RUKY HORE, GATE DOLE!
THE MAKING OF A DEMO

DEMOBIT 2019 - RESOLUTION

Genycs Magazine #6 – February 1st, 2019

EDITORIAL

Welcome to a new issue of Genycs Magazine – possibly the last one!

Since the transition to the PDF format has not had the desired effect, namely an increase in feedback, I have decided to release new issues of this magazine only in an irregular manner from now on. Already this very issue you are now reading came out much later than had I kept the release schedule which I had applied before.

It may even be possible that Genycs Magazine will stop issuing as a separate magazine, and be merged with Prudentia Journal in the future. I still have to think about this. You can find the issues of Prudentia Journal that have been released so far at: http://www.prudentia.club/

This issue focuses on Demobit 2019, a demo party held in Bratislava, Slovakia, 1st to 3rd of February 2019. I am going to release my first demo, "Ruky hore, gate dole!", at that party, and for this reason I am also writing a bit about the making of this demo.

Hopefully you will enjoy reading Genycs Magazine #6. I am waiting for your feedback and, perhaps, contributions (articles).

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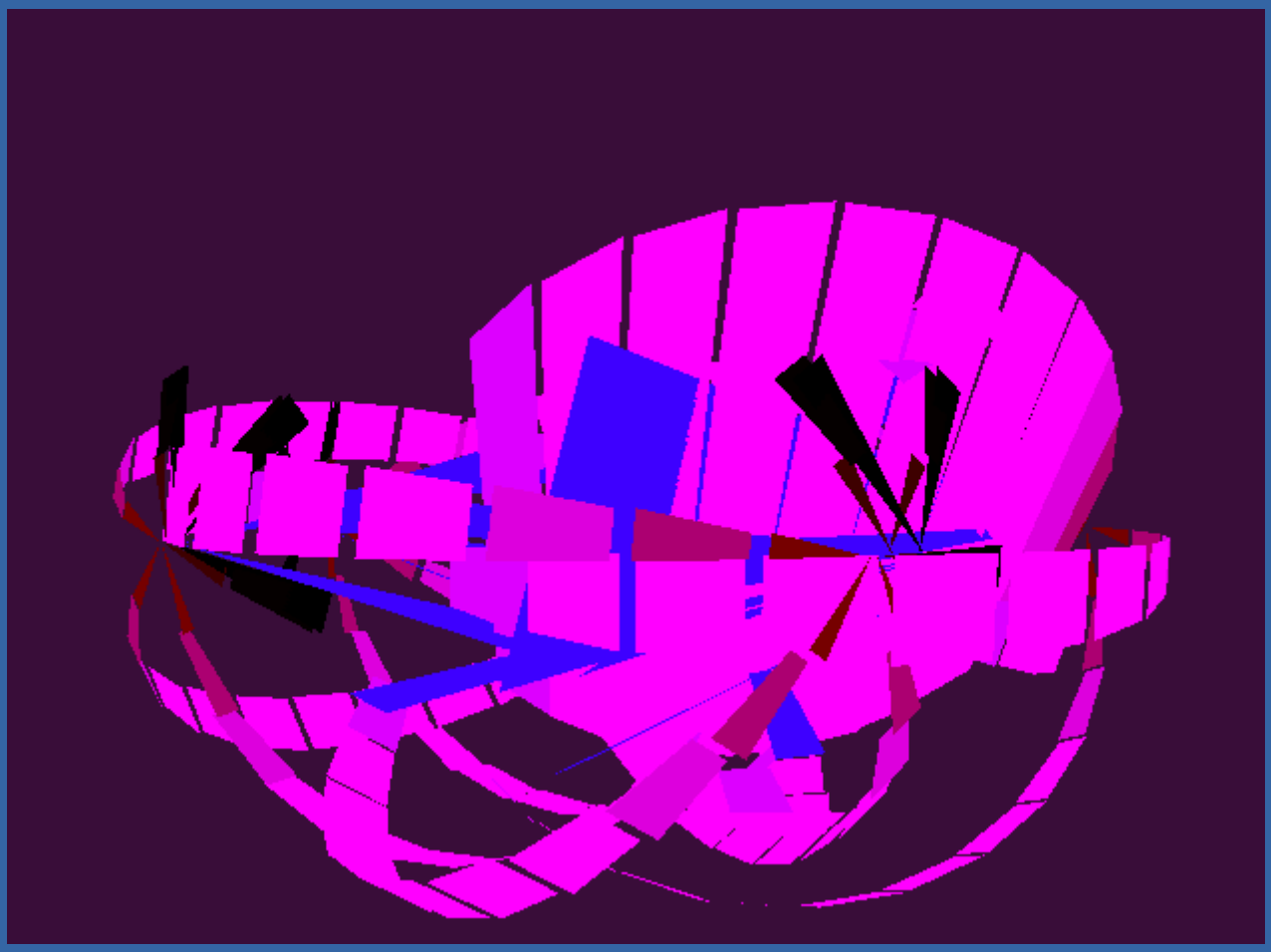
RUKY HORE, GATE DOLE!
THE MAKING OF A DEMO



I have been programming computers since I was eight years old, and I discovered the demoscene when I was eleven. While I won first place in an x86 Assembler programming contest organized by a demoscene magazine when I was fourteen, I mainly contributed to the demoscene by making a diskmag (Hugi). Only much later, at age 25, did I release my first coded demoscene production, a colorful 256-byte intro called "Indian Summer"; it placed second at the competition at the German party 0a000h 2008. Ten years later, I released the sequel to that intro, "Indian Winter", at Demobit 2018. In 2019, the third intro in this series, "Indian Fall", is about to follow.

But this article is not about the "Indian" series (you can read an article about "Indian Winter" in Genycs Magazine #1), it is about my first real demo – a production named "Ruky hore, gate dole!" (Slovak for "Hands up, pants off!"), with music composed by the renowned demoscene musician Traymuss of Addict and Nah-kolor and a duration of one minute. It is going to participate in the "One Scene Competition" of Demobit 2019.

I made the demo using Visual C++ 2005. For the music playback, I made use of the built-in PlaySound routine of Windows, which required the song to be stored in WAV format – that was the easiest way. As a graphics library, I used OpenGL. Basically, the framework of the demo is based on code from the legendary website NeHe (Neon Helium), which used to be available for free on the Internet. What I primarily did was to insert code in the Initialize,

Update and Draw methods that had the effect of displaying the single demo effect this production shows off, as well as the credits and other pieces of text.

The action on screen is based on a sphere the surface of which is divided into pieces which move around and rotate wildly. To initialize the sphere, I defined a couple of variables and performed the following assignments:

```
sphereCenter.x = 0.5;
sphereCenter.y = 0.1;
sphereCenter.z = 0.5;
sphereRotAngleX = 0;
sphereRotAngleY = 0;
sphereRotAngleZ = 0;
sphereMov = -0.0001;
sphereRadius = 1.4;

for (int i = 0; i < SIZE - 1; i++)
{
      midPointOffset[i] = sphereRadius * sin(3.141592 / (SIZE - 1) * (i - 4));
      partialSphereRadius[i] = sphereRadius * cos(3.141592 / (SIZE - 1) * (i - 4));
}
midPointOffset[SIZE - 1] = sphereRadius;
partialSphereRadius[SIZE - 1] = 0;
```

In the Update method, which is called in a regular interval of a couple of milliseconds, I modify the center of the sphere and then the coordinates of the sphere points. The sphere is not only rotated but it also moves up and down, which is caused by the first parts of the code you are going to see here.

```
sphereCenter.y += sphereMov;
if(sphereCenter.y < -0.5)
      sphereMov = 0.1;
if(sphereCenter.y < -1.0)
{
      sphereMov = 0.8;
      sphereMovDif = 0;
}
if(sphereCenter.y < -0.2)
      sphereMov = 0.2;
if(sphereCenter.y > 1.5)
      sphereMov = -0.4;
sphereMov -= sphereMovDif;
sphereMovDif += 0.0001;

sphereRotAngleY += 0.1;

for (int i = 0; i < SIZE; i++)
{
      for (int j = 0; j < SIZE; j++)
      {
            spherePoint[i][j].x = sphereCenter.x + midPointOffset[i];
            spherePoint[i][j].y = sphereCenter.y + partialSphereRadius[i] * sin(3.141592 /
            (SIZE - 1) * (GLfloat)(4 - j));
            spherePoint[i][j].z = sphereCenter.z + partialSphereRadius[i] * cos(3.141592 /
            (SIZE - 1) * (GLfloat)(4 - j));
      }
}
```

The Draw method then executes the code to bring the sphere on the screen. It employs the glRotatef method to rotate the output by the specified x, y, z angles, and draws the sphere using GL_QUADS (so it is – of course – not a real sphere but just an approximation of the surface of a sphere by means of many rectangular shapes).

```
for (int i = 0; i < SIZE; i++)
{
	for (int j = 0; j < SIZE; j++)
	{
		int i_next = i + 1 > (SIZE - 1) ? 0 : i + 1;
		int j_next = j + 1 > (SIZE - 1) ? 0 : j + 1;

		glRotatef (sphereRotAngleX, 1.0f, 0.0f, 0.0f);
		glRotatef (sphereRotAngleY, 0.0f, 1.0f, 0.0f);
		glRotatef (sphereRotAngleZ, 0.0f, 0.0f, 1.0f);

		glBegin (GL_QUADS);
		glColor3f (partialSphereRadius[i] / sphereRadius + (float)((int)tickCount % 1000)
		/ 2000.0f, 0.0f, partialSphereRadius[i_next] / sphereRadius * 2);
		glVertex3f (spherePoint[i][j].x, spherePoint[i][j].y, spherePoint[i][j].z);
		glVertex3f (spherePoint[i_next][j].x, spherePoint[i_next][j].y,
		spherePoint[i_next][j].z);
		glVertex3f (spherePoint[i_next][j_next].x, spherePoint[i_next][j_next].y,
		spherePoint[i_next][j_next].z);
		glVertex3f (spherePoint[i][j_next].x, spherePoint[i][j_next].y, spherePoint[i]
		[j_next].z);
		glEnd ();
	}
}
```

That's what brings the action on the screen!

If you have not watched my demo yet (and if it has already been released meanwhile), check it out. I'm sure you won't be disappointed.

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DEMOBIT 2019 – RESOLUTION

Right now it is Friday, February 1st, 2019, short before 4:00 pm. The gates of Demobit 2019 opened at 12:00 pm. I am not at the party place yet, I am still at home. But I will go to the party tomorrow, by train. Fortunately, Bratislava is very close to my own hometown, Vienna. It is just one hour of a train ride. In addition, I will have to take two buses until I will reach the party place, which is at the Binarium, Staré Grunty 18, a building where a couple of IT-related start-up companies reside.

Here you can see what the party place looks like. As you see, there is a kitchen that serves fresh and tasty food, and there is a lot of space for people to sit down, drink a cup of coffee, socialize and relax.

Of course this photo was from 2018, but the party place has not changed much, as a couple of photos that have already been leaked online (but which I am not using here for copyright reasons) show.

Last year I made the mistake that I wrote in my report about the party that this is a students' canteen. Zden, the main organizer of Demobit, informed me that if such a fancy place were a students' canteen, Slovakia would already have the living standards of Western Germany. So, students' canteens in Slovakia are still far more modest than this place.

Considering this aspect, I am happy that such an exquisite location has been chosen for a demoparty.

The first Demobit event was held in 1995. There were follow-up events in 1996, 1998, 2000, and 2001. Then there were 16 years of silence until Demobit 2017 – which was appropriately subtitled Resurrection.

Zden is a long-time Slovak scener who is best known for his surrealistic demos, which he released under the Satori label. These demos are different from most other demoscene productions, they have a style of their own – in my opinion, they are a must-see.

This screenshot was taken from the Satori demo "Cosmic Crypt", which was released at Demobit 2018. I am already curious what Zden is going to release this year!

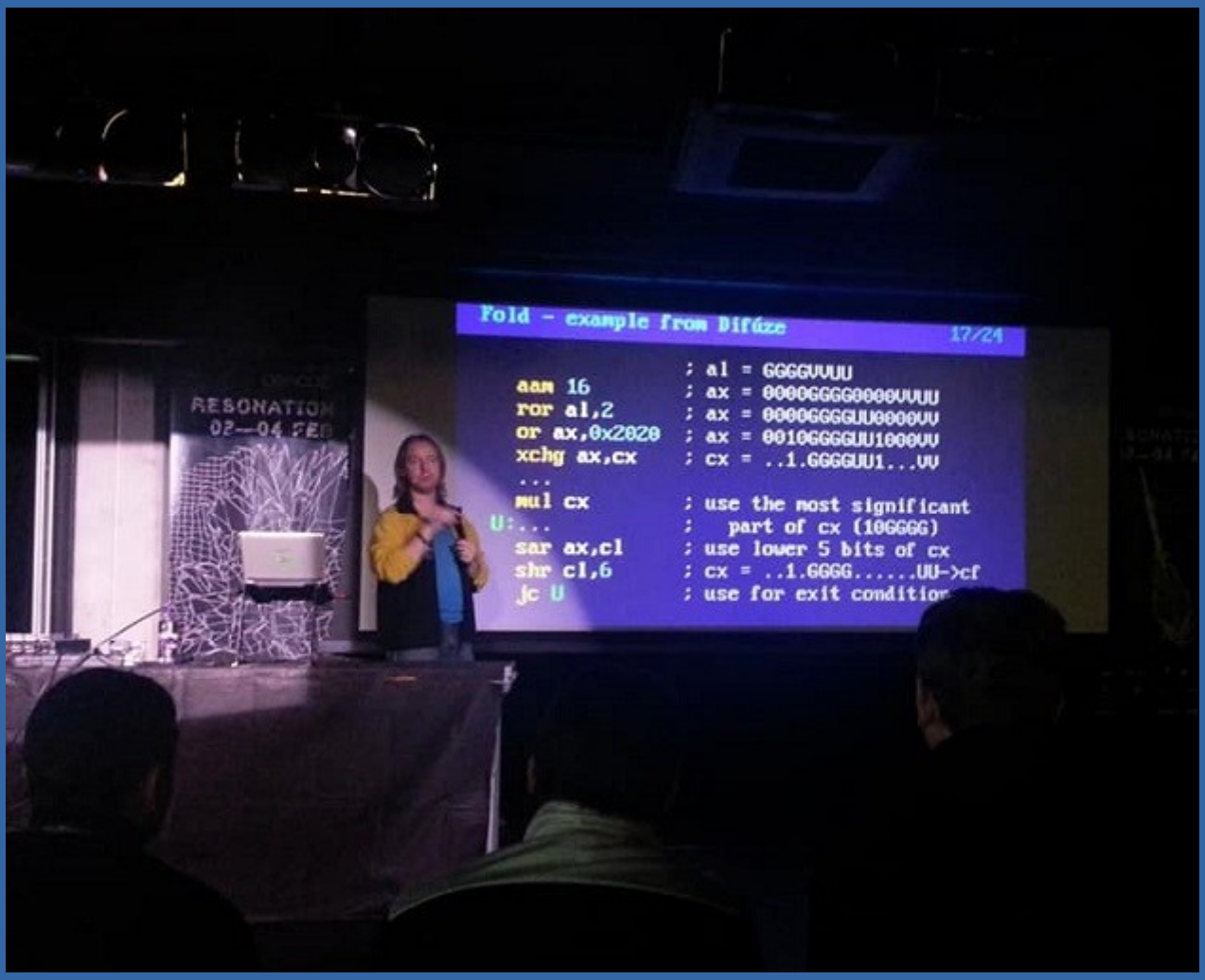
As said, Zden is the main organizer of Demobit, but he has several helpers. One of them is a young lady named Natalia, whose persistence and diligence is highly admirable.

The following competitions are going to be held at Demobit 2019:

- PC Demo
- Amiga Demo
- PC Intro
- PC 256B Intro
- One Scene
- Wild Demo
- Animation / Video
- Graphics
- Animated GIF
- Photo
- Streaming Music

There are visitors from all over Europe at Demobit every year, not only from Slovakia but also from Austria, the Czech Republic, Hungary, Germany, Poland, and sometimes even countries farther away, such as the United Kingdom, Greece and Israel.

In the past two years, the Czech coder Řrřola delivered presentations about size-optimizing for 256b intros in x86 Assembler.



There are also going to be several seminars this year, namely:

- Mikael Kalms: High-performance code on Amiga 500
- Daniel 'Hellboy' Vávra: From the Demoscene to Game Development
- Jake 'ferris' Taylor & Ian 'djh0ffman' Ford: Massive sound, Tiny Data
- noby (Roope Mäkinen): Deconstructing Demomaking
- Sebastian M. Kotek: Retrofit gear PCB designing

Also, several artists are going to perform, including the music groups DaT and Logicoma.

Perhaps some of you have time this weekend and still have not made any other plans! I will be there on Saturday and Sunday, see you there if you decide to come!

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LEGAL STUFF

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