GAME 1306 - Design & Game Simulation

9/24/19

Notes

Defining Chess as a Game:

Challenges are interactive

Players must move across the board

Chess has a clearly defined rules that govern the able goal: the capture of the opponent’s king.

Defining these principles are similar to defining video game’s principles

What is a Game?

Interactive

Challenging

Engaging

Immersive

Objective/Goals

Discernable Rules

Computer Program

What is aPlatform?

Three Main Platforms

Personal Computers (PC)

Microsoft Windows 7 or 8

Apple Mac OS X

Linux OS

Console

Playstation 4

Xbox One

Nintendo Switch/Wii U

Mobile/Handheld

Nintendo 3DS/DSiWare

Playstation Vita

Android

Player Modes:

Single Player- Bioshock, Final Fantasy

Co-op- Portal 2, Left 4 Dead

Adversarial Multiplayer:

Mortal Kombat, Smash Bros

History of Games

Birth of Games:

Cathode Ray Tube Amusement Device. WWII, 1947

Used to determine where artillery shell trajectory

Not for public use

Tennis for Two. Brookhaven National Lab, 1958

William Higinbotham. Sports game.

Used by maniplulating light wave lengths

Space War. MIT, 1962

Steve Russell. Space Combat

Adversarial multiplayer

Defeat opponent while staying out of gravitational pull towards center.

Rise of Arcade and Home Entertainment

Magnavox Odyssey. Magnavox 1972

Ralph Baer, Founder. “Father of Video Games”

First Generation Console

Used printed mylar mats placed on home TV screens. Controllable bright lights behind overlays created different games. Hockey, Tennis, etc.

Pong. Atari, 1972

Nolan Bushnell, Ted Darby

Arcade, Tennis

Oregon Trail. Minnesota Ed. Computing Corporation, 1974

Paul Dillenberger, Bill Heinemann, Don Rawsitch

Adventure, Cross-trek the American Northwest

A lawsuit between Baer of Magnavox and Bushnell of Atari for copying Pong, settled in 1976. Atari paid out $700,000 in settlement. Atari (meaning to strike), mob like atmosphere within company, sued clones of their popular games.

Atari 2600. Atari, 1977

Bolan Bushnell, Ted Dabney

Second Gen Console

Colossal Cave Adventure Game. Crowther/Woods, 1977.

Text Adventure. William Crowther, Don Woods

Zork. Infocom, 1977

Text Adventure. Tim Anderson, Marc Blank, Bruce Daniels, Dave Lebling.

Ray Kassar. Warner Comm. Company

Burlington Industries. Owner of Atari

Fired “The Gang of Four”, developers that went on to found Activision.

Activision, 1979

Founded. David Crane, Larry Kaplan, Alan Miler, Bob Whitehead

First to build 3rd party game. Used by Atari 2600

Space Invaders. Taito, 1978

Arcade. Tomohiro Nishikado

Asteroids. Atari, 1979

Arcade. Ed Logg, Dominic Walsh.

Pac-Man. Namco, 1980

Arcade. Toru Iwatani

Centipede. Atari, 1980

Arcade.

Donkey Kong. Nintendo, 1981

Arcade.

Tron, Bally Midway, 1982

Arcade. Bill Adams.

Custer’s Revenge. Mystique, 1982

Adult.

Crash and Recovery

Crash of ’83, pac-Man. E.T. Atari, 1982

Arcade, Adventure

Lost over 500M under Ray Kassar’s leadership.

Activision suffered as well, deciding to shift focus away from consoles.

Commodore 64. Commodore Business Machines, 1982

Founded

Universal Studios vs Nintendo. 1984.

Lawsuit for name likeness. Nintendo won and countersued for $56K for damaged property.

International Karate+. System 3, 1987

Fighting. Rob Hubbard. Dan Michek.

IBM Personal Computer. International Business Machines. 1984

Founded. 640kb.

Apple Macintosh. Apple, 1984.

Founded.

Tetris. Dorodnitsyn Computing Centre of the Academy of Science of the Soviet Union. 1984

Puzzle. Alexet pajitnov, Vladimir Pokhilko

Originally on Commodore 64, then CalicoVision

Nintendo Entertainment System. Nintendo, 1985.

Founded. Cartridge system. 1M units sold first year, 60M+ over lifetime.

Famicom in Japan

Sega Master System. Sega 1986.

Founded. 3rd Gen Console

Reader Rabbit. The Learning Company, 1986

Educational

Legend of Zelda. Nintendo, 1987

Adventure.

Metal Gear. Nintendo, 1987

Stealth.

John Madden Football. Electronic Arts, 1988

Sports.

Game Boy. Nintendo, 1989

Sega Genesis. Sega, 1989

4th Gen. Console. Nearly 30M units sold

Solitaire. Microsoft, 1990

Card Game.

Civilization. Micropose, 1991.

Turn Based Strategy. Sid Meier

Super Entertainment System. Nintendo, 1991

4th Gen. Console. Nearly 50M units sold

The console war begins

Sonic the Hedgehog. Sega, 1991

Platformer.

Mortal Kombat. Midway 1992

Fighting.

Lead to the ESRB rating system

Wolfenstein 3D. iD, 1992.

First Person Shooter. John Carmack

Invented the FPS genre

Shareware (free to download)

Night Trap. Sega, 1992

Interactive Movie/Game

Myst. Cyan, Inc. 1993.

Puzzle Adventure. Rand Miller, Robyn Miller

Doom. Id Software, 1993

First Person Shooter. John Romero, John Carmack

Shareware

First multiplayer FPS

Entertainment Software Rating Board. 1994

Politics.

1995 Sega Saturn – disc

$400, sold 8.82M

1995 Sony Playsation – disc

$200, sold 32.93M

1996 Nintendo 64 – cartridge

$300, 104.25M

Resident Evil. Capcom, 1996

Survival Horror.

Created the survival genre

Diablo. Blizzard, 1996.

Adventure Role Playing.

Procedurally generated levels

Super Mario 64. Nintendo, 1996

Platformer.

“Open world”, non linear

Free camera movement

Final Fantasy VII. Squaresoft, 1997

Role Playing.

Grand Theft Auto. Rockstar, 1997

Action.

Snake. Nokia, 1997

Arcade. Taneli Armanto

Gran Turismo. Polys Entertainment, 1997

Racing Simulation

Graphinc Calculators and emulators

Legend of Zelda: Ocarina of Time. Nintendo, 1998

Adventure.

Dance Dance Revolution. Konami, 1998

Music Rhythm. Arcade

Half Life. Valve, 1998

First Person Shooter.

No cut scenes, players had full control the entire game

The Sims. Maxis, 2000.

Simulation. Will Wright.

2000 and beyond

1999 Sega Dreamcast

$200, sold 8.2M

2000 Sony Playstation

$300, sold 157.68M

2001 Microsoft Xbox

$300, sold 24.68M

2001 Nintendo GameCube

$200, sold 21.74M

America’s Army. United States Army. 2002

First Person Shooter.

Grand Theft Auto III. Rockstar, 2001

Action Adventure.

Steam. Valve, 2003.

Founded.

World of Warcraft. Blizzard, 2004.

Massive Multiplayer Online Roleplaying Game.

Facebook. Facebook, 2004

Social Network

Net Nutrality. 2004

Politics

Hot Coffee Mod. Rockstar Games. 2005

Politics.

Enables sex with characters.

2004- Nintendo DS

$150, sold 154.9M

2005- Playstation Portable

$200, sold 80.82M

Guitar Hero. Harmonix, 2005

Music Rhythm.

Strickland vs Sony. Jack Thompson, 2005

Politics.

Stolen car, Shooting in a Police Station. Lawyer, Thompson, claims caused by Grand Theft Auto.

Brown vs Entertainment Merchants Association. 2005

Politics.

Wanted to ban violent video games in California, voted unconstitutional.

Super Columbine Massacre RPG!. 2005

Politics, RPG. Danny Ledonne

7th Gen

2005- Microsoft Xbox 360

$300, sold 85.8M

2006- Cony PLaystation 3

$500, sold 86.9M

2006- Nintendo Wii

$250, sold 101.64M

Team Fortress 2. Valve, 2007

First Person Shooter.

Mafia Wars and Farmville, Facebook/zynga. 2008

Daily logins, pay-to-play, addictive hook with no real game

Angry Birds and Candy Crush, Mobile Games. 2009 and 2012 respectively

Appeals to addicts

League of Legends. Riot, 2009

Multiplayer Online Battle Arena

Minecraft. Mojang, 2009

Sandbox. Marcus Persson.

Best selling game in the world. Sold to Microsoft for 2.5B

Call of Duty: Modern Warfare 2. Infinity Ward. 2009.

First Person Shooter.

Political. Airport level.

Feminist Frequency. Feminist Frequency. 2009 to Current

Political Activism

2011- Nintendo 3DS

$170, 70.2M

2012- PS Vita

$250,

Fez. Polytron Corporation, 2012

Puzzle.

Scrolls. Mojang, 2012-2016

Card Game.

8th Gen

2012- Nintendo Wii U

$300, sold 13.97M

2013- Sony Playsation 4

$400, sold 81.5M

2013- Microsoft Xbox One

$500, sold 38.35M

Ouya, Kickstarter

$100, Not much

Steam Machines

Arma II. Bohemia Interactive, 2009

Tactical Shooter

DayZ. Bohemia Interactive, 2013

Survival Shooter.

Oculus Rift. Oculus VR, 2013.

Virtual Reality.

No external camera tracking

Virtuix Omni. Virtuix, 2013.

Virtual Reality.

#GamerGate. Internet, 2013.

Political.

Ethics in journalism and sexual harassment

Flappy Bird. Dong Nguyen, 2013.

Arcade, Mobile.

This War of Mine. 11 bit studios, 2014.

Survival.

War adjacent

Monument Valley. Ustwo games limited, 2014.

Puzzle.

No Man’s Sky. Hello Games, 2016.

Adventure.

Undelivered expectations

HTC Vive. HTC. 2016

Virtual Reality.

Two controllers and steam compatible

Two sensor towers

Overwatch. Blizzard, 2016

First Person Shooter.

Pokemon GO. Niantic, 2016.

Mobile.

9th Gen.

Nintendo Switch. Nintendo, 2017.

Console

$300, sold 19M

Mass Effect: Andromeda. Bioware, 2017

Role Playing, Action

Player Unknown’s Battleground. Bluehole Studio, Inc. 2017

Battle Royale.

Wolfenstein II: The New Colossus. Bethesda, 2017.

First Person Shooter

Fortnite. Epic, People and Fly, 2017

Battle Royale

Star Wars: Battlefront II, Dice, 2017

First Person Shooter, Politics.

Loot box controversy, pay-to-win

PUBG vs Fortnite 2018

Politics.

Active Shooter. Revived Games, 2018.

First Person Shooter.

Fortnite Cheaters, 2018.

Political. Sued a 14 year old for allegedly hacking.

The Industry

Roles:

Publisher

Developer

Game concept:

Fun factor

Thrill

Challenges

Suspense

Tension

Emotion

Immersion

Rules:

Instructions

Limitaions

- Player actions

Consequences

Feasible

Balance

Victory conditions

Failure conditions

Challenges:

Opposition

Obstacles

Clear defined event, character, or situation that prevents and player from reaching goal

Pitching the game:

Title

Placeholder

Least impittant note

Can change

Genre

Core genre

Major gameplay mechanic

Action

Adventure

Rhythm

Horror

Survival

Simulation

Hack/Slash

Beat’em up

Shooter

Strategy

Platform

Hardware

Windows

Mac

Linux

Microsoft xbox one

Sony Playstaion

Nintendo Wii U

iOS

Android

Target audience

Age group

Play styles

Game mechanics

Genres included

Premise

The main point of the game, the core game concept

A main feature

May include a game mechanic

Game setting

Environment

Timeline

Color

Backstory/Game World

Historical

Game settings’ pre-requisites to the it’s existence

Gameplay Mechanics

Core gameplay

Major and minor

(Mario) Jumping major, shooting minor, racing the clock minor

Character Descriptions

Physical

Mental

Mannerisms

Strengths

Weaknesses

Statistics

Levels

Weapons

Proficiency Skills

Mission/Story Progression

Beginning to middle to end

Progressively challenging

Optional

Features/Gameplay Highlights

Video game key points

Stands out from it’s competitors

Selling points

Technology Highlights

Software

Hardware

Graphics engine

Game engine

Art/Audio Highlights

Specific Musician/composer

Music genre

Sound effects type

Art style

Competitive Analysis

Other video games

Features

Mechanics

Stories

Graphics

Etc

Risk Analysis

Possible problems with possible solutions

Problems range

Technical

Design

Art

Business

Team

Core developers or players

Budget

Expected costs

People

Software

Hardware

Vendors

Schedule

Expected release

Other important dates

Pitching a game to a publisher…

Picky

Managing Developer-Publisher Relationship

Updates, updates, and more updates!

Good progressive moves

Independent Developer

Milestone payments, due diligence on staff, dependent on dev’s ability to

deliver what they can. (Indy Studios; Hello Games, Double Fine, the Behemoth)

Publisher-Owned Developer

Finance are guaranteed, can develop game with less worry, more resources available. (Triple A studio; Bethesda, Valve, Capcom, EA, 2K, Ubisoft)

Legal Agreements

Work for Hire

A work prepared by an employee

Work specially prepared by an employee

A contribution

A translation

Non-Discllosure agreements

Confindential information

Production secrets

Security

Development contracts

Work in progress for hire

Scheduled time

Licenses

Software

iOS, Android, Microsoft

Autodesk

Adobe

Console Manufacturers Approval

iOS

Android

Sony

Microsoft

Nintendo

Non-Competition Agreement

Priority One and only one

Can not work for multiple companies at the same time

Team Roles:

Production

Art

Engineering

Design

Quality Assurance Testing

Team Organization

Production – General

Managing and tracking the game’s development

Leading to keep team(s) happy, focused, motivated, and productive

Not usually responsible for creating game assests

Keeps team focused on completing game tasks

Executive producer

5-10 yrs exp

Research hardware software

Employee training programs

Negotiating contracts

Evaluating external vendors

Manages multiple producers

Producer

3-5 years exp

In charge of a single game

In charge of development for that single game

In charge of game’s budget, time, quality, Marketing, Sales, Operations, PR, studio management, creative services, legal, third-party console manufacturers, and external vendors

Steers team towards the right direction

Associate Producer

1-3 yrs

Background/Training of Producer

Leadership

Communication

Organization

Motivation

Knowledge of Game industry

Project Management

People Management

Public Speaking

Art- General

Creating all the graphic assests

Characters, cinematics, vehicles, levels

Match art with next-generation hardware and software

Machines have more memory, processing power, storage space

Likely to outnumber other team members by two to one

Art Director

5-10 yrs exp

Ensures Art Assests relate to each other

Communicate the artistic vision to the team

Establishes rule and roles to art team

Lead Artist

3-5 yrs exp

Works with Art Dirctor if there is one

Manages quality of art assests

Concept Artists

1-3 yrs exp

Visionaries

Creates concepts before production

2D art

Traditional drawings and painting

Creates/documents artistic vision of game

Asset Artist

2D and or 3D art production

Characters

Weapons

Vehicles

Props

Texture Artist

Environmental Artist

3D modeler

User Interface Screen

Animator

2D and/or 3D Art Production

Characters

Vehicles

Technical Artist

Collision Volumes

Proper Exports

Physics Attributes

Marketing Artist

Game Screenshots

Gameplay Videos

High Resolution Art

Packaging

Game Manuals

Advertising

Background/Training for Artists

Painting

Drawing

Sculpting

2D/3D Software to create assets

Communication

Engineering – General

Involved in every aspect of the game

Graphics

Animation

Scripting

Tools

Physics

Technical Director

5-10 yrs exp

Knowledgeable of the latest tech

Research & Development

Sets Code Standards

Determines Game Tech used in Game

Coding Maintaining Libraries

Lead Engineer

3-5 yrs exp

Manages day to day tasks of the team

May not be creating code, depends on the team

General knowledge of the game technology

Good communication skills

Networking Engineer

Multiplayer Code, works with multiplayer designer

Sound Engineer

Sound engine, works with sound designer

Graphics Engineer

Graphics code, works with technical artist

Tools Engineer

Proprietary tools, scripting, lighting, exporters, localization tools, works with various teammates

AI Engineer

Artificial Intelligence Behaviors, works with design team

Background/Training for Engineers/programmers

Computer Science

Self-Taught

Knowledge in programming languages, operating systems, compilers, debuggers,and applications programming interfaces

Math

Design – General

Dev

Documenting

Scripting the core concept of the game

Control Scheme

Charaters backgrounds

Combat system

Creating a compelling and immersive gameplay

Creative Director

5-10 yrs exp

Creates Overall Vision of the game

Interacts with many different team members

Balances environments, characters, music, dialogue, and gameplay

Systems Designer

Scoring system, combat model, controller scheme, character creation system

UI Designer

User Interface screens functionality and fitting in the game screen

Level Designer

AKA World builder, level layouts, art position, designs on paper

Scripter

Interactive objects, enemies in levels, controls events and how many enemies the player will see, gameplay challenges, non player character interactions

Writer

Story elements

Characters

Dialogue

Works with lead designer/creative director

Marketing

PR copy

Websites content

Game Manual

Creative Writing

Writing for Interactive Media

Background/Training for Designers

Variety of Backgrounds

Strong Verbal and Written Communication

Variety of Game Theories and Play Games

Open-Minded

Empathy

Quality Assurance testing – General

Play Testing

Treasure Seekers of Defects in the Game

Lead QA Tester

2-3 yrs exp

Works with producer and other leads

Evaluates game features

Estimates time of testing

Responsible for game test plan

Must know game functions

QA Tester

Checking game functionality against test plan

Test new features

Test ne prototypes

Find defects in game software

Test console manufacturers technical requirements

Playing games all day, every day

Background/Training for QA

No Formal Training

Good written and communication

Organizational

Analytical

Production Cycle

Pre-production

Production

Testing

Post-production

Pre-production

First phase

Defines the game

How long will it take to make?

Can last from one week to one year

Rule of thumb: 10-25% of the total development

Game Plan

Information on the game’s concept

Features

Basic technical & Design documentation

Costs, budget

How long will it take?

How many people?

What skills required?

Production

Production of assests

Production of code

Playable prototype

No surprises

No feature creep

Tracking of tasks and milestones

Testing

Debugging

Bug testing

Checking for errors

Jira Software- a visual team assignment organizational tool

Plan validation

Code release/ code release candidate

Code release- Final most completed version of the game script

Code release candidate- best options for code release

Post-production

Learning from experience, post mortems

Archive plan