

DATE: November 6, 1996
TO: Mr. Reskin
CC: Mr. Lambert
FROM: Mr. Tripp
SUBJECT: Scenario Story

Here is a possible scenario for the simulator that I talked to you about:

The Discovery

In or around, 2153 humanity has discovered that once the exterior solar gravity well had no effect on a body to the degree of $1 * 10^{-534}$ Newtons (somewhere twice beyond twice Pluto's distance), ships could increase speeds without regards to standard Einsteinian physics. With this ability it is possible to travel to other solar systems in a matter of weeks. Still, the problem existed on leaving beyond the gravity well which could take some 3 weeks or more followed by 3 more weeks to slow down and enter the system, but a new age of exploration had begun.

The Exploration & Colonization Act

With this development, large companies wanted to come into various solar systems and plunder the natural resources. To avoid claim jumping, destroying of habitable planets, and solar wars the Exploration & Colonization Act of 2165 was created. In it individuals and small corporations with a value of 500 marks or less were given plots with settler's rights. These settler rights would be that their property would be any land they could have claim and hold for a period of 5 years. After the five years

were over, the larger corporations could explore and submit a plan to utilize the system to the most efficient. The SRAC (Solar-Resources-Allocation-Committee), a joint committee of Earth officials, colonists, and major corporations decide which three companies could use the resources of the land.

Formation of SRAC

In 2180, the corporations and a few powerful individuals took a plurality of control of the SRAC, enabling it so that if any individual or company takes over sixty percent of a particular solar system, they would be able to rule it without any control from Earth or the SRAC. In order to counter this change, the Sheriffs were created to protect companies and colonists. If violations of the Conduct Code were found, Sheriffs could issue warnings, fine companies, revoke their colonization rights, or even order a fleet to forcibly remove the offending groups.

Failure of SRAC

With the change in SRAC's authority, corporations started to become "unfriendly." Major colonists were disappearing, rival corporations were "found" to have violated certain laws that required their removal, and some sheriffs retired with large pension (SP) plans from anonymous donors. Some of these dirty tricks backfired, but with millions of marks at stake, the corporations were willing to take the chance.

KLR-34 System

One of the major systems is the KLR-34 system (nicknamed the Killer System) was generally ignored until it was discovered to contain super dense energy storing alloy called Battatrium. This metal when used could store

high amounts of energy with great efficiency, resulting in only a 0.03025 % energy loss over an entire year. Also, it could be used as a catalytic agent in genetic restructuring bypassing 10 years of evolution in the process of two days. Five companies tried to gain control of the system, but only two survived the combat, Future Gene and Mining & Power Resources.

Future Gene and Mining & Power Resources

Each of the two companies now control around 40% of the solar system, with the remaining 20 % going to the original colonists. If either side gains control of the system, the entire Earth Collation would belong to them. With limited control, the sheriff's are barely able to keep the peace between the two, unable to protect the smaller companies and colonists for the Machavillian plots of FG and M&P Resources.

You

As a small shipping company, you represent a serious threat to the companies trying to starve out the colonies in KLR. In your ship, you may be able to survive against the two largest corporations and obtain money beyond anyone's belief or become space debris which no one would ever care about.

DATE: November 8, 1996
TO: Mr. Reskin
CC: Mr. Lambert
FROM: Mr. Tripp
SUBJECT: Naming Conventions

The following naming conventions (derived from the Hungarian naming convention).

b_<Name>	Boolean
enum_<Name>	Enumerated Data
c_<Name>	Integer
ch_<Name>	Char
dw_<Name>	DWORD
f_<Name>	Float
fn_<Name>	Function
l_<Name>	Long
p_<type>_<Name>	Pointer to a specific type
n_<Name>	Short or int
s_<Name>	String
u_<Name>	Union
O_<NAME>	Object Class Name
<Object Name>_<Name>	Object Variable

Works Cited

Holzgang, David a. "teach yourself... Visual C++" _____

O_System_Class

O_MainBody_Class

p_O_System_Class p_next

O_OBJECT_CLASS

Enum_ObjectType

O_System_Class

O_Position_Class

I_Size

O_Position_Class

I_XLocation

I_YLocation

I_ZLocation

O_Movement_Class

I_XMovement

I_YMovement

I_ZMovement

Enum_ObjectType

U_Type

O_Ship

O_Planet (also Moons)

O_Comet

O_City

O_Star

O_Position_Class

I_XLocation

I_YLocation

I_Zlocation

O_Movement_Class

I_XMovement

I_YMovement

I_ZMovement

O_Material

p_ch_Name

f_StandardValue

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SUBJECT: Principle of setting up with a linked list

Setting up a linked list

An array is a great way to organize a group of items with similar qualities to be quickly examined and used without having to individually name them. Still, there are the disadvantages of using an array. The main problem is the fact the size of an array must be determined before the compiling of a program. To solve this there needs to be a way to create and destroy information during the actual running of the programming. To do this memory must be allocated and then freed up later so other data can store it.

Creation of Reserved Data

Because of the fact that data can not be just created and destroyed (for fear that it may write over or destroy important information) a set of commands were created *new* and *delete*. To create data at a particular point during the command

```
new <data_type>
```

is used to make data of a particular type. Once that is done the data is left floating out in memory. In order to access the memory there must be something showing where it is, a pointer.

A pointer is created by having store a value which contains the address of a particular type of memory and it also identifies what type

of data is stored there. To create a pointer a variable needs to be created like this

```
<data_type> * p_<pointer_variable_name>
```

After that is done, when the new data is created its address should be immediately assigned. Without assigning it, the memory is completely lost until the program ends.

```
p_<pointer_variable_name> = new <data_type>
```

With this the data can be used by adding a * in front of the variable type such as:

```
cout << *p_<pointer_variable_name>;
```

To destroy an object, delete the object's Pointer

```
destroy p_<pointer_variable_name>;
```

Working with a linked list

Now objects can be created using a pointers, but inside an object there can be pointers.

Constants:

Max_Distance = _____

Enumerated Data

Bool (Boolean)

True

False

Object Type

Ship

Dock

Comet

Asteroid

Meteorite

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SUBJECT: System Requirements

System Requirements

The current needs are to create a system with the following:

- 1.) Network between several (2+) computers to control the spaceship simulator.
- 2.) Each of the computers will need a GUI (Graphic-User Interface) for the user.
- 3.) Although the simulator does not need hard real-time (certain process running at exactly a specific time), there should be somewhat soft real-time (certain process running at approximately a specific time).
- 4.) Quick user interface permitting the user's commands to be almost instantly updated into the system.
- 5.) All of the computers are hooked to a master computer. The master computer can in turn control other systems, for setting up multiple simulations.