RATION-ALIZE

PROJECT 1: AESHETIC COMPUTING – SPRING 2012

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SUBMITTED BY –

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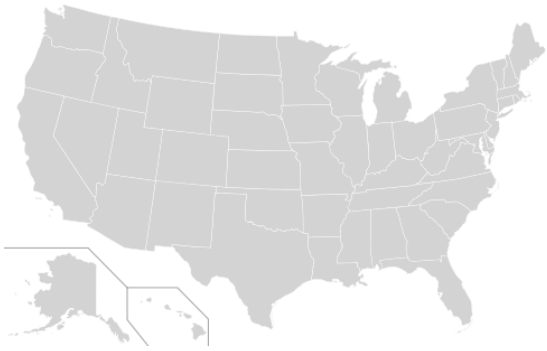
Introduction

Ration-alize is a single player game intended to provide the player an insight into the monetary intricacies involved in the earning and spending money. The base for the project is the deficit that states have between their earning and spending. Every state collects revenues from taxes which contribute to its earnings and each spends money for administering the state. The issue is that each state does not spend as much as it gets. Most spend more than they get.

Assume State X earns $A and spends $B. This means that X has a deficit of $(B-A). We intend to represent this information in a geo-referenced manner. This game will represent the 10 states on a map which spend the most. Over a period of time each will keep extracting funds from their reserve in order to counter the deficit. The role of the player in this game is to pull reserves from the Federal Reserve and distribute it to the states.

Implementation



The implementation was done using Processing. A Scalable Vector Graphics (.svg) file of the United States obtained from Wikipedia.org was loaded in the project. A State wise list of revenues from taxes and spending data was obtained in a comma separated value format from http://www.usgovernmentspending.com/ which was parsed into the application memory. At the beginning of the application, a raster scan of all the pixels in the window is done in order to identify each state. Once obtained, each pixel within a state's boundary is identifiable as belonging to that state. Thus a mouse over on any state will give that state's name.

Once started, the states that spend the most are colored in order to identify them. Also, the fund available in their reserve is displayed on the right in the form of stacks of notes, which again is activated by mouse over. The Federal Reserve is displayed on the far right hand side of the application window and is represented as a stack of gold coins which will allow the user to easily distinguish between the two monetary representations. Both the stacks are dynamic. The user can increase the money that is available to a state

but he cannot increase the Federal Reserve. The images of the gold coin and the stack of dollars were obtained from a Google image search for them. They are repeatedly placed on top of each other in a stack representation which is seen below in Fig.1

Representation of Federal Reserve

Representation of State's Reserve

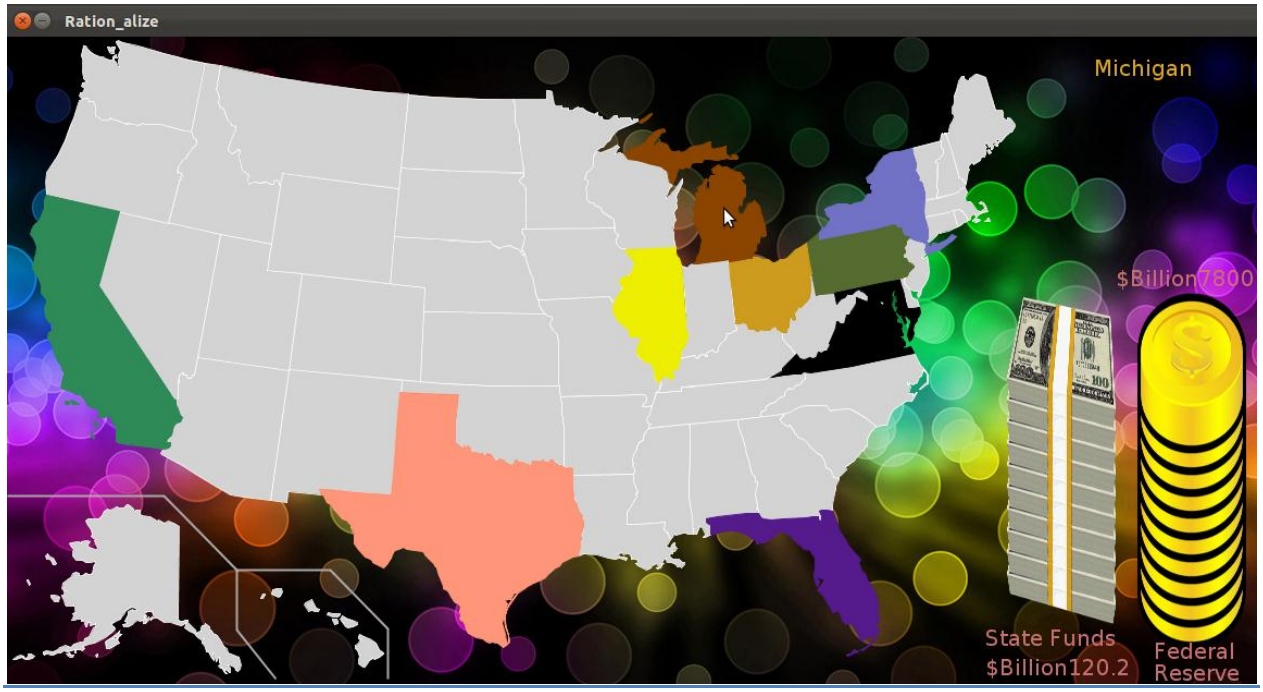
Fig.1

When the user extracts funds from the Federal Reserve, the coins in the stack keep decreasing. Each stack has associated with it the exact value of the money in text on the application window so that the user knows exactly how much money is left.

During the execution, each state will be earning some money and spending some money, thus at every predefined number of executions, which represent a year, the amount equal to the deficit of the state is subtracted from its reserves. This keeps happening until the reserves become critically low, at which point the state starts blinking in order to convey to the user that it is going bankrupt. Thus the whole idea is to save the states from bankruptcy as far as possible (because we are assuming that the Federal Reserve is limited.)

The extraction from the Federal Reserve is what lends the project its name – 'Ration-alize'. The user has to ration the money in the Federal Reserve among the states. It is simple step – a mouse button. The user needs to move the mouse to the state to which he intends to provide funds and click the mouse. The result of this action is visible on the state's reserves and the Federal reserves. The money stack will increase and the Gold stack will decrease.

A snapshot during the execution of Ration-alize can be seen below.



We can see that the money left in the Federal Reserve is $Billion 7800 and the state of Michigan has $Billion 120.2. Also, the states of Maryland and Virginia are bankrupt and are thus black in color.

There are random events during the execution which simulate a state being faced with an extra financial burden such as natural calamities, financial bailouts etc. This naturally means that the state will have to fish into its coffers and get money out, and as a result already taxing the state's deficit ridden economy. There might be cases when the user is helpless and before anything can be done, the calamity clears the state of its money and it goes bankrupt.

A counter is displayed when the game is started and the counter value at the end of the game is the player's score.

Target Audience

The budget deficit of United States is a pressing issue in the backdrop of the Republican primaries and the upcoming presidential elections. The project is targeted at Americans of all age groups, towards those who have an interest in gaming and those who have no prior gaming experience. The user has to start the game and make sure that no state goes bankrupt. For reasons of simplicity we restricted this application to the 10 states that spend the most.

What the User Learns

- As mentioned before, the goal of the project is to build an interactive game through which the user can learn how financially constrained the states are.

- A static representation like a map or a graph does not let the user visualize the scale of federal spending on the states. By letting the user decide which states gets money at the appropriate time, he/she realizes the important tasks that the government has in deciding budgets and regulating money flow.

- Some states like California have a big economy and needs a lot of money to function, but the federal government cannot allow others states, say Vermont go bankrupt.

- By using actual data we have tried to showcase which states are the big money grabbers – obviously the ones with the largest deficit.

- The user understands the current fiscal scenario of the country. An end user, if presented with charts, tables or pie diagrams about the fiscal details will be put off by the figures and will not understand the implications. Instead, if presented with our game, which requires involvement, the user will certainly learn and understand the federal budget for the states.

- Our intention is that the user will be motivated to enquire about the spending on federal programs like Medicare/Medicaid, social security and education and can understand the fiscal situation of the state and the country, which satisfies the goals of aesthetic computing.

Observations

We observed with this set of data that New York has a very low deficit and Illinois has 0 deficit, meaning both spend almost as much as they earn. Thus in our application New York will start after a very long time (provided that the Federal Reserve still has money left till then) and Illinois will never blink.

Shortcomings:

- The Game does not allow the user to tinker with the Federal Reserve.
- There is a possibility that after a few runs, the user get to know the sequence in which to keep feeding the states. To minimize this, we have included the random financial crisis event.
- Since we have used the data provided for only one year, the deficit shown is repetitive. In a real world scenario, the deficit varies because, the earnings and spending of each state changes every year.

Demonstration

A short video of our project, giving an explanation and a demonstration of the game can be found at:

http://www.youtube.com/watch?v=c3N41i1qAew