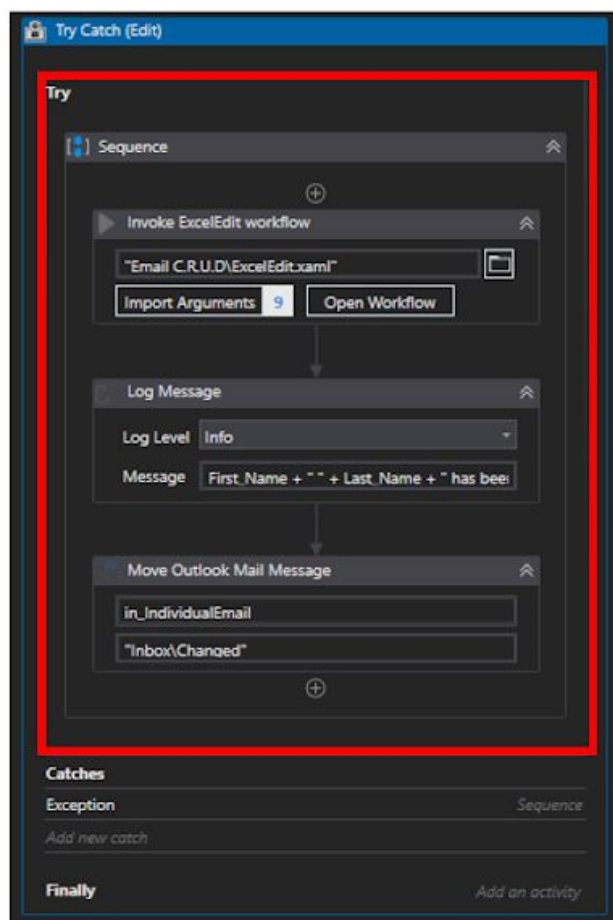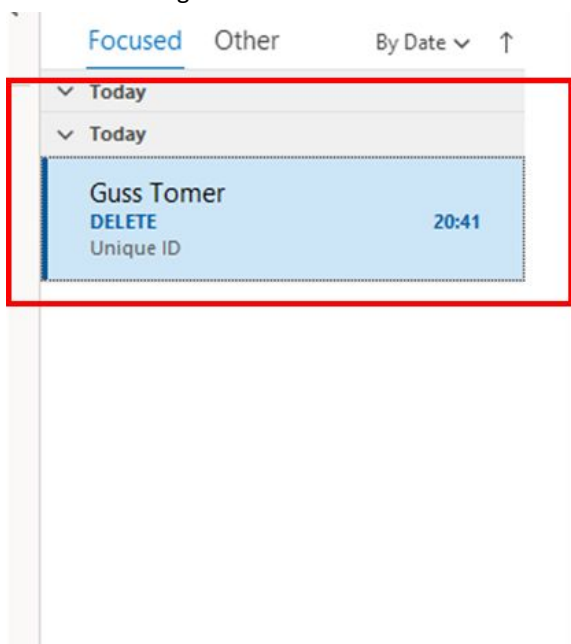
● *In the edit workflow, the robot reads the excel database. The unique ID of the user who has emailed to request the change is then looked up within the database and the relevant fields are assigned to be written into the database. This causes the users details to be rewritten so that their information is edited and the request has been completed.*
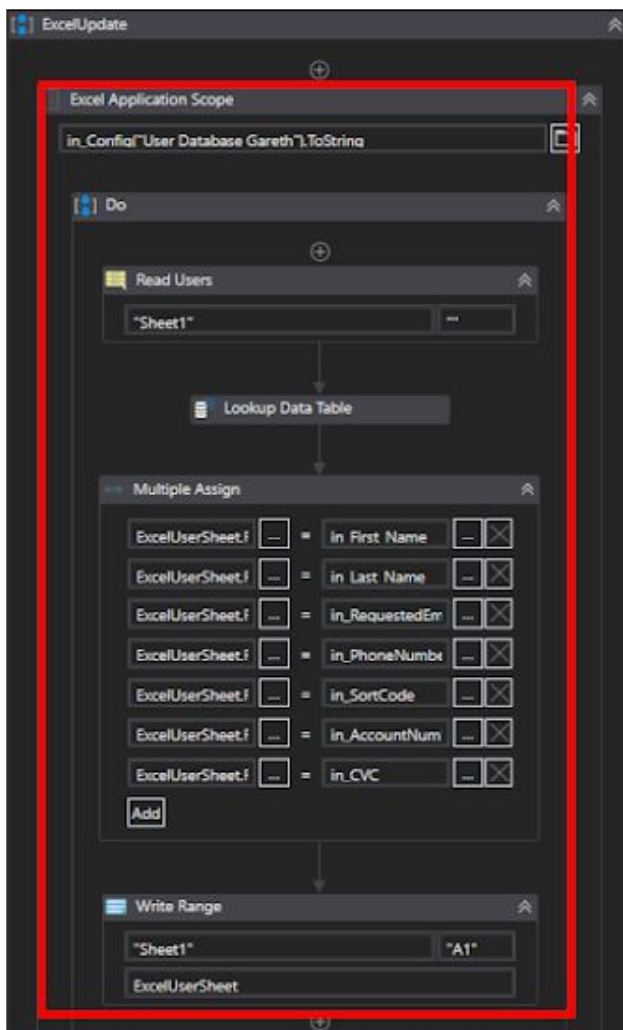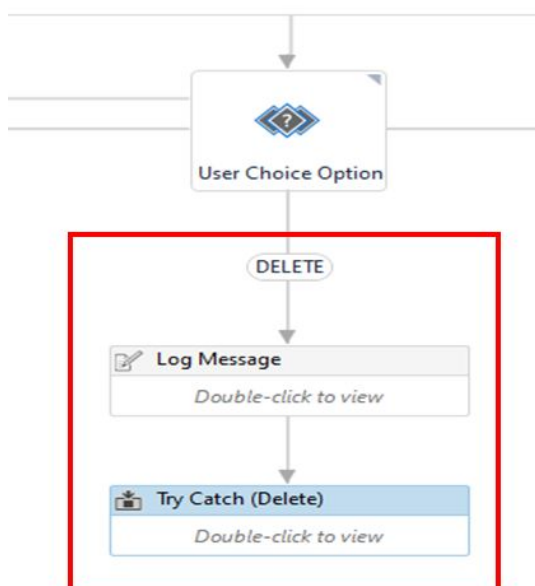
4.1.4 CRUD: Delete Existing User

- This particular crud functionality initially functions in a similar way to the CREATE and UPDATE, in a way that it accesses the Kings Casino Inbox and searches each email's subject for a keyword, which in this case, is "DELETE".
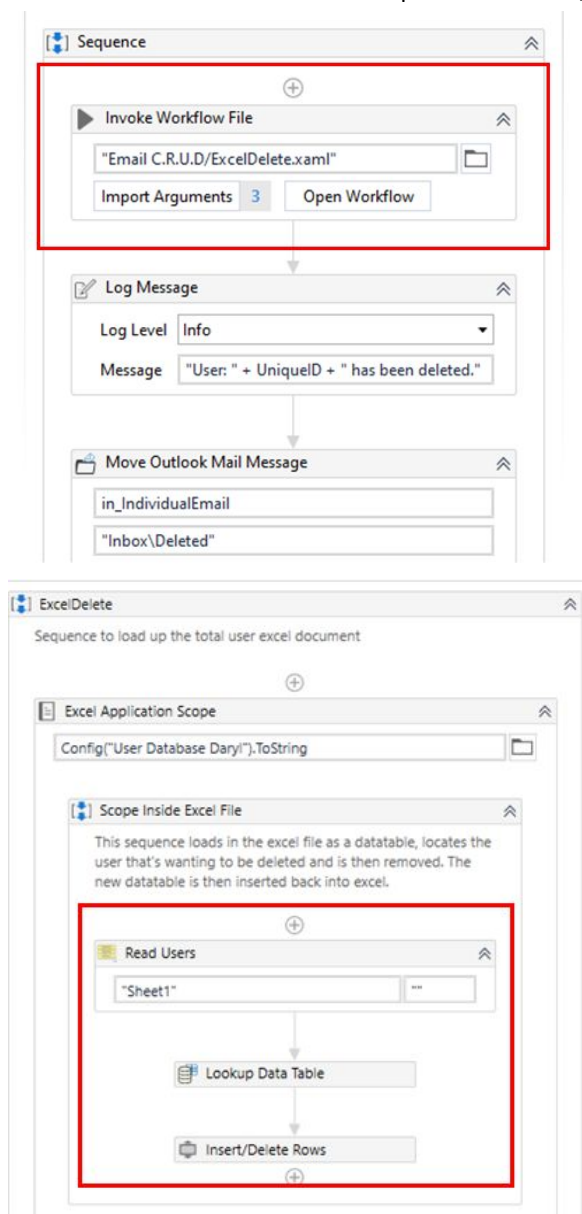
- The robot automation will enter a separate workflow, which contains the actual delete-CRUD functionality.

- Within the Excel application scope, the robot will access the designated user database, and the "look-up datatable" activity allows the robot to look for a specific string within the datatable. In this case, the robot will read the Unique ID, collected from the user's email-body, and compare it to the Unique IDs within the database, until it finds a matching Unique ID.

	A	B	C	D	E	F	G	H	I
1	Unique ID	First Name	Last Name	Email	Phone Number	Sort Code	Account Number	CVC	Times Won
2	48534	Piedad	Sizemore	kingscasinocustomer+1@gmail.com	070 3093 6767	100000	31510604	123	0
3	3483423	Tamela	Drew	kingscasinocustomer+2@gmail.com	078 4907 2140	902127	29823529	123	5
4	486343	Cristina	Schroeder	kingscasinocustomer+3@gmail.com	078 6390 8539	800551	813796	123	3
5	153485	Cody	Belanger	kingscasinocustomer+4@gmail.com	079 7440 9265	200052	75849855	123	4
6	8646	Risa	Dillon	kingscasinocustomer+5@gmail.com	070 6451 7126	185008	12098709	123	8
7	1237485	Alvaro	Pham	kingscasinocustomer+6@gmail.com	078 5886 8359	826632	20400952	123	3
8	486	Sarai	Browne	kingscasinocustomer+7@gmail.com	070 4083 4144	400515	12345674	123	9
9	8643	Ardelle	Nguyen	kingscasinocustomer+8@gmail.com	078 3307 6428	309493	1273801	123	4
10	34856341	Tisa	Walker	kingscasinocustomer+9@gmail.com	070 1216 8621	600920	67037135	123	1
11	748641	Rosena	Buchanan	kingscasinocustomer+10@gmail.com	078 8450 2713	70116	10909132	123	3

- The robot will then use the "Insert/Delete-Rows" activity to remove the row of data within the datatable. Once removed, the robot will re-write the datatable, overriding the previous database with a new and updated version, with the specified user deleted from the database.

|	A	B	C	D	E	F	G	H	I
1	Unique ID	First Name	Last Name	Email	Phone Number	Sort Code	Account Number	CVC	Times Won
2	48534	Piedad	Sizemore	kingscasinocustomer+1@gmail.com	070 3093 6767	100000	31510604	123	0
3	3483423	Tamela	Drew	kingscasinocustomer+2@gmail.com	078 4907 2140	902127	29823529	123	5
4	486343	Cristina	Schroeder	kingscasinocustomer+3@gmail.com	078 6390 8539	800551	813796	123	3
5	153485	Cody	Belanger	kingscasinocustomer+4@gmail.com	079 7440 9265	200052	75849855	123	4
6	8646	Risa	Dillon	kingscasinocustomer+5@gmail.com	070 6451 7126	185008	12098709	123	8
7	1237485	Alvaro	Pham	kingscasinocustomer+6@gmail.com	078 5886 8359	826632	20400952	123	3
8	486	Sarai	Browne	kingscasinocustomer+7@gmail.com	070 4083 4144	400515	12345674	123	9
9	8643	Ardelle	Nguyen	kingscasinocustomer+8@gmail.com	078 3307 6428	309493	1273801	123	4
10	34856341	Tisa	Walker	kingscasinocustomer+9@gmail.com	070 1216 8621	600920	67037135	123	1
11									

- The Robot will first access the transaction data, by accessing the queue in the orchestrator. The Process shown below, shows the robot accessing each queue per week day.

Get a transaction item from a specified source (e.g., Orchestrator queues, spreadsheets, databases, mailboxes or web APIs).

If there are no transaction items remaining, out_TransactionItem is set to Nothing, which leads to the End Process state.

For cases in which there is only a single transaction (i.e., a linear process), use an If activity to check whether the argument in_TransactionNumber has the value 1 (meaning it is the first and only transaction) and assign the transaction item to out_TransactionItem. For any other value of in_TransactionNumber, out_TransactionItem should be

If there are multiple transactions, use the argument in_TransactionNumber as an index to retrieve the correct transaction to be processed. If there are no more transactions left, it is necessary to set out_TransactionItem to Nothing, thus ending the process.

Kings Casino: Final List	List containing the final... 0	0	0	
Kings Casino: Friday	Takes in info from the T... 0	0	0	
Kings Casino: List Initialised	User list for the start of... 0	0	a few seconds	
Kings Casino: Thursday	Takes in data from the ... 0	0	0	
Kings Casino: Tuesday	Takes in info from the i... 0	0	a few seconds	
Kings Casino: Wednesday	Takes in data from the ... 0	10	0	

- The robot will then go through and initiate a "ball roll" with the lotto draw, which then checks if the user has an existing roll number or not. Depending on the status of the individual's roll number, the robot will initiate a new roll and generate a random number for the user, or it will generate a new number and proceed to add that number to the existing roll number.
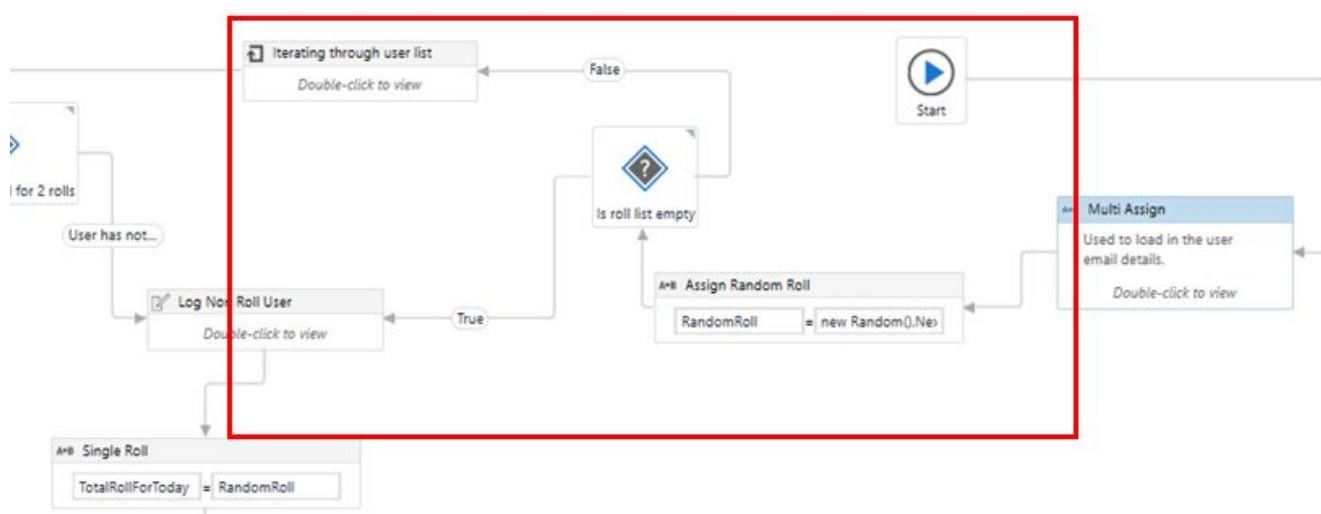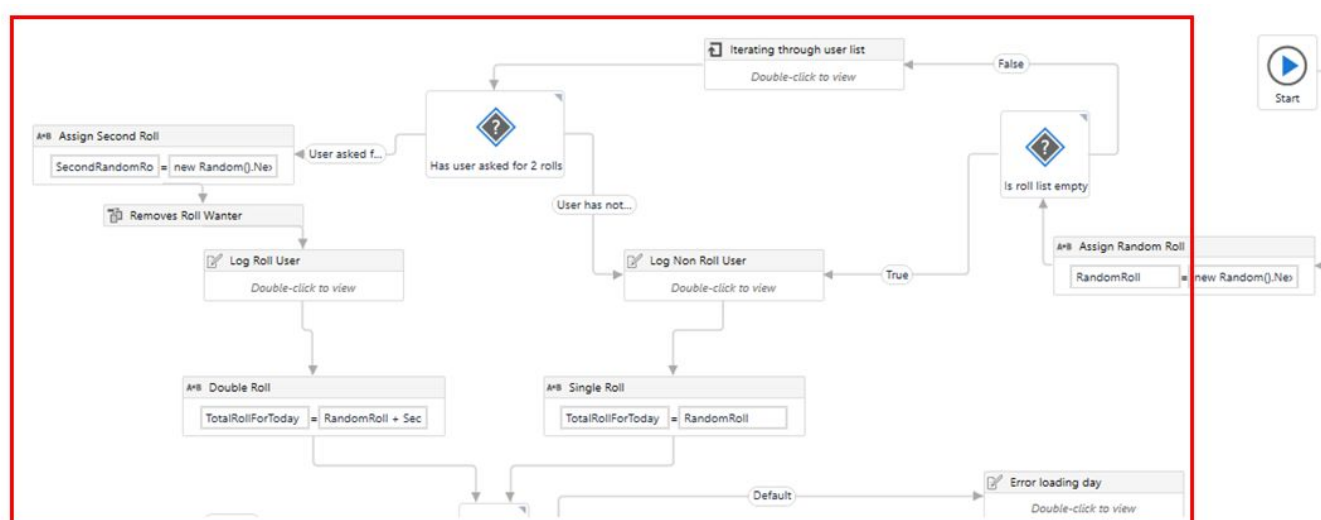
- The Robot will then go into a flow switch, which detects what day of the week it is, and applies the Roll changes to that specific day, which refers back to the queue of that day, containing all the user's information - including their new roll values.
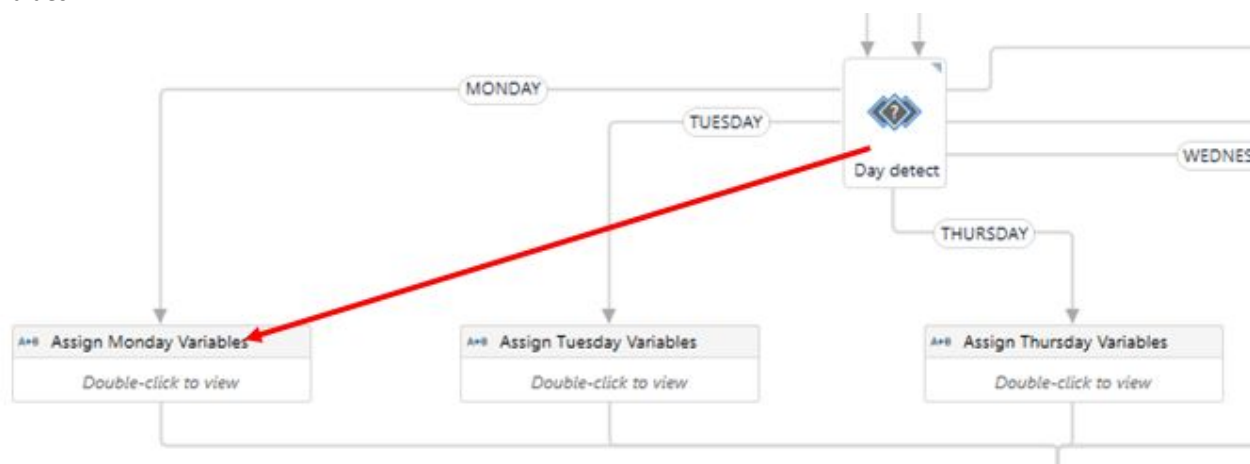

As shown in the image above, there are multiple sequences that are designated to the day of the week, which the robot follows according to what day of the week it is.

- Once the robot has finished updating the status of each user, it will then collect the details within a report, and send it as a transaction item back to the orchestrator, where the "Reports" automation is able to pull the data and compile a weekly/daily report of the activities within the lotto draw.
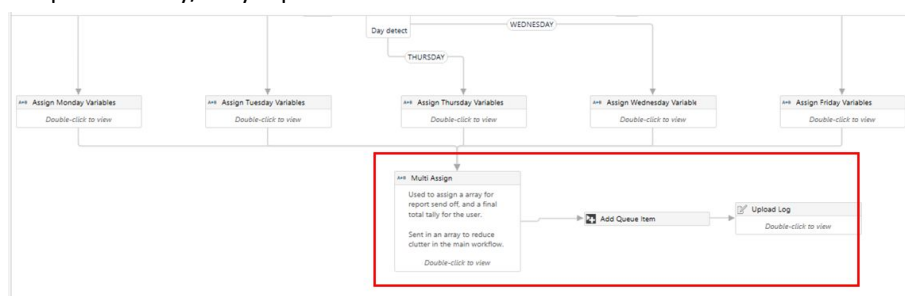
- *The robot reads the daily draw template which has been instantiated within the config file. It will log this action if it has been successful in retrieving the template. If it is unable to retrieve the template, the try catch will catch the exception and log the error.*
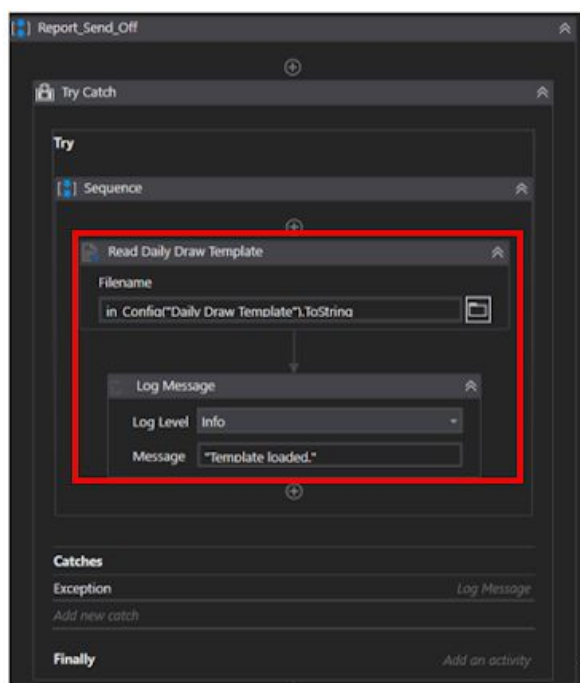

- *A data table is then built to initialise the various columns needed, this is then logged to show the data table has been built.*
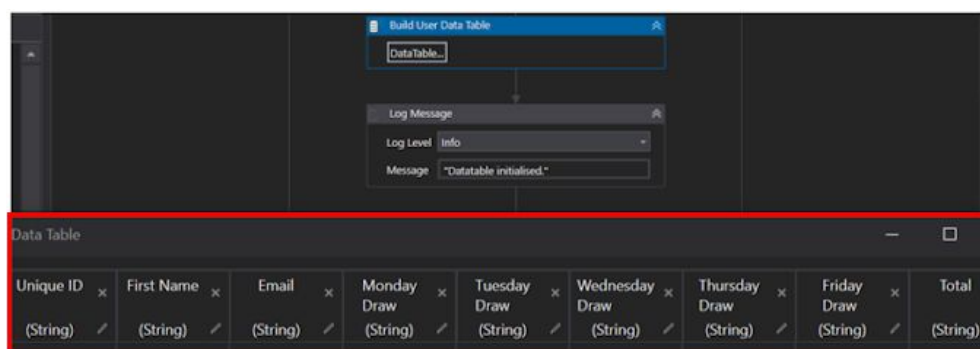
- *A for each activity then loads in each of the users details within the user reports list and sorts them into ascending order.*
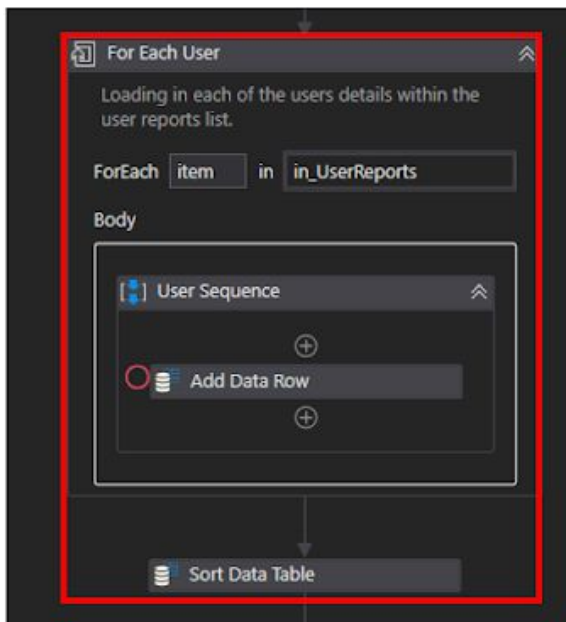
- *A for each then assigns the rows containing the user details to local variables. These variables are then formatted into their allocated positions within the daily draw template.*
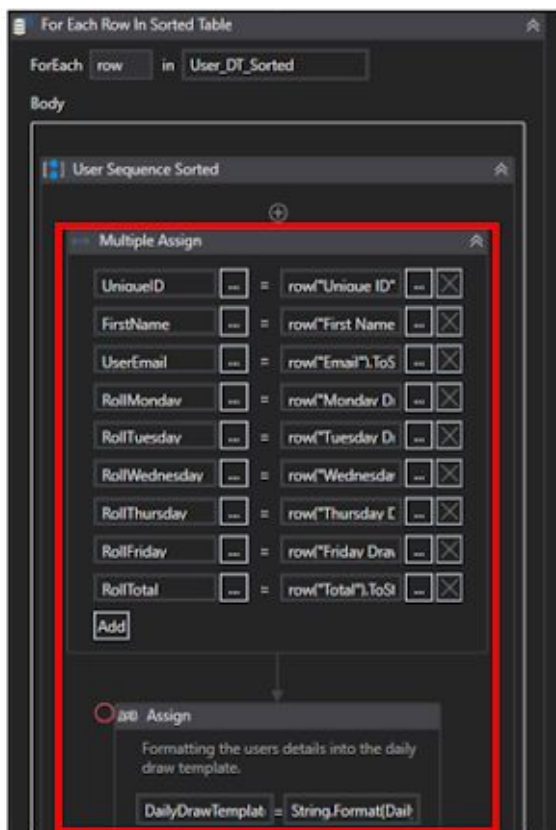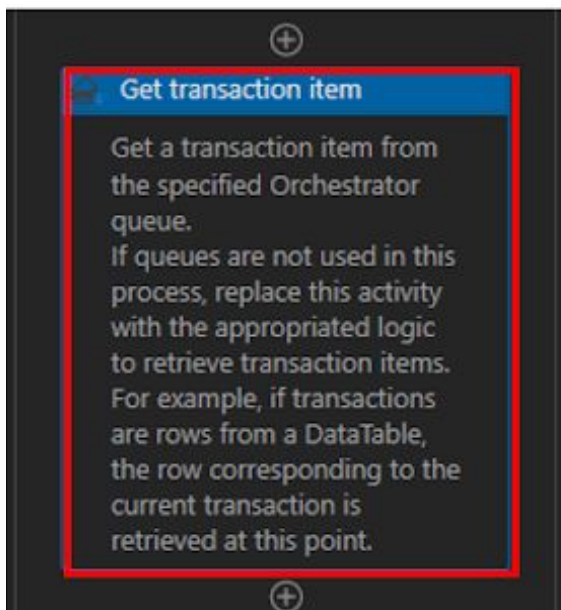
- *Two emails are then sent, one to each of the users to show them their daily draw results. The other is sent to Kings Casino, allowing them to have a copy as a report.*
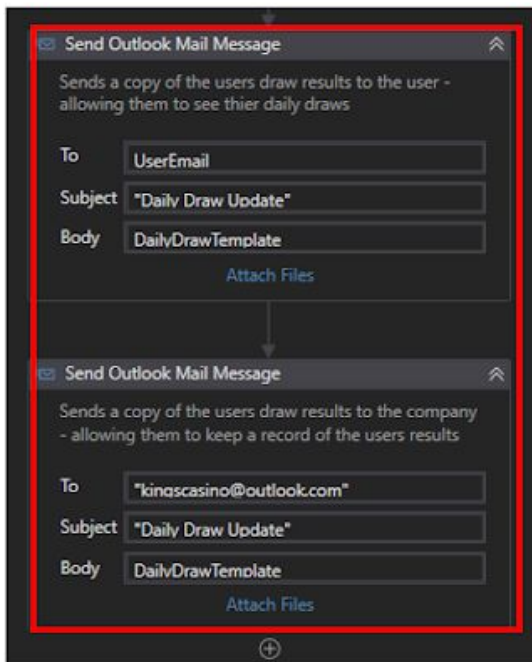
- *The process accesses an orchestrator queue which transfers the data held within that queue to uipath. A variable is then assigned to refer to this data.*

- *A multiple assign is used to load the users information into individual variables. It also retrieves the current time and converts it to a clean, readable format, readying it for future files. a log file is also used to display the current time and where the report will be saved into*
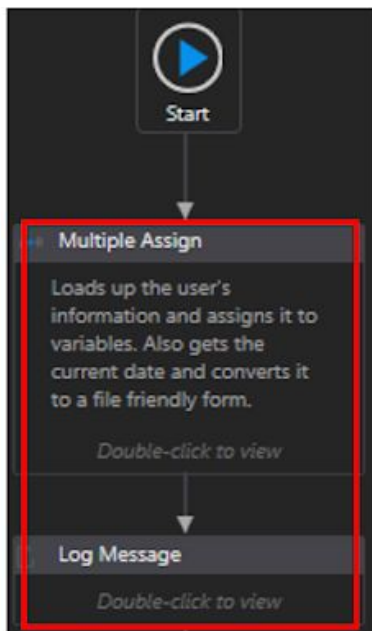

- *A data table is then built to provide the relevant columns for the users details, which is ready to be exported to an excel sheet. The users details are then added using the dedicated variables, previously created.*
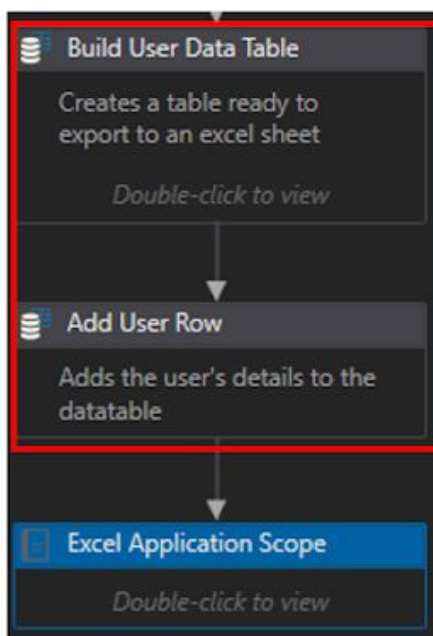
- *The robot then reads the excel sheet and outputs the data table. An if statement is then used to write the data table if it's the first time it's being run. If it isn't, then the data table will be appended so that data is not overridden.*
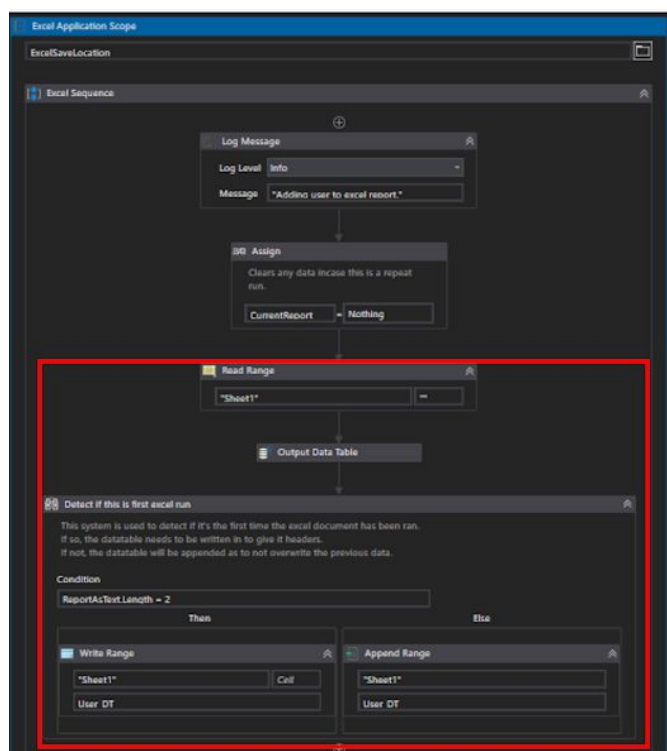

- *The templates dedicated to the winning and losing users are then read via the config file.*
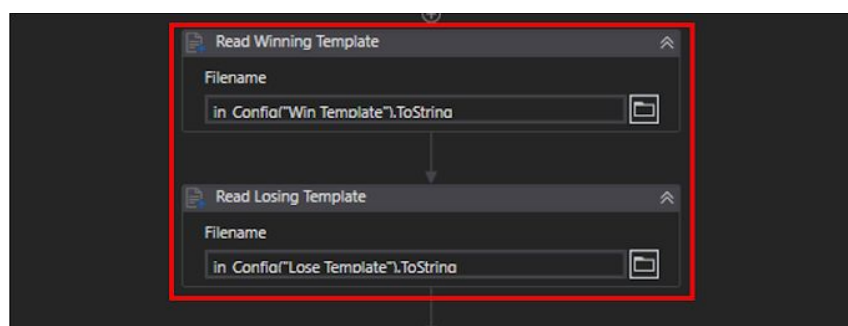
- *The excel sheet is then read into the workflow and sorted into descending order. The name of the excel document is set as a variable of the date of that day as a string, this is to ensure a log of all users are kept on a weekly basis.*
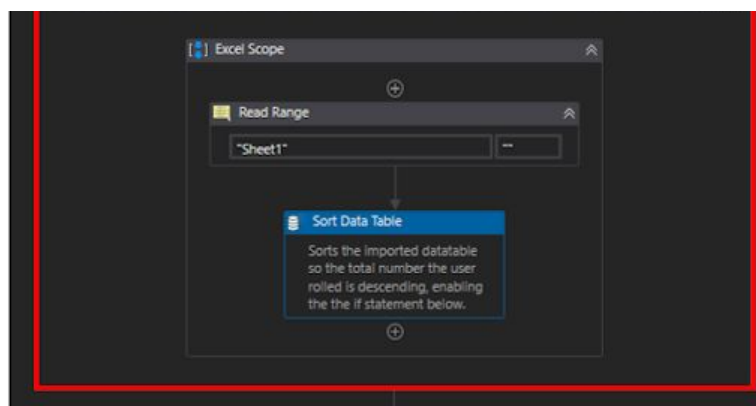
- *A for loop then iterates through a list of users, assigning their details to the relevant variables*
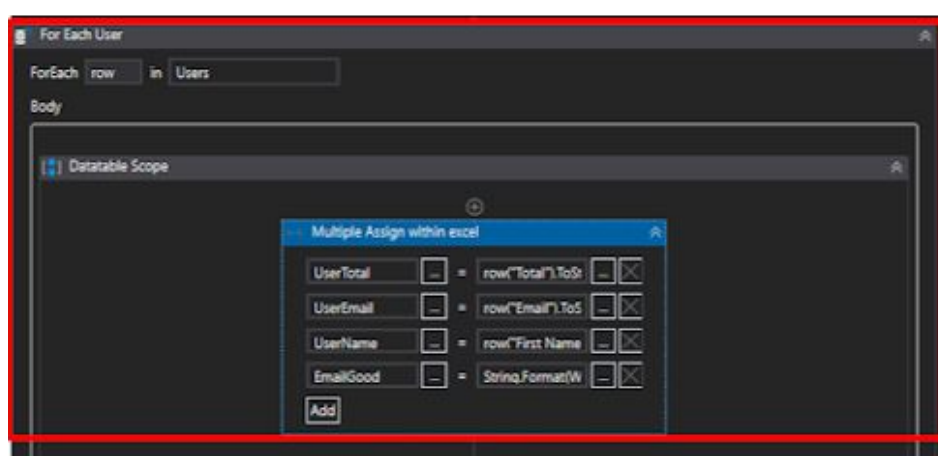
- *An if statement then differentiates the user in first place and the users who aren't in first. If the user is winning, the robot sends the user an email of the winning template to inform them of their position and their details. If the user isn't in first, they will be emailed the losing template and their details from that week.*
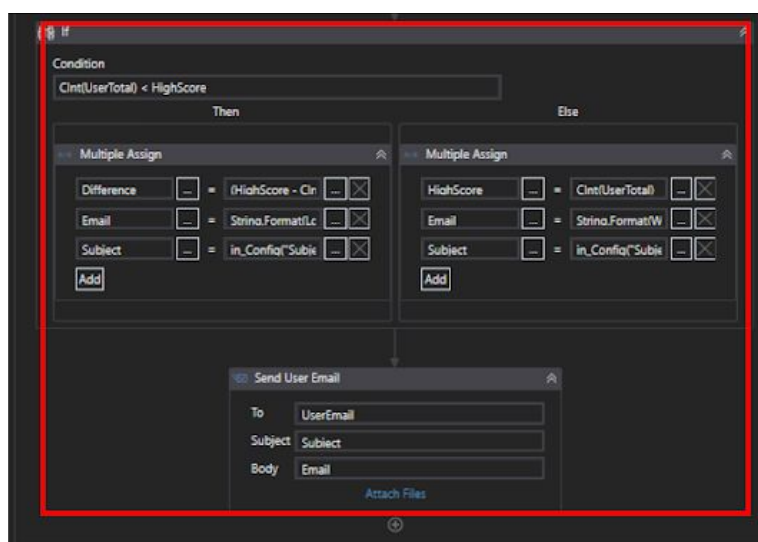
4.2 Reporting

4.2.1 Business Exceptions

Exception	Solution
Email Tables aren't read in correctly/Users don't send data in correctly.	*Predefined tables are requested. All other entries are ignored.*

4.2.2 System Exceptions

Exception	Solution
Can't find the correct location for templates, excel documents etc...	*All hard locations are defined in a config document for each process to load before they start retrieving documents, writing reports or starting processes.*
Can't find user email locations or company credentials	*These are hardcoded into the initiation stages, and then imported to where they're needed in the documents. While it's not a full solution, it provides a very easy fix if they go wrong.*

A performance report will be emailed to *Kings Casino* each time the process runs (showing worked cases, exceptions and a cumulative processing log)

4.2.3 Triggers

The robot is set on a schedule within the orchestrator to run on the monday, and finish on friday. The triggers will involve the company (Kings Casino) receiving a specific email, with the template that is required to collect the information. If the emails contain one of the specified topics as a subject, i.e; CREATE; DELETE etc. then it triggers the specific automation process, intended for that subject matter.