Game Development

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An Introduction

Housekeeping

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What can you expect?

- A basic understanding of how games work.
- How they’re made, including architecture, graphics, psychology, monetisation and what interests gamers.
- The difference between programming languages, and what you can expect when using different platforms.
- A more in-depth understanding of specific topics.
- Ultimately have the bants, and learn while doing it.

What can you expect from The Theory

- Functioning and architecture of games
- The different kinds of business plans
- Level and content design
- The psychology of games, including addiction and compulsion
- real life examples

What can you expect from The Practical

- A simple tutorial on how to create a game in Java.
- An introduction to game mechanics programming.
- Try out basic and advanced system architecture concepts.
- Hopefully have a finished game by the end.
- Introduction to Game Engines.
- Something to put on your CV or in your Portfolio!
- Experience with Teamwork and Agile development methods! (should time permit)
- Ultimately you'll be free to create what you want. We just want to give you the tools to do so!

A brief history

- The first graphical game was Pong, made in 1958 by a physicist.
- Turing wanted to work on chess games, but he was never allowed a machine for his research. He devised an algorithm, and pretended to be a Computer, executing one instruction at a time. It was his way of showing what a computer could do.
- The earliest games were text based, or required physical overlays on the screen.

A history of consoles

- The first console was a Magnavox Odyssey in 1972.
- it cost $100 at the time, or an equivalent $564 in today’s money.
- It sold a total of 330,000 units.
- A flurry of pong or tennis based consoles followed.
- The atari and NES were the next major consoles. Sega joined the race, and in the 90s the Playstation was introduced.
- Nintendo's n64 went on sale in 1996. It sold 32.9 million units worldwide.
- The playstation 1 had an even bigger success story, selling 102.5 million units.

A history of consoles

- Then came the more powerful and recent generation of consoles. Starting with the Playstation 2, and Xbox.
- Moving onwards to the Nintendo Wii, Xbox 360 and Playstation 3.
- and finally at today’s best consoles, the Wii U, Xbox One and Playstation 4.

The evolution of games

- Games started out as a display of computing power or potential, but Companies soon realised that they could be a major source of profit through mass production. This resulted in quick monetisation of games.
- International video game revenue is estimated to be $81.5B in 2014. This is more than double the revenue of the international film industry in 2013.

THE EVOLUTION OF VIDEO-GAMES.

Chris Harrison

5 centimeters=1 meter

1972 A.D.- Pong-sapian Pong Era

1973 A.D.- Invader-Sapian Space Invader Era

1985 A.D.- Mario-Sapian Super Mario Era

1991 A.D.- Sonic-Sapian Sonic the Hedgehog Era

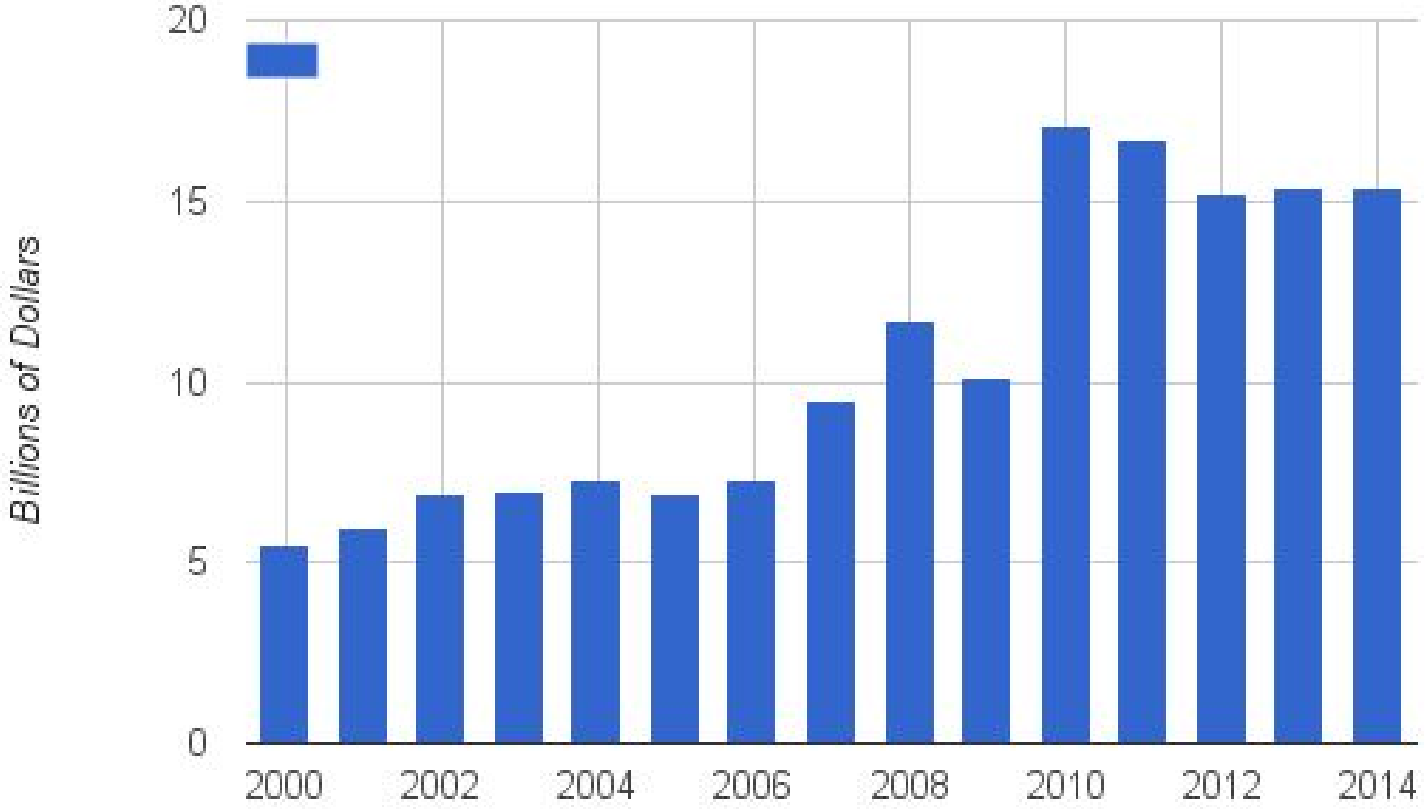
1996 A.D.- Crash-Sapian Crash Bandicoot Era

2008 A.D/Present- Big Daddy-Sapian Bioshock Era

the video-game crash

first gen	second gen	third gen	fourth gen	fifth gen	sixth gen	seventh gen

1972 1976 1983 1987 1993 1998 2004 Present

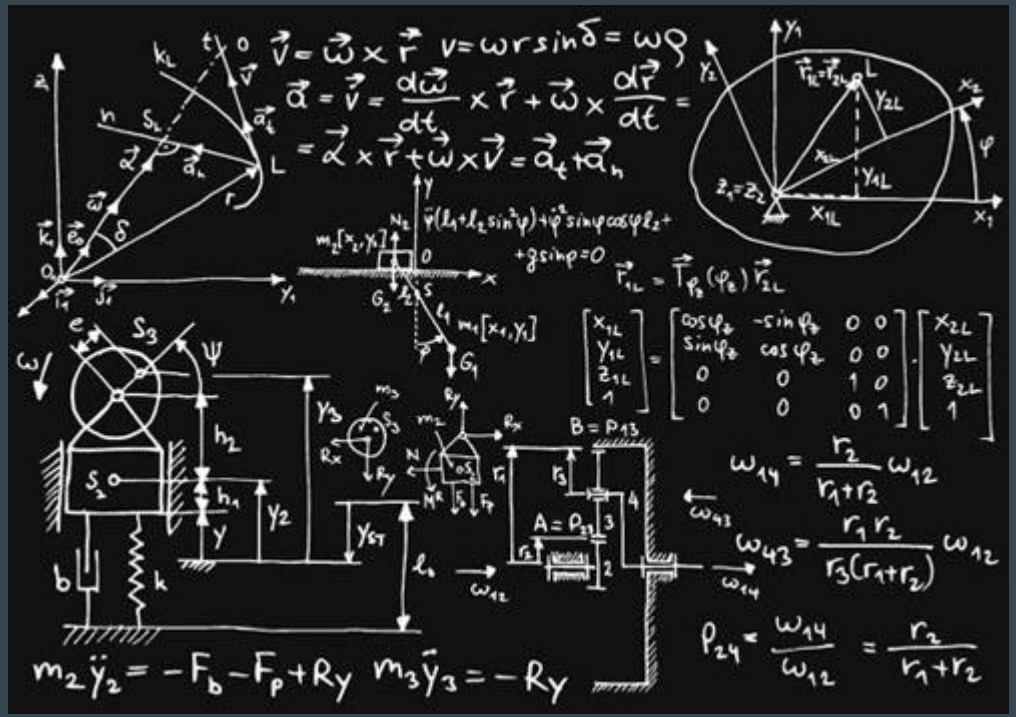

Billions of Dollars
20
15
10
5
0
2000
2002
2004
2006
2008
2010
2012
2014

What even is a game?

From a programming perspective, and in the most general sense with reference to all games, a game is Just a Loop with this structure:

- Get input from the player
- Update the world
- Draw Graphics
- Repeat till they quit

In reality the order can be changed, but for the most part it is left as is above.



What even is a game?

From the perspective of an artist, a game is an interactive work of art envisioned by a group of people.

A game is a collection of ideas that can be interacted with dynamically. Often, an entire new world.

These ideas are encoded into data and code in order to exist objectively, just like reality is encoded by energy and physics.

Some Basic structuring

- Do not simply jump into the *play* part of your game.
- If it is designed to be shared, then it will need more thought put into it.
- It’s also a creative world, so enjoy what you do!

Some Basic structuring

Some tips for good practice:

- Try to know how many different screens and states you will have so that you can add in stub functions at the start.

```
int main()
{
     while(MainMenu())
     {
          while(PlayGame())
          {
          }
     }

     return 0;
}
```

```
bool PlayGame()
{
     ShowStory();
     ResetGame();
     while(input != 'y')
     {
          UpdateWorld();
          DrawGraphics();
          GetInput();
     }
     return GameOverScreen();
}
```

Some Basic structuring

- A general guideline is to think of playing the game in your head. Each option you can choose is a screen, and therefore should be a stub function.