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Title of Project: roBOTically efficient

GitHub

D.7 Verification & Validation – Due: 2018-04-20

CS386 – Software Engineering – Spring 2018

Dr. Marco Gerosa

1. Description

Our bot, roBOTically efficient, revolves around an Old School Runescape game client a GUI created through Koda to generate a GUI which allows a user to navigate through the list of script options. The scripts are what do all the work for the user, that the user doesn't want to do or doesn't have time to do, these were created by using AutoIt which is a script editor and runner. It also is easily packaged into an executable which makes it simple to distribute. Currently we have only a woodcutting bot, and have been testing for weeks and have not been banned and gained many levels within the woodcutting skill. We plan on creating a fishing bot shortly after we turn in this deliverable.

Once the user selects whatever script they would like, it searches for a pixel color and if it finds it, it will click it, chop the tree, drop the logs, and search for the pixel color again, repeating the process once again.

Disclaimer: Our tests may appear a bit weird but since we are creating the bots using the scripts, it is very much just a user verifying that a functionality works by actually watching it work.

GitHub Repository: https://github.com/J1411/NAU_CS386

Trello Planning Board: https://trello.com/b/4hvAsbj3/naucs386opdingo

2. Verification (Testing)

For Release 2, we created numerous tests to prove that our release satisfied our requirements and features list. We have provided examples of a unit test, an integration test, and an acceptance test. Our unit tests are shown through the YouTube link provided, all of them are time stamped.

The proof of our tests working is the following YouTube video:

General Link: https://youtu.be/hRgPGwpDkIU

For the exact test, click on the link following the unit test name.

      a. Unit Tests
            i. Color detection

        1. We tested if the bot would go to a certain color in the game
        2. Link: https://youtu.be/hRgPGwpDkIU?t=1m59s
   ii. Mouse movement to object -
        1. Seeing if the bot could move the cursor to the right object based on color detection.
        2. Link: https://youtu.be/hRgPGwpDkIU?t=1m59s
   iii. Mouse movement to static position
        1. Seeing if the bot could move the cursor to a fixed place on the screen, specifically the inventory portion of the Runescape client.
        2. Link: https://youtu.be/hRgPGwpDkIU?t=2m39s
   iv. Cycle time
        1. Could the bot script wait the proper amount of time using the function Sleep().
        2. Link: https://youtu.be/hRgPGwpDkIU?t=1m59s
   v. Condition checks
        1. Using to control the bot script based on logical conditions such as "if there is a set of logs in the inventory, then drop them." Uses color detection, mouse movements, and click actions.
        2. Link: https://youtu.be/hRgPGwpDkIU?t=2m39s
   vi. GUI
        1. Button event
            a. Can we detect the button event of a user clicking on a button
            b. Link: https://youtu.be/hRgPGwpDkIU?t=1m58s
        2. Keyboard interrupt
            a. Can we detect a keyboard stroke for our program?
            b. Link: https://youtu.be/hRgPGwpDkIU?t=1m59s

Used to test our objects. Make sure that outcomes are what they are supposed to be. Must include GitHub links and a picture/timestamp from a video of it working.

  b. Integration Tests
    i. Start application and exit button
        1. Link: https://youtu.be/hRgPGwpDkIU?t=3m21s
    ii. Start application and interrupt/cancel bot
        1. Link: https://youtu.be/hRgPGwpDkIU?t=3m30s
    iii. Start application, start bot, run for a cycle, and exit via keyboard

        1. Link: https://youtu.be/hRgPGwpDkIU?t=3m40s
- iv. Start application, start bot, run for a cycle, and exit via GUI
        1. Link: https://youtu.be/hRgPGwpDkIU?t=4m2s

Integration test showing that objects communicating with each other can communicate and work together. Give GitHub link and screenshot/timestamp from video of it working.

c. Acceptance Tests

Since our code is highly dependent on the user's screen and mouse cursor, especially since the system requires the Runescape client in the foreground on a Windows platform, our acceptance testing is done manually.

For this section, we operated our program in its current state (since Deliverable 4, Release 1) and took notes on the aspects of the code and how the program works.

- Code
  - The program AutoIt is NOT object oriented, but we can do a better job of segmenting the code into portions. This can be accomplished inside of the same file (comment blocks and regions) and/or separating the code into individual files.
  - We need to do a better job of commenting the code. For the most part, the code is self explanatory, however, it is an open-source repository. Communication is key, whether it is for us or random people on GitHub.
- Program
  - Experience is alright, but the user does not know how to set up their player. For example, if I am doing the woodcutting bot with willows, then I, the user, might need help finding a location with willows, moving into the right spot, and angling the camera.
  - The bot doesn't dump the whole inventory, only the first two slots, making it less efficient overall. Still effective, but need to update the codebase.
  - The bot sometimes prefers to run in one direction. For example, if there are numerous trees in a row, it may run down the row rather than sticking to one or two trees.
  - There is no data during the bot. This isn't really a problem, but if we want / can, perhaps we should consider a GUI for providing information to the user during botting.

3. Validation (User Evaluation)

Our questions are open-ended and were asked **three** people about our bot. This is validation that what we are building is matching the requirements and features people want.

User 1 - Payton Massahos - 04/14/18:

- Have you used other botting software and, if so, how do you feel about these other softwares compared to ours?
    - I have no really used any botting software for any of the game I have played, but I have used some cheat codes on Xbox games and see the benefit your system could have for users who don't have a lot of time.
- How would you describe the experience?
    - Well, you just gave me an account and the executables and I just gave it a test and it seemed like everything worked, I let it run for like thirty minutes and didn't see any problems and it functioned properly, so overall it was nice!
- How do you feel about the main menu for selecting bots?
    - It is simplistic and gets the job done, I just clicked the button and it started working!
- Did you know how and where to set up your bot?
    - Well, I knew where to set it up because you told me where to go, I don't know if I would of known where to go if you didn't tell me where, I also don't play a ton of Runescape.
- What is your favorite skill to use a bot? Why?
    - I enjoyed using the woodcutting bot as it was simple and to the point, also it is the only one you guys have as of now which is fine.

User 2 - Hayes Massahos - 04/14/18:

- Have you used other botting software and, if so, how do you feel about these other softwares compared to ours?
    - I have used other botting software related to Runescape and I had great success when using it, though I do know that the bots I used back then are now no longer existent. Compared to yours, I thought your bot was quite simplistic but got the job done.
- How would you describe the experience?
    - It was easy to use and since you kind of helped guide me a bit I found it very easy to use.
- How do you feel about the main menu for selecting bots?

- I thought it made it easy to find what bot I wanted to utilize, overall solid menu for selecting bots.
- Did you know how and where to set up your bot?
    - I was a bit confused on where to start it up but I just ended up standing next to a tree and starting up the bot and it worked.
- What is your favorite skill to use a bot? Why?
    - I don't really have a favorite skill to use a bot, I just use a bot for whatever skill I don't really want to use, which yours would work for woodcutting decently enough.

User 3 - Giulia Paulet - 04/14/18:

- Have you used other botting software and, if so, how do you feel about these other softwares compared to ours?
    - I have not really used any bots for Runescape, though I do play the game from time to time. So when I used your bot I found it was pretty easy to use and just got the job done, nothing really special apart from that.
- How would you describe the experience?
    - Overall the experience of utilizing the bot was awesome.
- How do you feel about the main menu for selecting bots?
    - It was easy and simplistic.
- Did you know how and where to set up your bot?
    - I was told where to go, by a developer.
- What is your favorite skill to use a bot? Why?
    - Anything that makes me money in game.

Conclusions:

We concluded from these user evaluations, that we really need to provide instructions on where the user needs to go before they activate the bot. That is something we will implement during Release 2. We also will attempt to keep it simplistic but also give it a little bit of creative flavor. We also will be adding at least one more bot to the system before we turn in Release 2 which should be quite fun and will allow for our users to have increased options.

4. Group Participation
Tanner Massahos – Wrote up the description and delegated sections to all the other members, also assisted in writing up the unit tests.(25%)

Joseph Remy – Created the document, went into great detail on everything that was required within all sections so there was little need for further clarification. Proofread the document and created the video for the testing sections.(18.77%)

Julian Bell – Verified the unit tests were valid and complete, also did the testing and made sure the video was quality and understandable. Also proofread the document.(18.765%)

Tyler Boice – Lead the charge when it came to the Integration and Acceptance tests, made sure everything was correction within the Verification section.(18.75%)

Chase Mosteller – Helped wherever needed, especially in writing up the user evaluation section. (18.715%)