

Game Design

Course 0

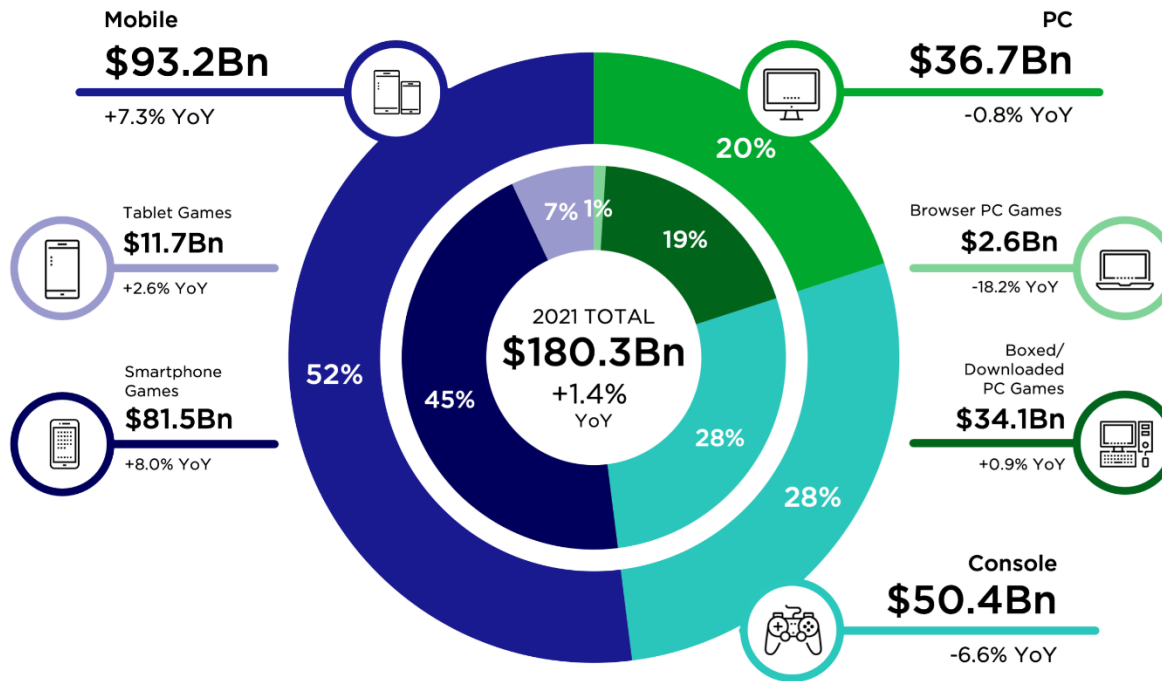
Motivation

- Interactive media
 - Has grown constantly in the past years
 - Worth more than 150 billion dollars in 2019
 - Is becoming a form of artistic expression
 - The topics of Game Design and Development are of great interest for students



2021 Global Games Market

Per Device & Segment With Year-on-Year Growth Rates



\$93.2Bn

Mobile game revenues in 2021 will account for 52% of the global market

Source: ©Newzoo | Global Games Market Report | January 2022

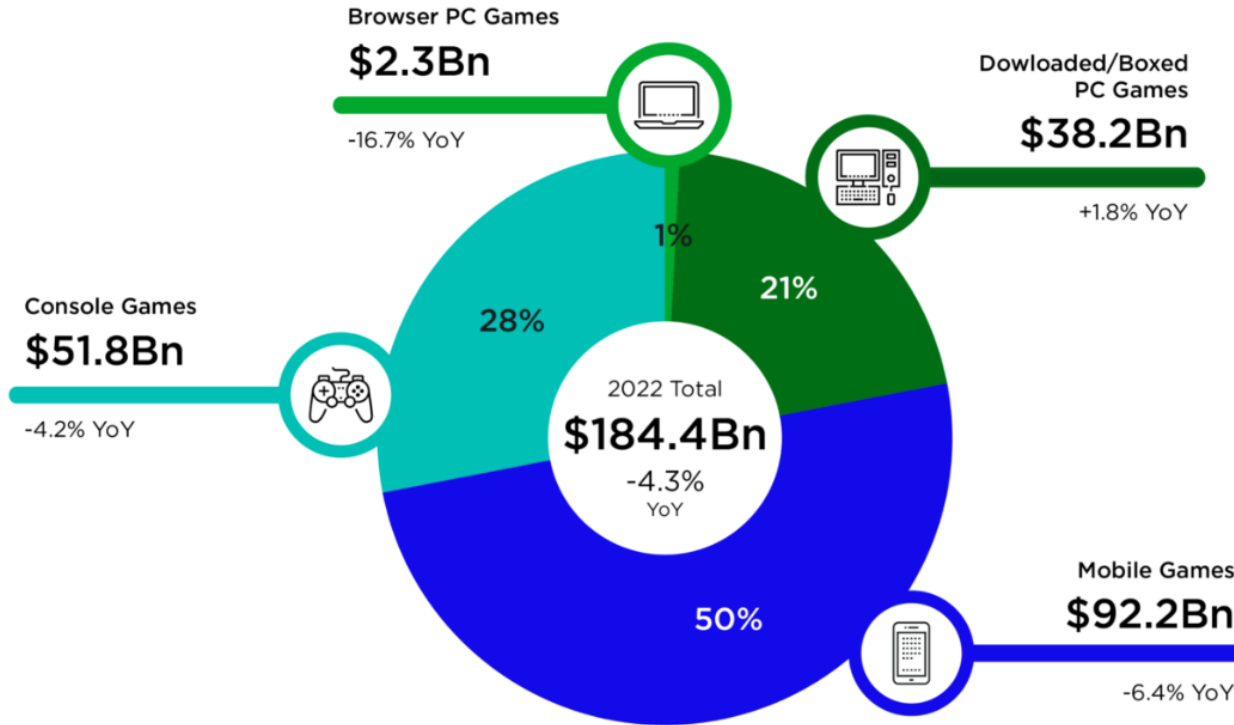
newzoo.com/globalgamesreport

Our revenues encompass consumer spending on games: physical and digital full-game copies, in-game spending, and subscription services like Xbox Game Pass. Mobile revenues exclude advertising. Our estimates exclude taxes, secondhand trade or secondary markets, advertising revenues earned in and around games, console and peripheral hardware, B2B services, and the online gambling and betting industry.



2022 Global Games Market

Per Segment With Year-on-Year Growth Rates



\$92.2Bn

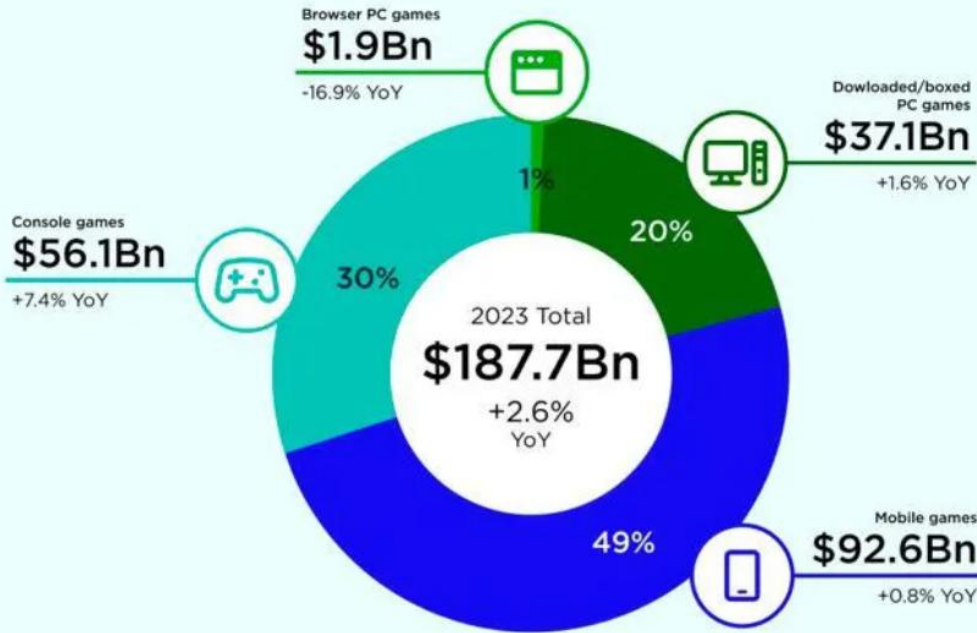
Mobile game revenues in 2022 will account for 50% of the global market

Our revenues encompass consumer spending on games: physical and digital full-game copies, in-game spending, and subscription services like Xbox Game Pass. Mobile revenues exclude advertising. Our estimates exclude taxes, secondhand trade or secondary markets, advertising revenues earned in and around games, console and peripheral hardware, B2B services, and the online gambling and betting industry.



The global games market in 2023

Per segment with year-on-year growth rates



Source: @Newzoo | Global Games Market Report | July 2023
<https://newzoo.com/games-market-reports-forecasts>

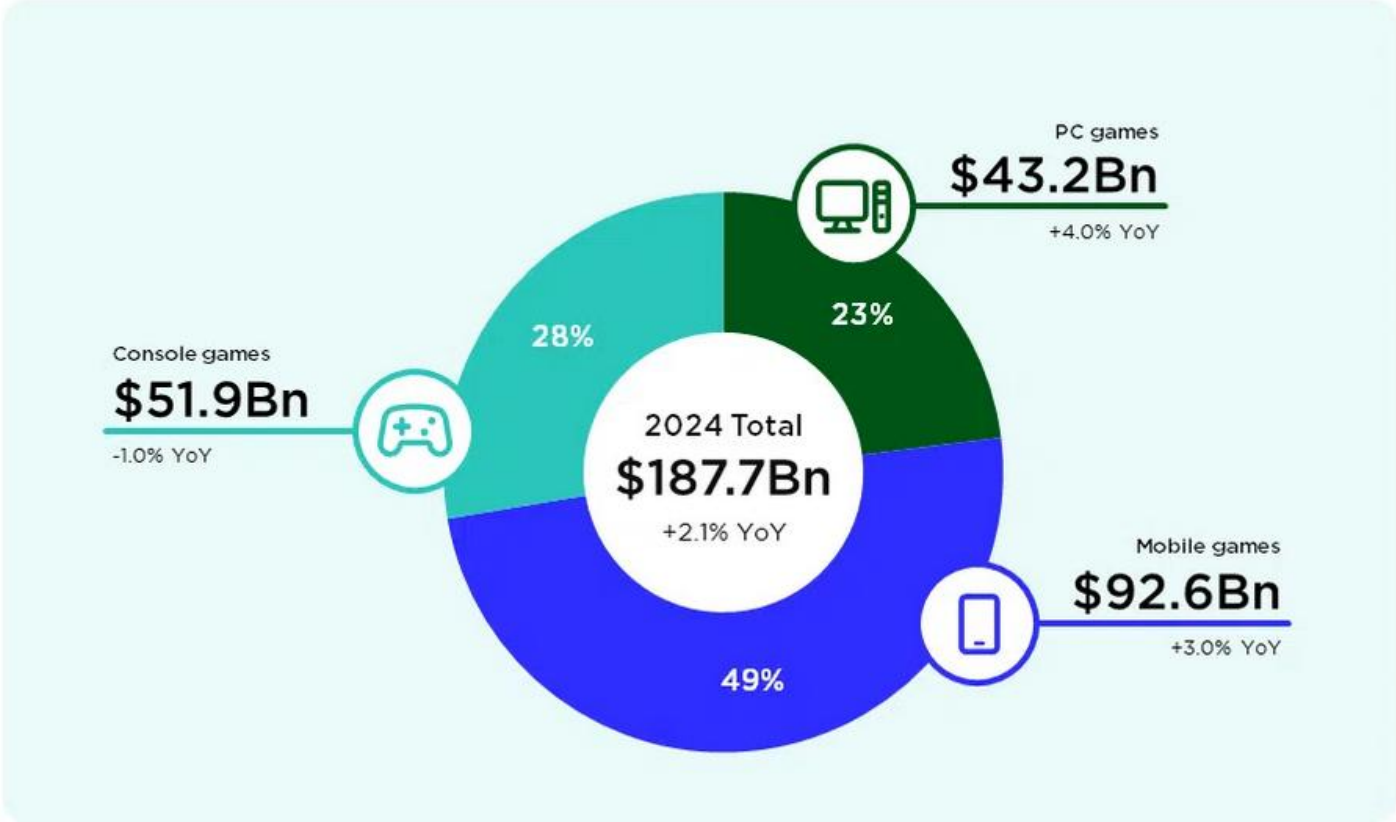
\$92.6Bn

Mobile game revenues account for slightly less than half (49%) of the global market.

Our revenues encompass consumer spending on games: physical and digital full-game copies, in-game spending, and subscription services like Xbox Game Pass. Mobile revenues exclude advertising. Our estimates exclude taxes, secondhand trade or secondary markets, advertising revenues earned in and around games, console and peripheral hardware, B2B services, and the online gambling and betting industry.

Global games market revenues in 2024

Per segment with year-on-year growth rates



\$95.1Bn

PC and Console game revenues will account for slightly more than half (51%) of the global market in 2024.



Our revenues encompass consumer spending on games: physical and digital full-game copies, in-game spending, and subscription services like Xbox Game Pass. Mobile revenues exclude taxes, second-hand trade or secondary markets, advertising revenues earned in and around games, console and peripheral hardware, B2B services, and the online gambling and betting industry.

Source: Newzoo, Games Market Reports and Forecasts, July 2024 | newzoo.com/globalgamesreport

Benefits of games

- Cognitive
- Emotional
- Motivational
- Social
- Healthcare and Education
- and, of course, Entertainment

Social and Cultural Impact

- Communities built around (online) games
 - Activities and events which involve dozens or even hundreds of players
- eSports
 - Competitions with million dollar prize pools
 - Professional gamers are eligible for professional athlete visa in US
 - Large sponsorship deals

LoL World Finals, 2024



IEM Katowice 2023



Game Design in Romania

- In Romania, the game design industry is well established:
 - Ubisoft Romania, Electronic Arts Romania, Gameloft Romania, Amber Studio, Bandai Namco Entertainment Romania, King Games Studio, AMC Pixel Factory.

Course Topics

- Game **Design**, not just programming games
 - Anatomy of a Game
 - Analysis of Games
 - Game Prototyping. Interface Design for Games
 - Game Engine Development
 - 3D Graphics and Rendering
 - Computer Animation and Simulation

Course Topics (contd.)

- Mobile Devices and Game Consoles
- Designing Online Multiplayer Game Environments
- Automatic Opponents
- Level Design. Psychology of Games
- Sound Design for Games
- QA for Games
- Business and Management of Games. Game Design for Business

Game Design References

- Primary
 - Fullerton, T., Game Design Workshop: A Playcentric Approach to Creating Innovative Games, CRC Press, 2014
 - Elias, G. F., Garfield, R. and Gutschera, K. R. Characteristics of Games, MIT Press, 2012
 - Salen, K. and Zimmerman, E. Rules of Play - Game Design Fundamentals, MIT Press, 2004
- Secondary
 - Hiwiler, Z., Players Making Decisions: Game Design Essentials and the Art of Understanding Your Players, New Riders, 2016

Technical References

- Unity Engine

- <https://unity.com/>

- Unreal Engine

- <https://www.unrealengine.com/en-US/>



Unreal vs. Unity

- **3D** – Unreal is best in terms of graphical fidelity.
- **2D** – Unity has a much larger focus and tool-set.
- **Virtual Reality** – Unity has better and more versatile plugins.
- **Augmented Reality** – Unity has much more defined systems.
- **Multiplayer** – Unreal has integrated multiplayer support, Unity does not (yet).
- **Mobile** – Unity is considered the best engine for mobile.


Unreal vs. Unity

- **Unity** uses C#
- **Unreal** uses C++

Evaluation

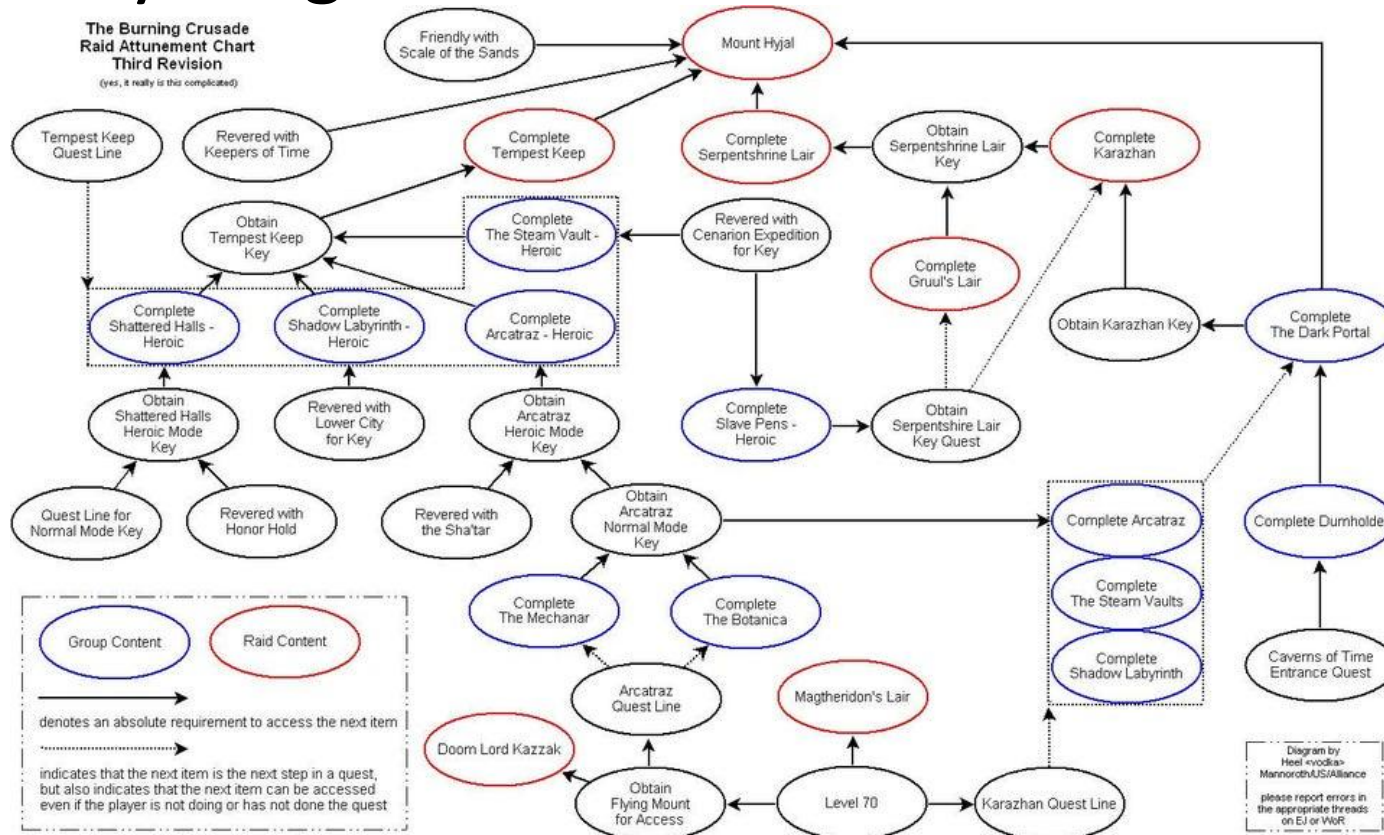
- Objective of the course
 - By the end of the semester, you will be able to design and build a game of average complexity
 - This will be achieved by finalizing a game
 - Teams of 2-4
 - Working prototype by week 8 (40% of grade)
 - Finished product by week 12 (60% of grade)
 - Weekly status reports are mandatory

So, You Want to be a Game Designer?

- What skills do I need to become a Game Designer?
 - it's complicated... 
- What should you learn to become a game designer?
 - EVERYTHING!
 - Game design is the art of crafting experiences

So, You Want to be a Game Designer?

- But not all of us have the time to learn everything that ever was or will be



What Should You Focus on?

- Game design is not about concepts or stories
 - Concepts are common and not very meaningful (e.g. Mario)
 - It is more important to translate concepts into reality
- Game design is about creating systems, mechanics, levels, etc



What Should You Focus on?

- You are the worst judge of your games
 - It'll be great when it's done
 - People just don't understand my genius
- Ability to take criticism and introspection
 - Don't get too attached to your ideas
 - Players design a lot of the game experience



What Should You Focus on?

- Being a player does not make you a designer
- Designers don't play games, they deconstruct them
 - Analyze while playing
 - Find breakpoints
 - Play games you don't like
 - Bad games are a better learning experience than good ones



What Should You Focus on?

- Understand the cost of your decisions
 - When you make a decision, you are asking the team to do work
 - Time and money
 - Ensure you make the most of your resources
 - Poor sense of scope is the most common cause for game failure
- No game is ever done!
 - A game is only a game if it is played

What Should You Focus on?

- Practical skills (abridged)
 - Technical writing
 - Logic
 - Some Psychology
 - Mathematics
 - Knowledge of literature, mythology and philosophy
 - Knowledge of world religions
 - Understanding of art principles
 - Basic audio design and music

What Should You Focus on?

- Practical skills (abridged)
 - Basic graphic design
 - Know a lot of games
 - And some CS specific skills like programming, scripting and computer architecture
 - **Build games**

Onward, to the Anatomy of Games!