**ICS 4UI Graphics Report**

Here is your opportunity to dabble with the graphic capabilities of Java – and get marks for it.

**Object Programming:**

Much of this major programming project will focus around your ability to embrace object-oriented programming concepts that will be introduced throughout the term. All graphic programming entails lots of object-oriented concepts.

The multiple submission process will give us a chance to make sure your experience is as constructive as possible. With each submission, I will write down how I want you to make modifications. With each subsequent submission, you will re-submit the marked reports that I returned to you. You must do this so that I can check how well you made the changes I suggested/insisted.

**Research and referencing your sources:**

Most programming is learning from other’s examples. I would expect most of you to be looking online for examples of how to approach your solutions. I also believe that copy/paste is sometimes more effective than re-typing what you see on the web. Just like in a history essay, you provide your teacher with sources of your quotations and numeric support, I will ask for the same. **When you embed any pieces of code from someone else, please comment the web site that helped you.** You will also have a list of sources on one page at the end of your project.

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| --- | --- | --- |
| Weight | Description | Due Date |
| 30 | Initial Goals and planned steps | Wednesday, Mar 18 |
| 70 | Final Program and report | Friday, Mar 28 |
| 100 | TOTAL |  |

You will be required to keep all your work in one folder. When it is handed in, I will be making sure your have followed through from your proposal all the way to your presentation.

**Initial Goals and planned steps:**

You will address explicitly how the user will input information, the possible choices presented to the user, and the forms of output for the user.

You will also create a “**Planned Steps Report**”, which will list all the steps that you will go through on your way to a complete project. This report will focus on incremental features of to project, not specific time lines.

Each new “step” should be a new project. In the programming world, we call that “version control”. When something is working, and then you try to add features that screw everything up, it is nice to go back to the version that was stable.

**Expectations:**

With your Initial Goals sheet, I will make “suggestions” as to where you should go from there. I expect you to follow those “suggestions”, or give me strong rationale as to why you disagree, or show me code as to why you could not make my suggestions work. In a world of lots of copied code, modifying expectations is a great check on plagiarism. I expect you to copy some code from others, and incorporate it into your work – *with proper sourcing*. I also expect you to make modifications in accordance to my “suggestions” as a further way of showing you understand and can modify other’s code.

**Project Journal**

You will also be keeping a programming journal of the project. In this journal you will be entering your development of the program specifications, as well as frustrations with the process. You will be sharing any new programming techniques that you acquired while solving problems within your project. Some students try to “retrofit” their journal, spending the last day filling in a bunch of nonsense for me. Don’t. Anytime we have a “discussion” about the program specs, or when your program crashes for x days in a row – journalize it. When you reach a new level of your program that you are exceptionally proud of – journalize it.

# Final Program and Report

This will be your progress report of how your program has developed. Here, you will summarize your major breakthroughs, major challenges, and modified plans. Within one folder, you will be **submitting your entire program folder** with your summary report, so that I can run your program and check your code. **You will also be submitting your journal as well.**

I will be marking your **entire package**. Your entire package should be organised in such a way that I can easily check the development from your original specifications to your final product. This is to help you, as a student just in case your presentation does not go well. I will be able to see how much work you did in order to create the program and presentation. You will electronically hand in EVERYTHING, including all of your source code and journal. When I try to run your program from the source code, and the compiler complains about missing files, I get very sad – and you lose marks.

INITIAL GOALS

NAME: Gaurab Aryal

LIST OF GENERIC GRAPHIC CONCEPTS YOU WISH TO ACCOMPLISH:

As me and Sam work towards our final programming project, one of the most critical challenge we will come across is collision detection and image movement. In this graphics project I will be working on a functional collision detection method and moving images across the screen. Moreover, I will be working on a menu screen as well.

FUNCTIONAL ASPECTS:

🡪There will be three ‘menu’ options placed in the south region of the frame.

🡪The central region of the frame will be refreshed according to the option selected by the end user. If the end user selects “Play” option, the ‘menu’ will disappear and a ‘Menu’ button will be placed on the top right corner.

🡪A spaceship is populated at the far left centre of the screen. It will be able to move up and down to dodge asteroids.

🡪There will be a space background that will remain constant throughout the game (no animation). Alongside, there will be asteroids moving towards the spaceship from the east region.

ARCHICTECTURUAL ASPECTS:

🡪A main panel is initialized at the outset. The panel will be set as a borderlayout.

🡪In the south region of the main panel there will be three menu buttons placed each with its own actionlistener

🡪In the central region, there will be another panel set to borderlayout. This panel will contain an image of some sort until one of the menu buttons is pressed. This panel will then be refreshed according to the option selected.

🡪The spaceship in the game will be controlled by the ‘up’ and ‘down’ arrow keys.

🡪A custom made image of the spaceship, space background, as well as asteroids will be buffered in my game.

**Planned Steps**

|  |
| --- |
| **New incremental feature of each step** |
| **A frame loaded with the main panel and option buttons** |
| **An image populated on the central region of the main panel** |
| **‘How to play’ option** |
| **‘Credits’ option** |
| **Work on the Spaceship, space background, and asteroid images** |
| **Set up the gameplay panel and buffer/load the images** |
| **Make the spaceship move up and down when the ‘up’ and ‘down’ keys are pressed** |
| **Load the space background** |
| **Make multiple asteroids move from east to west (towards the spaceship)** |
| **Work on the collision detection code (spaceship and asteroids)** |
| **Decrement health by a certain magnitude each time the spaceship collides with an asteroid** |
| **Finally, work on the final screen displayed after the spaceship’s health reaches 0** |