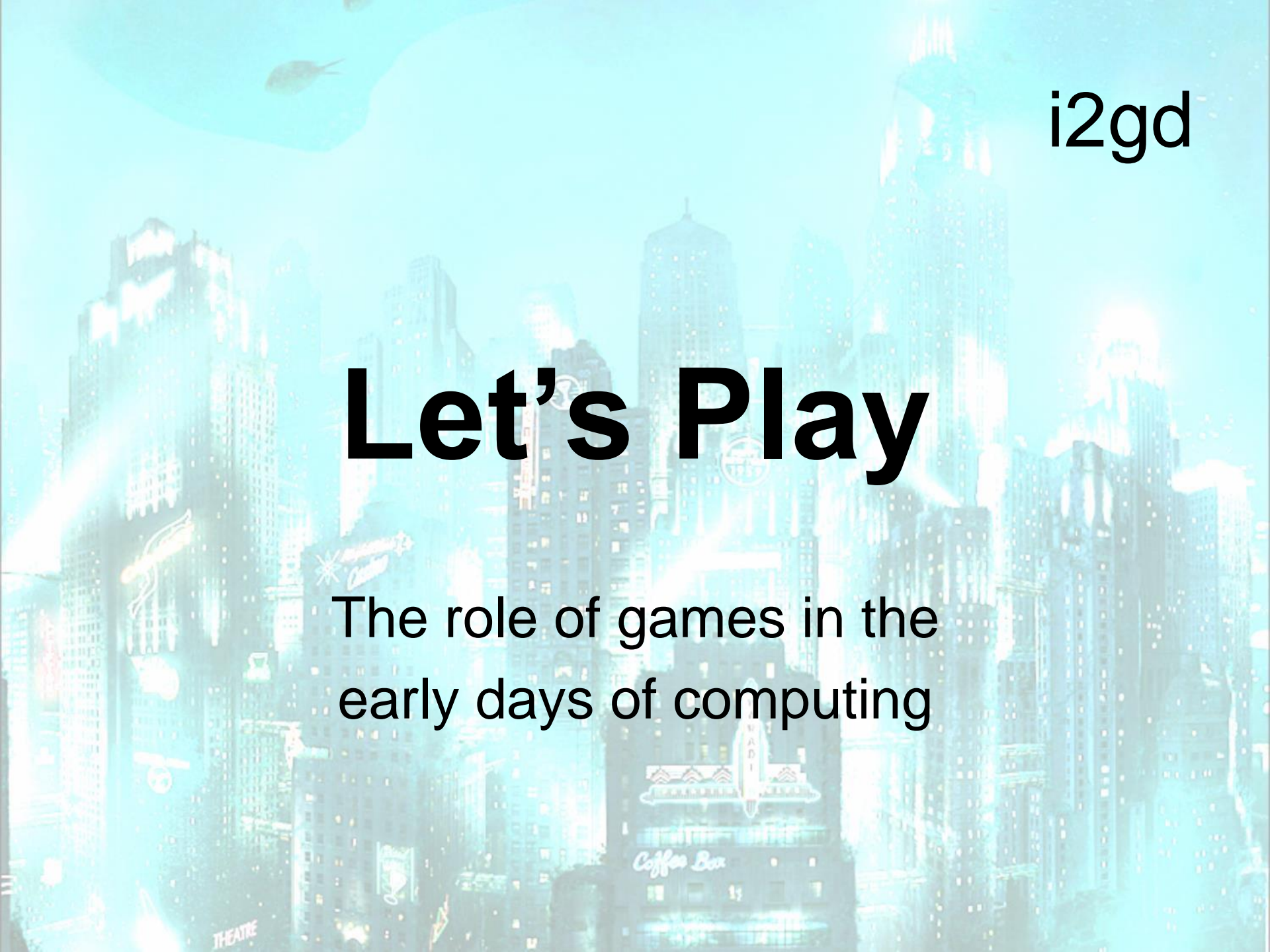




Introduction to Game Development

Lecture 2



i2gd

Let's Play

The role of games in the
early days of computing

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1940s

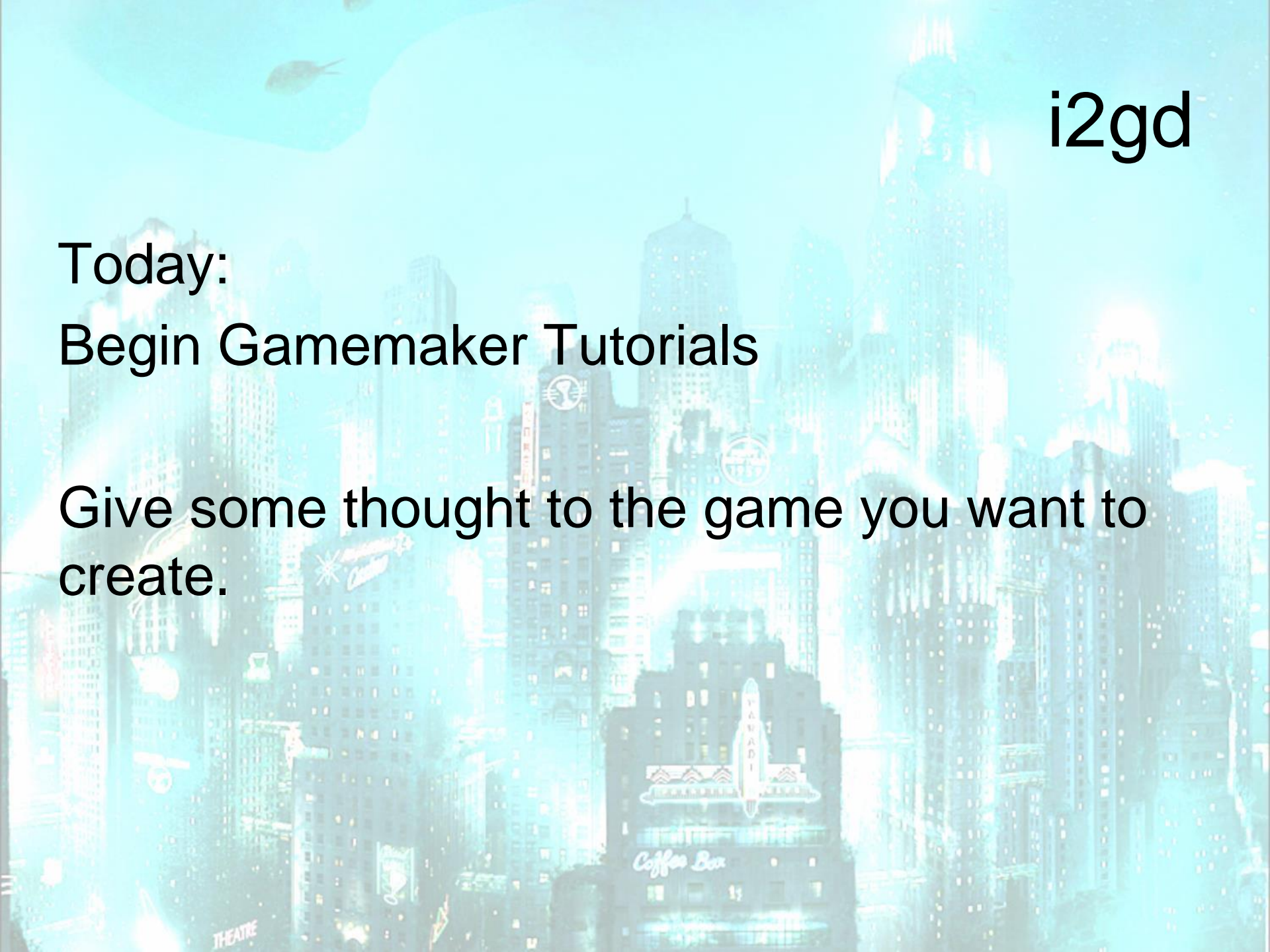


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ENIAC

(Electronic Numeric Integrator and Calculator)





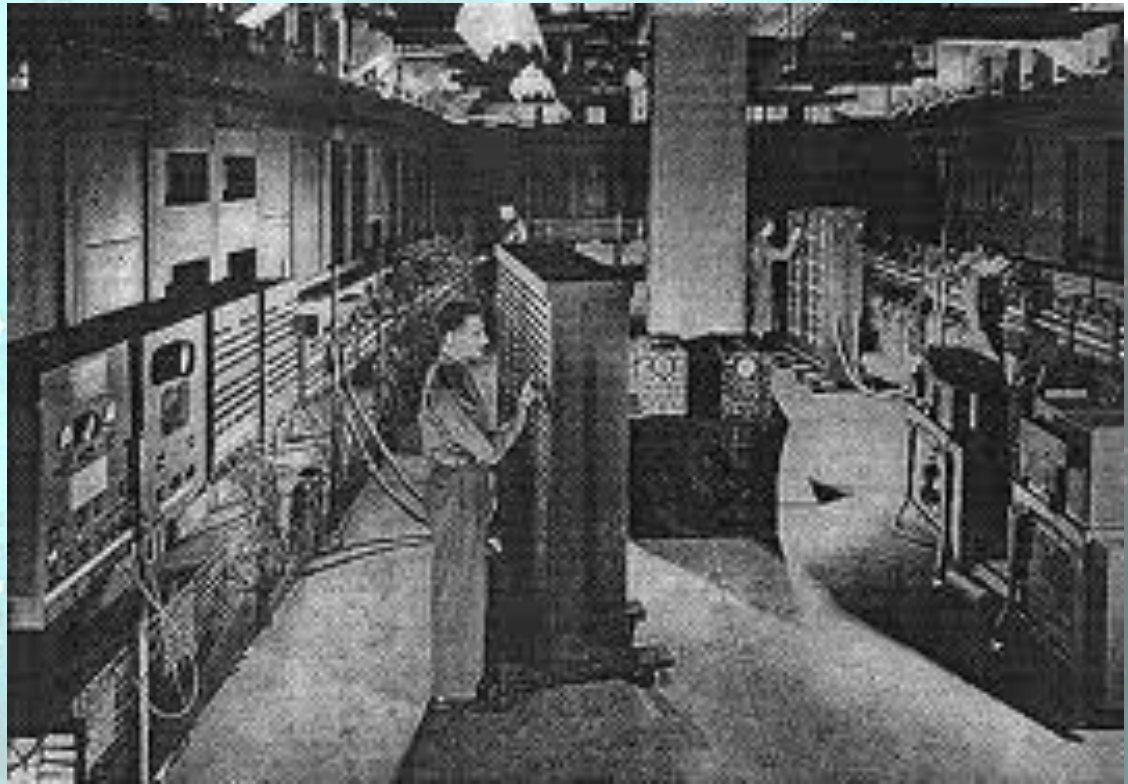
i2gd

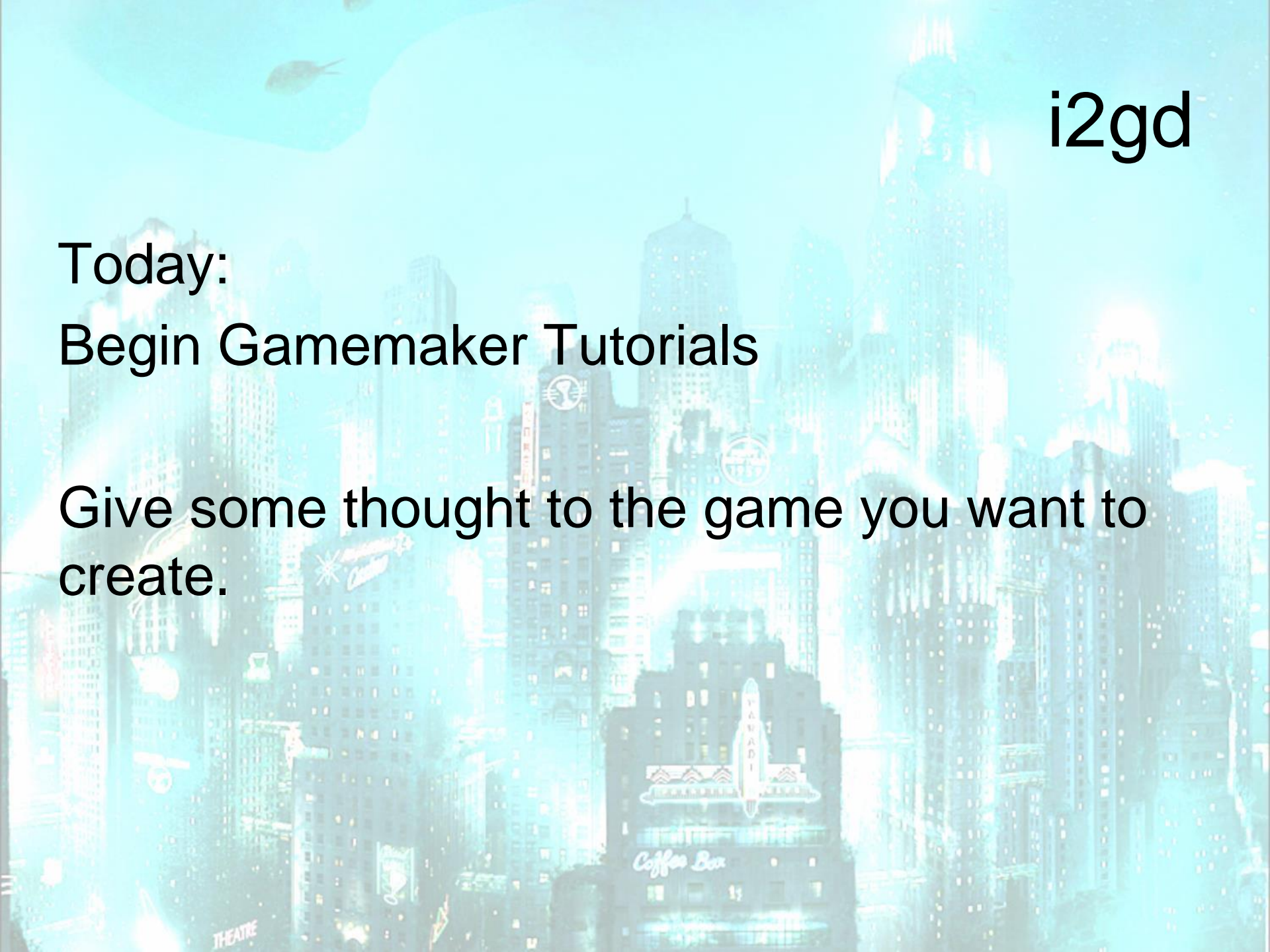
- 14th February 1946
- University of Pennsylvania
- First Programmable Computer
- Three years to build
- \$500,000 (>\$6bn today)
- Funded by US military
- 30 tons
- 63m² floor space

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Press called Eniac “a great brain”

Very apt as
Computer
Scientists
sought to
develop
Artificial
Intelligence





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Alan Turing (UK)

Claude Shannon (USA)

Met working on
Enigma in WW2

Goal: create a chess playing computer which
would defeat a Grand Master

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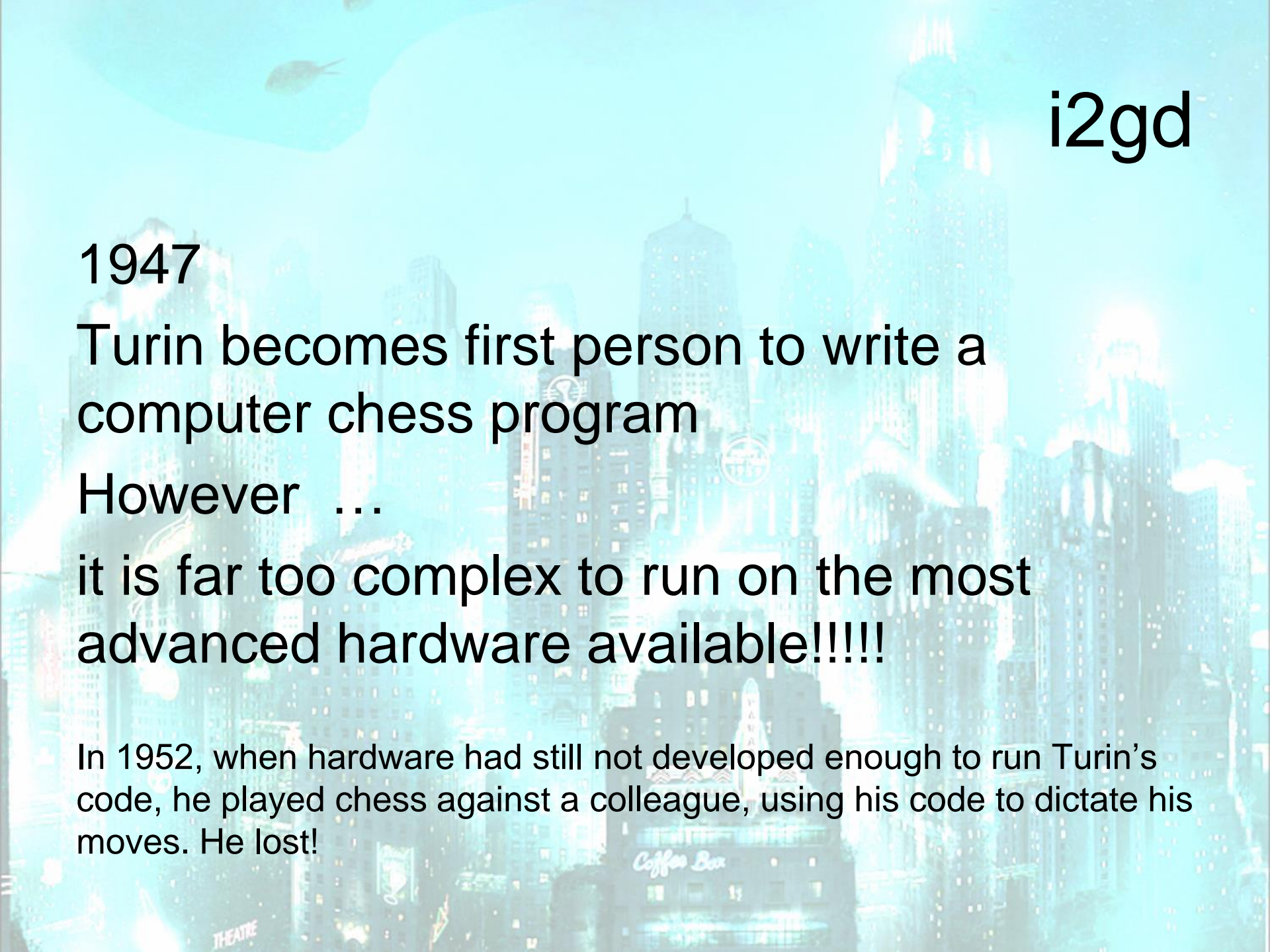


Claude Shannon (USA)



Met working on
Enigma in WW2

Goal: create a chess playing computer which
would defeat a Grand Master



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1947

Turin becomes first person to write a computer chess program

However ...

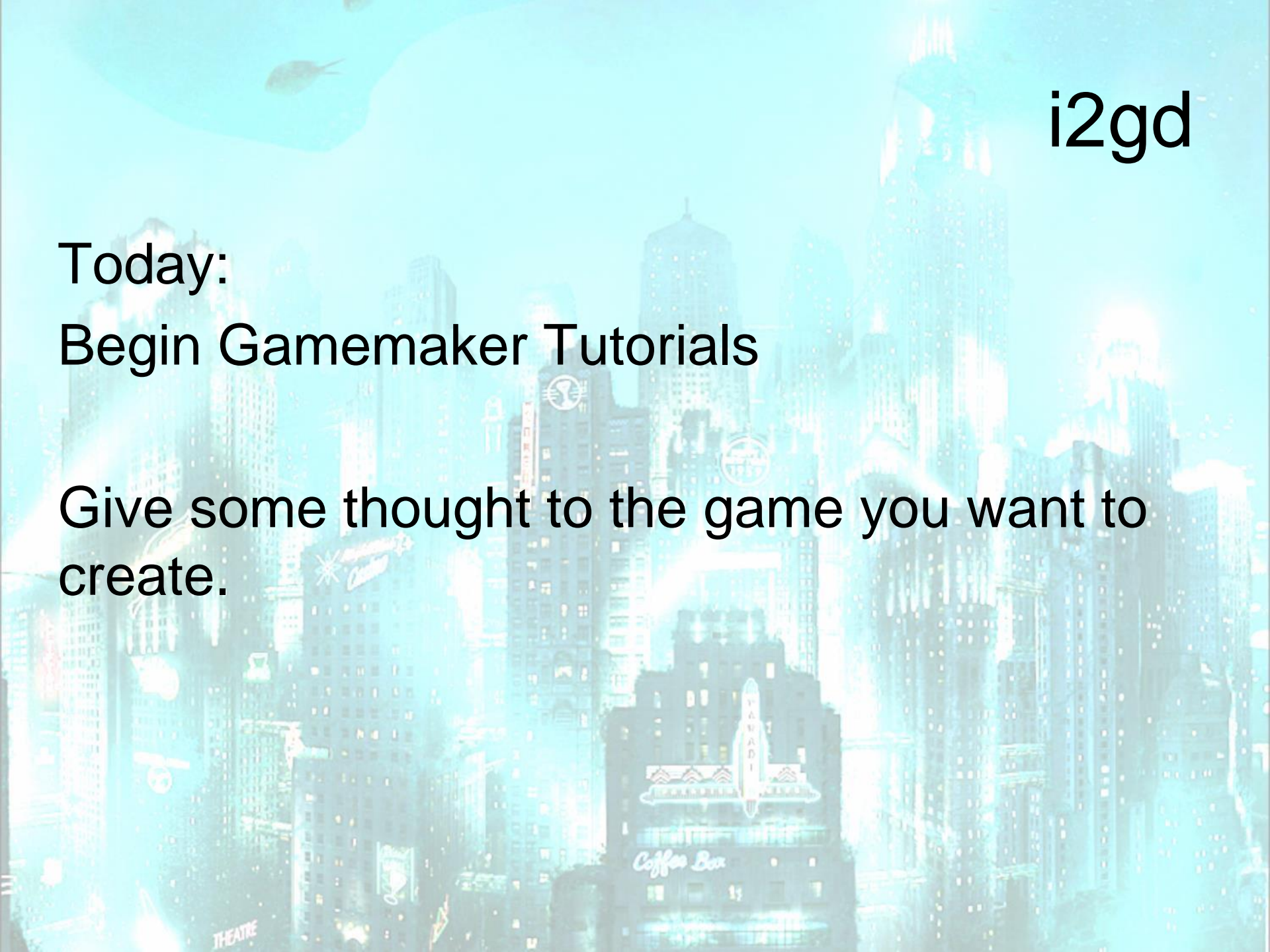
it is far too complex to run on the most advanced hardware available!!!!

In 1952, when hardware had still not developed enough to run Turin's code, he played chess against a colleague, using his code to dictate his moves. He lost!



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1950s



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1951

The Festival of Britain

- Boost national morale after World War 2

i2gd

1951

The Festival of Britain

- Boost national morale after World War 2



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1951

The Festival of Britain

- Boost national morale after World War 2



Video: click [here](#)

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Incl **Exhibition of Science**
British computer company
Ferranti agree to participate

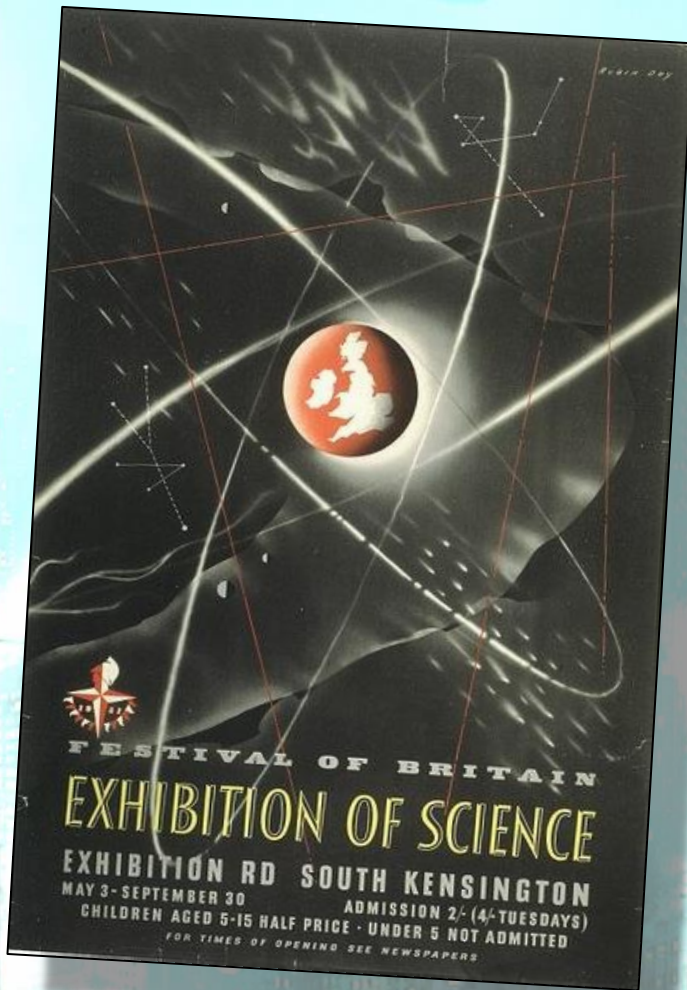
- 2 weeks before opening,
Ferranti had no exhibit!
- Engineer John Bennett
came to the rescue

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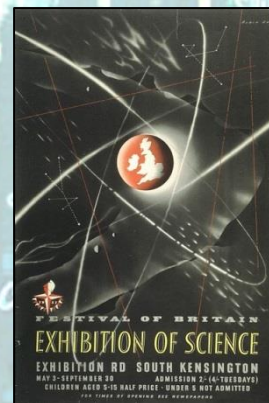
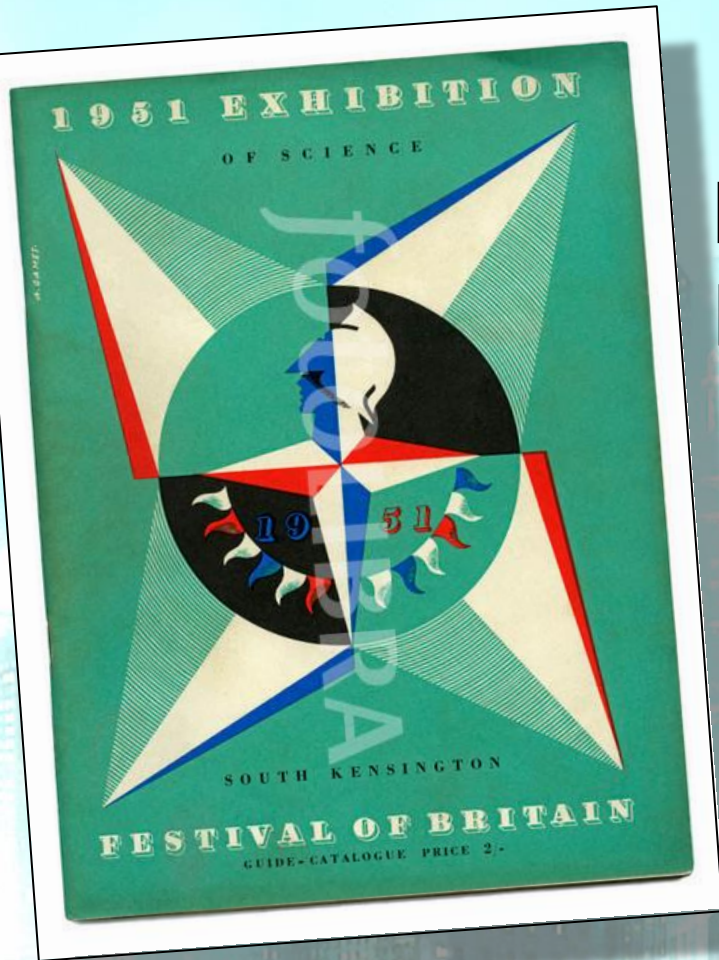
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i2gd

Incl **Exhibition of Science** British electronics company Ferranti agree to participate

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Nim

- A two player mathematical strategy game where players remove matches from bundles, and avoid taking the last match

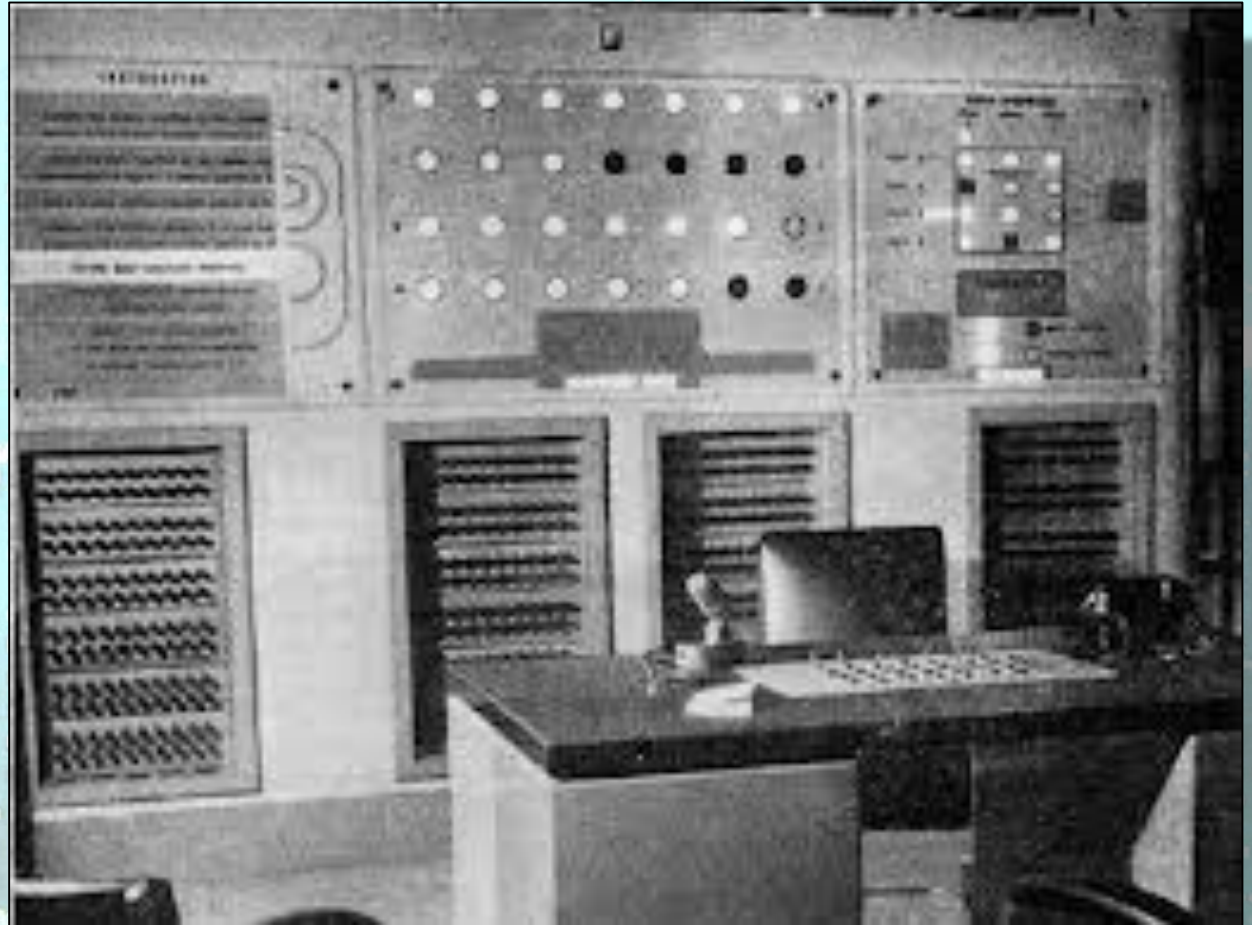
Nimrod

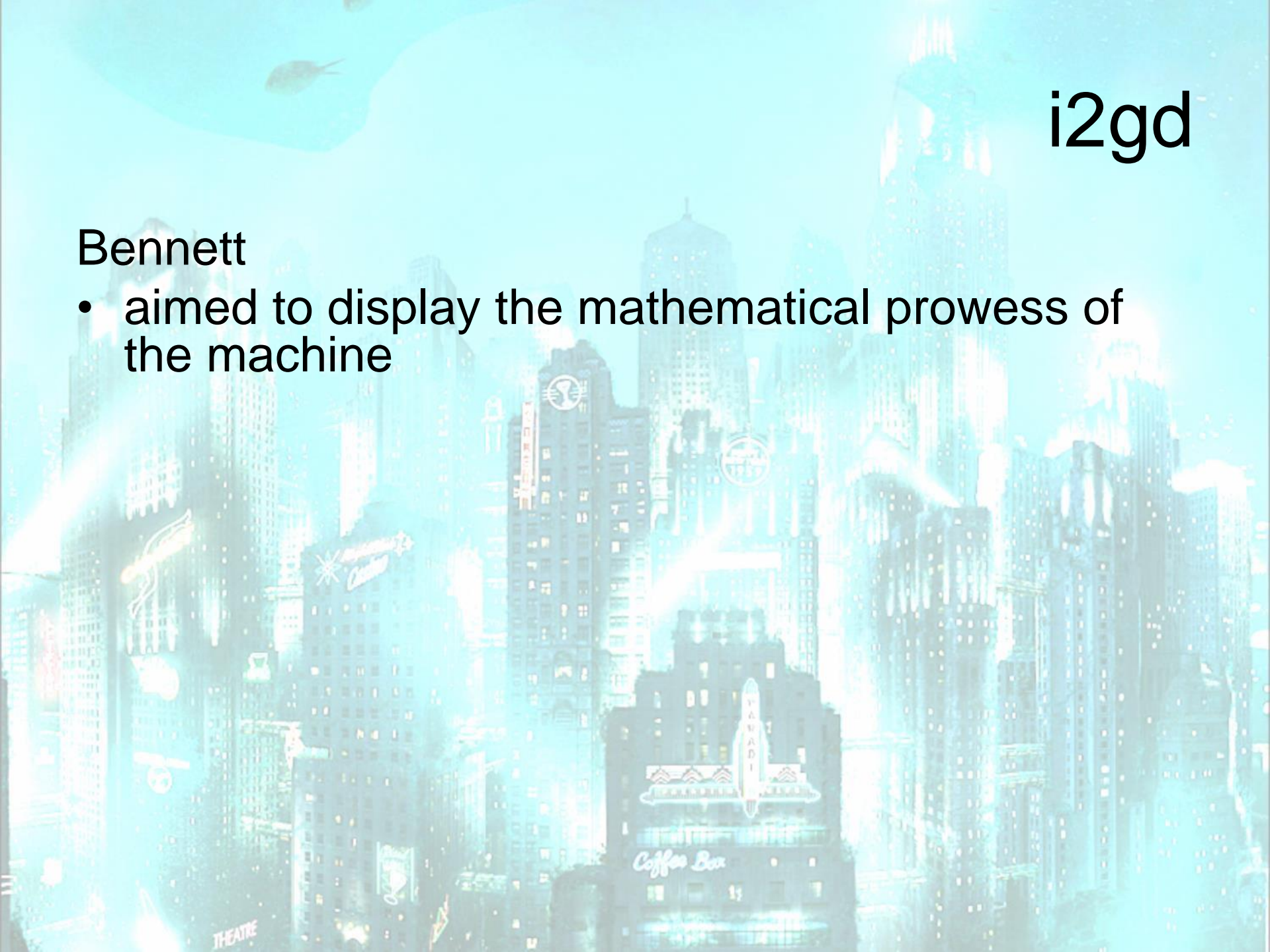
- In a short time Ferranti created a computer to play Nim against a human opponent

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Nimrod

- 12ft wide
- 5ft deep
- 9ft high





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Bennett

- aimed to display the mathematical prowess of the machine

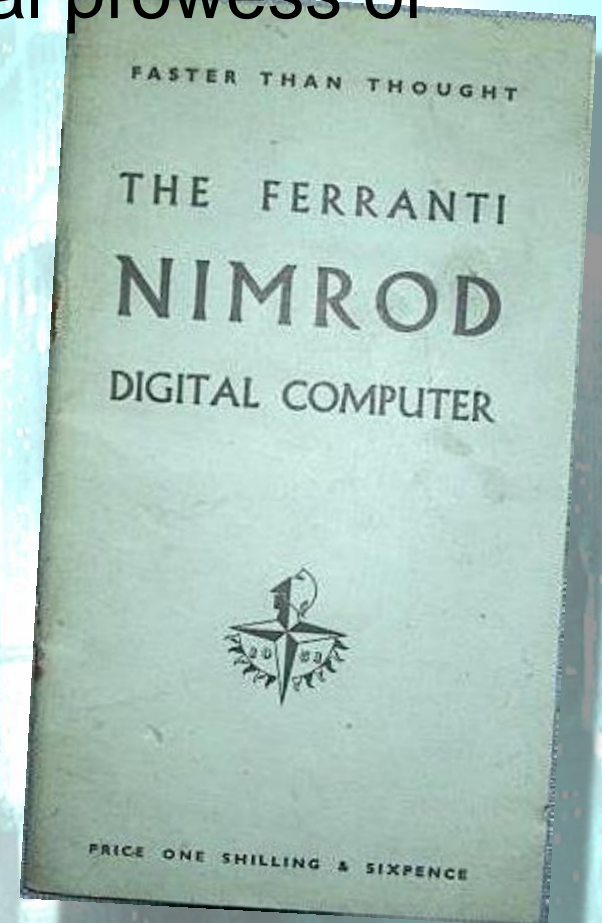
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Bennett

- aimed to display the mathematical prowess of the machine

Press

- “faster than thought”



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Bennett

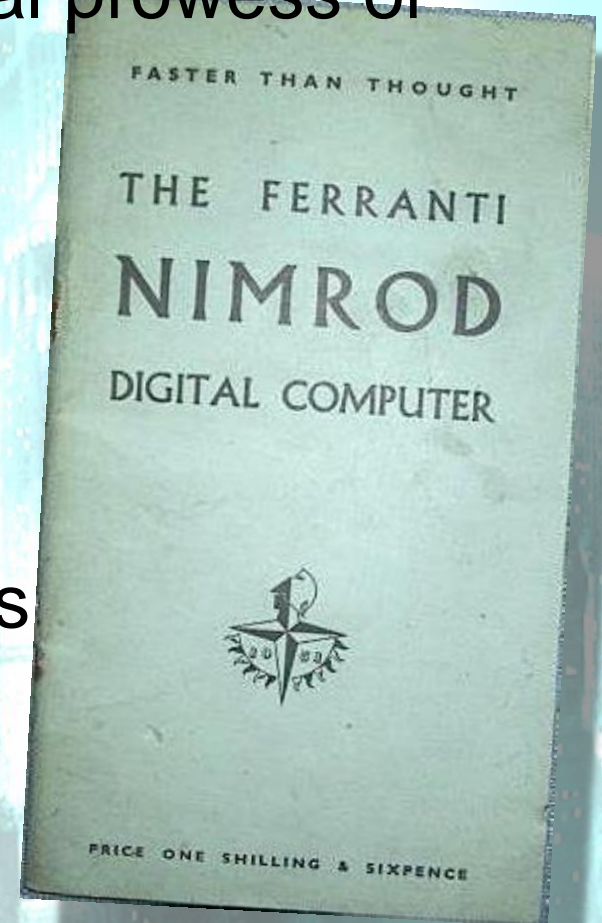
- aimed to display the mathematical prowess of the machine

Press

- “faster than thought”

Public

- not interested in science or maths
- wanted to play game!!





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After Festival of Britain

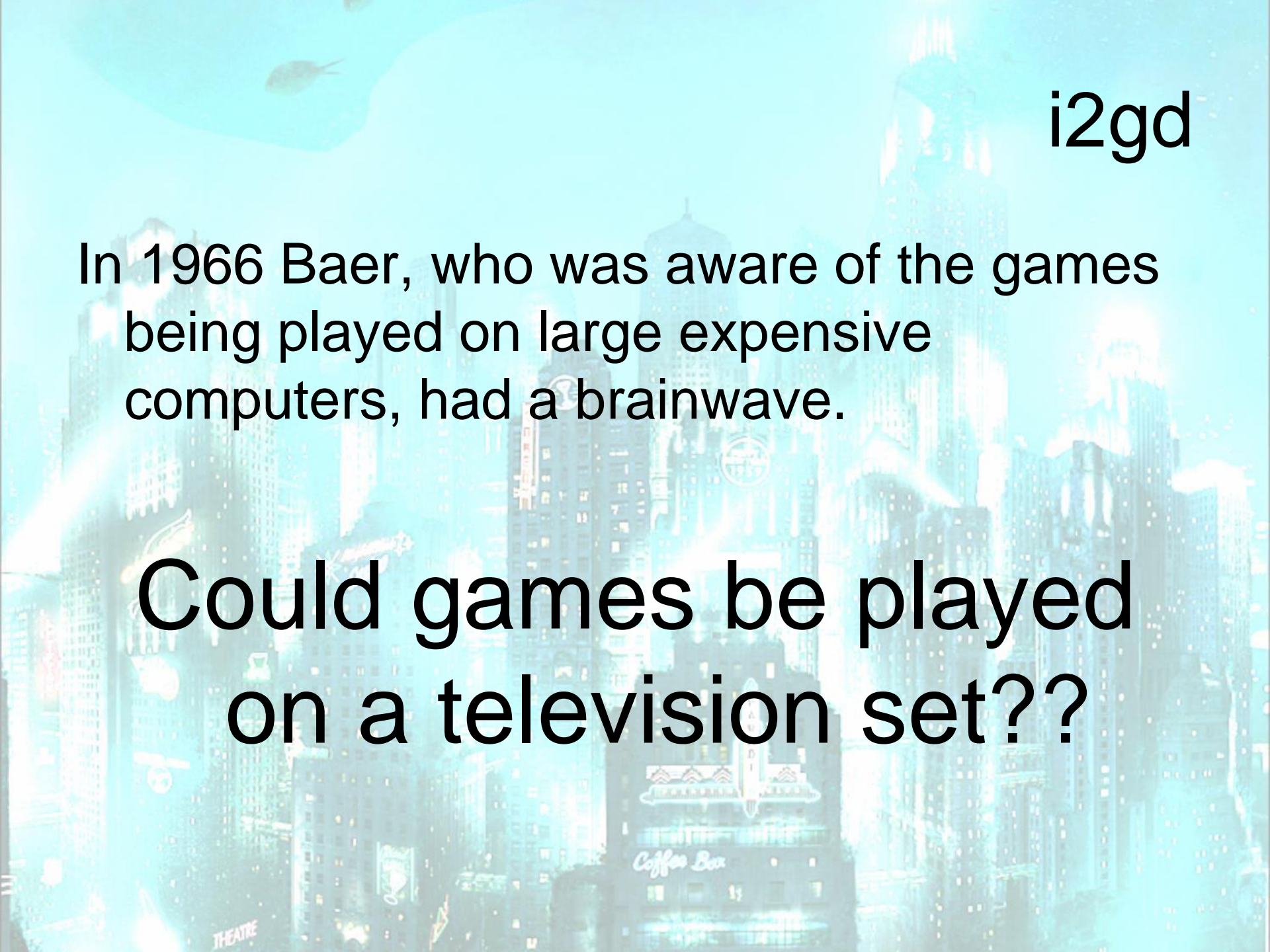
- Nimrod exhibited in West Germany
- German crowds flock to see it
- German Economics minister plays against Nimrod (and loses!)
- Nimrod is dismantled
- Ferranti concentrate on “serious” business

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EDSAC

(Electronic Delay Storage Automatic Calculator)





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- Completed 1949
- University of Cambridge, England
- First computer with RAM
- Built by Prof Maurice Wilkes
- Wilkes had been tutor of John Bennett!!
- Wilkes also tutored Alexander Douglas
 - Created Noughts and Crosses program
 - PhD thesis
 - Immediately forgotten afterwards

In USA

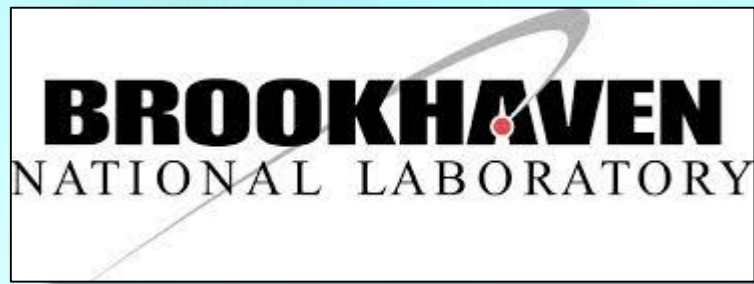
- Checkers (i.e. Draughts)
- IBM's Art Samuel creates Checkers game
- Research NOT entertainment
- Completed first game in 1952
- In 1955 created a game which could learn from its mistakes – adding 15% to the value of IBM's shares overnight!
- In 1961 Samuel's program defeated US Champion



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Brookhaven National Laboratories





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Open Day 1958

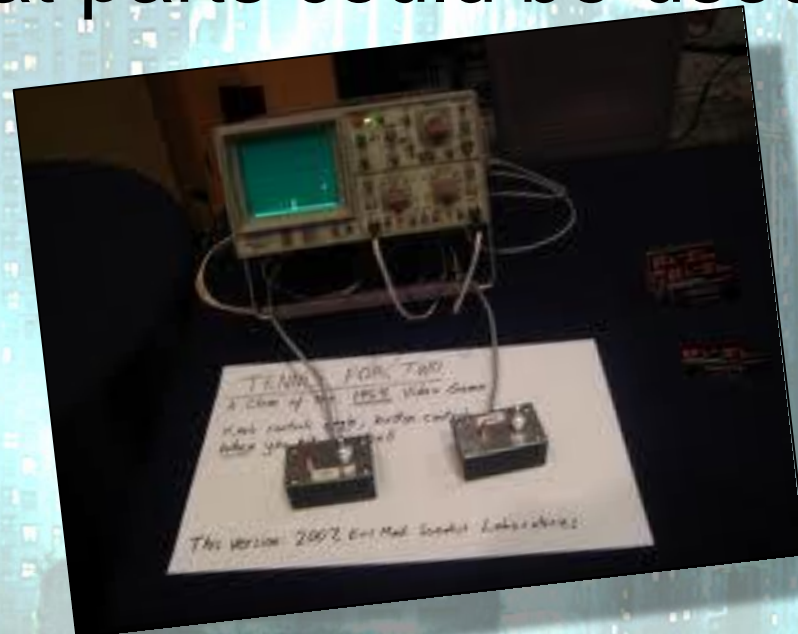
Using an oscilloscope and two controllers, William Higginbotham and Robert Dvorak created
“Tennis For Two”




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Tennis For Two

- Caused a stir at the Open Day
- Particularly popular with High-schoolers
- Used again at 1959 Open Day
- Dismantled so that parts could be used for serious work!





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1960s

tmrc

The Tech Model Railroad Club of MIT



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Tech Model Railroad Club

- Student Club at MIT
- Built elaborate railroad models
- Members also interested in Sci-Fi



tmrc

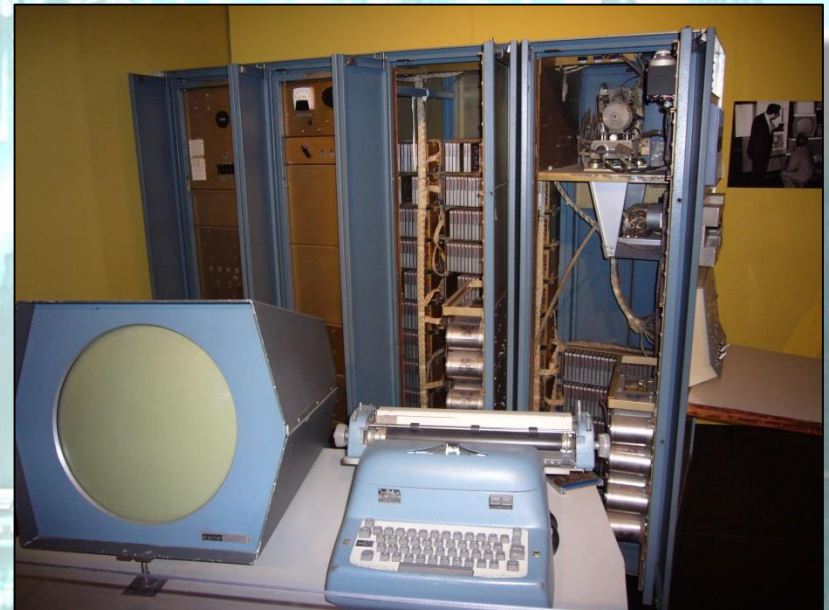
The Tech Model Railroad Club of MIT



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Tech Model Railroad Club

- Very fun attitude to computing
 - Robert Wagner's *Expensive Desk Calculator*
 - Used MIT's \$3m TX-0 computer to create it
 - His Professor gave him a mark of zero as punishment





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Tech Model Railroad Club

- As MIT prepared to install a new state-of-the-art PDP-1 computer costing \$120,000
- TMRC tried to decide how “best” to use it!!!
- They decided on a game ..
- ... involving spaceships!
- They called it **Spacewar!**



tmrc

The Tech Model Railroad Club of MIT



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Spacewar!

- Completed late 1961
- Two player duel in space
- Used another zero-marked project
“*Expensive Planetarium*”
as background
- Very popular with MIT students



tmrc

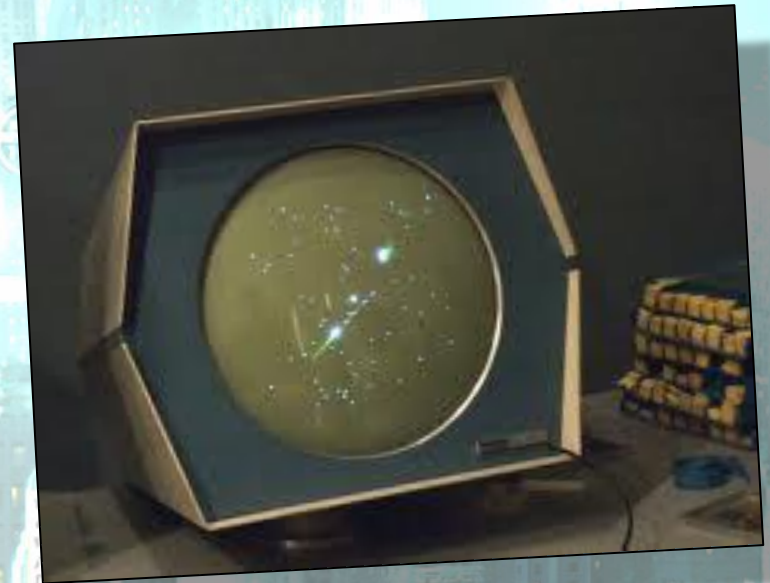
The Tech Model Railroad Club of MIT



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Spacewar!

- TMRC considered selling the game
- However, it required a very expensive computer to play it.
- Therefore, they gave it away for free!



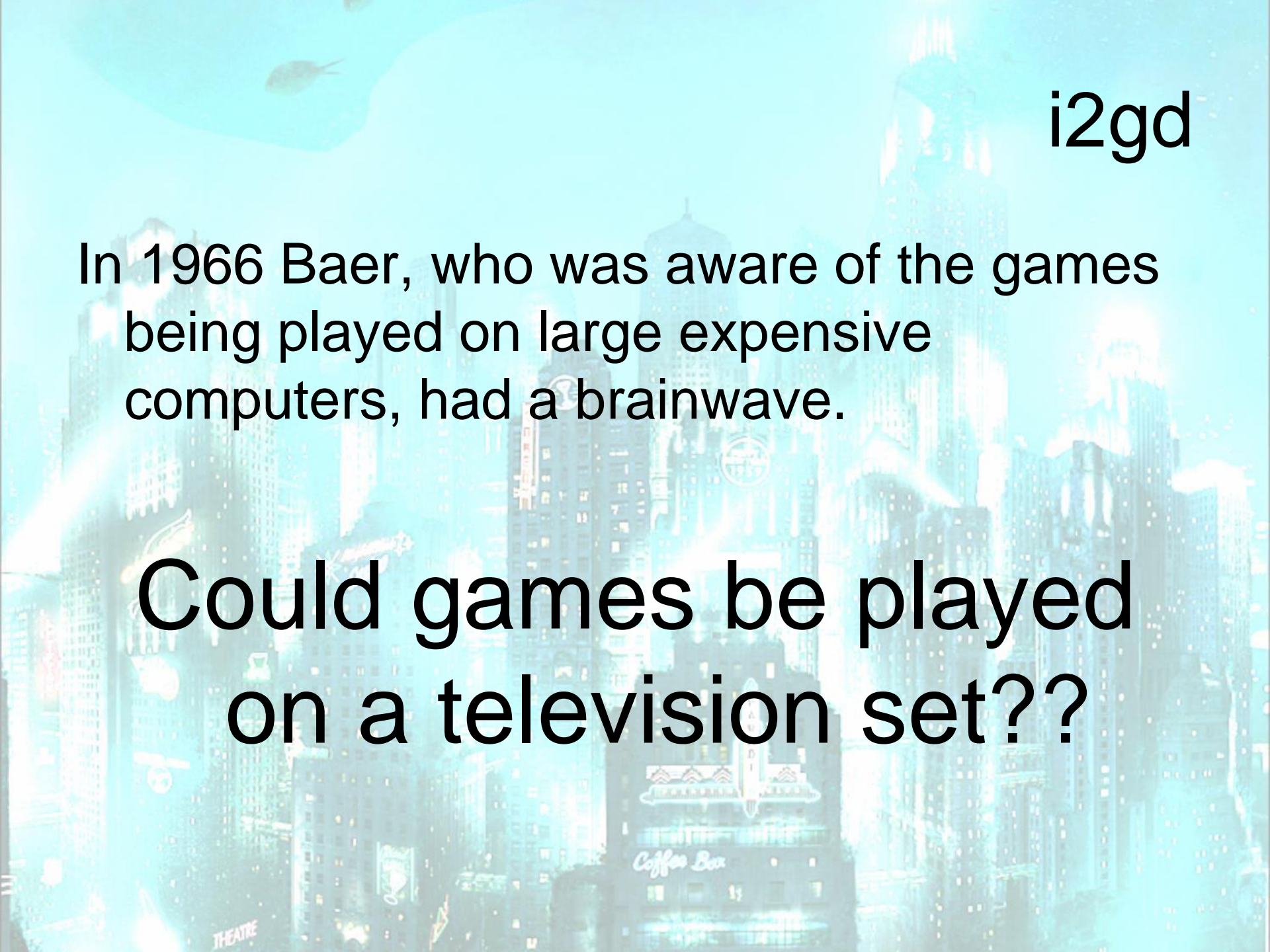
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Ralph Baer

In 1951, while working for a military contractor, Baer was building TV sets.

He noticed that he could control the colours of lines on the screen.

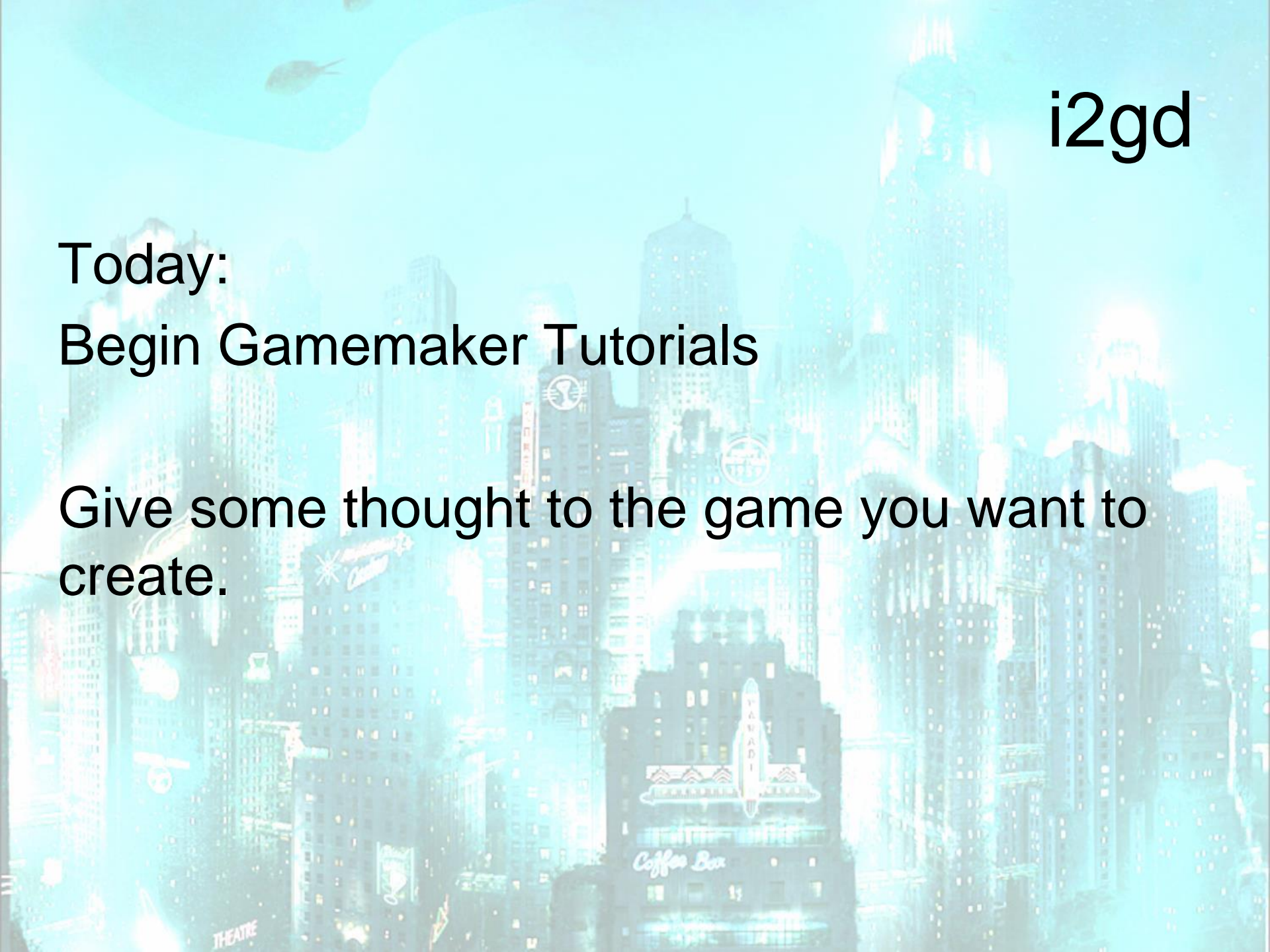




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In 1966 Baer, who was aware of the games being played on large expensive computers, had a brainwave.

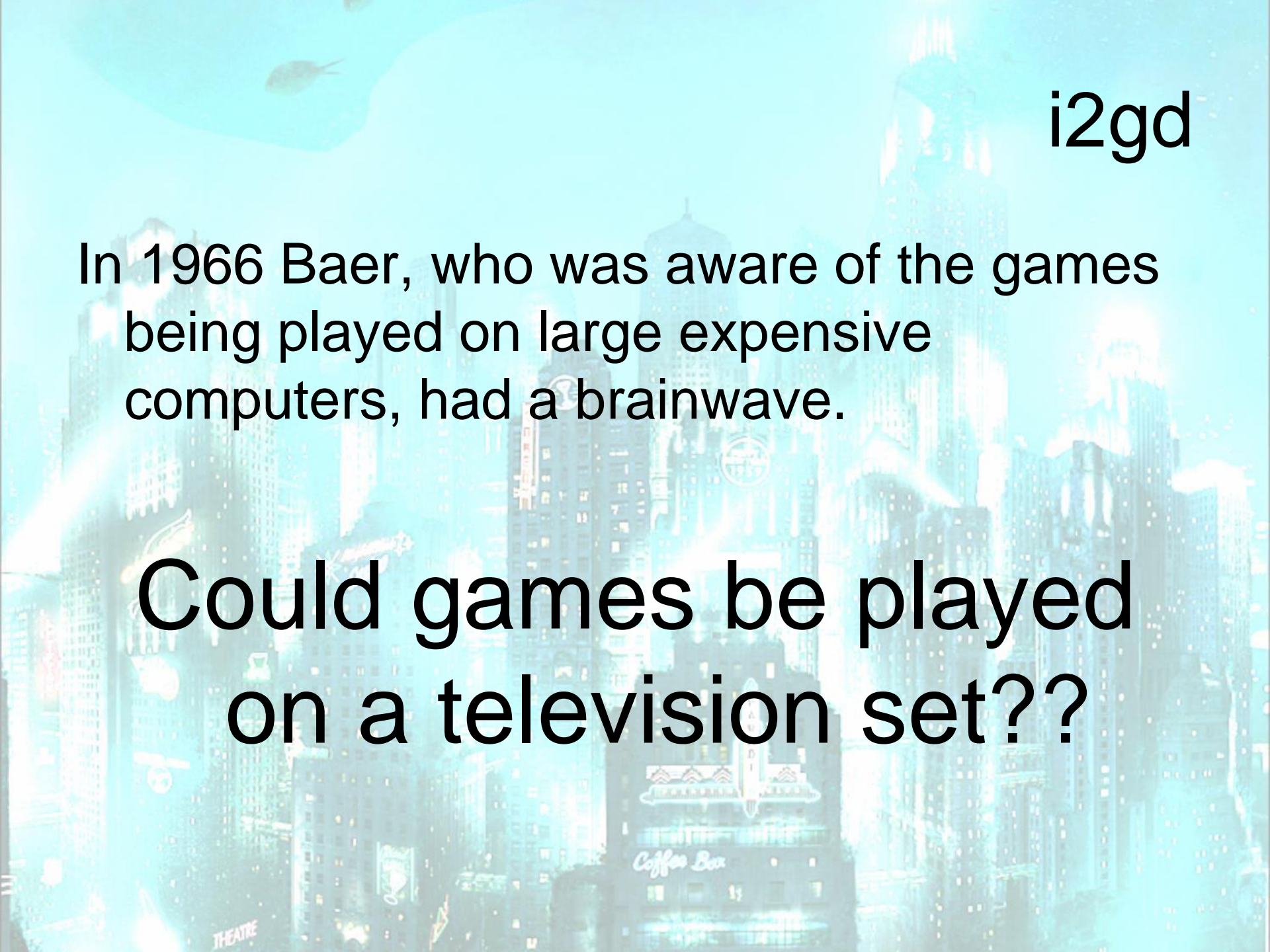
Could games be played
on a television set??



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In order to investigate this in his employers time, and with their resources, he gave it a military sounding codename

He called it **Channel LP**



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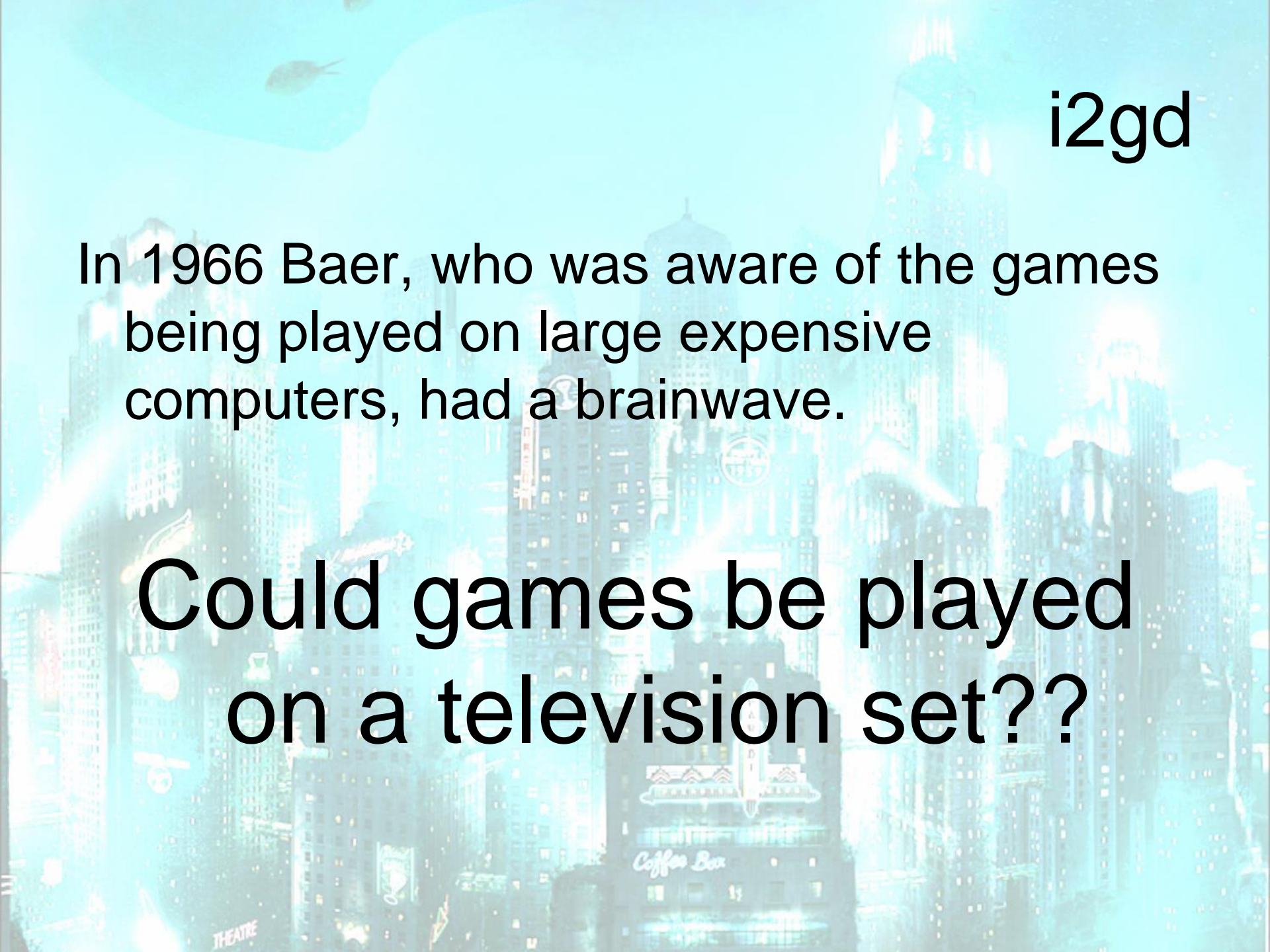
He called it **Channel LP**

LP for Let's Play!!

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He commandeered a room.
He acquired a technician.
By 1967 they had
a working machine
and
a prototype of a
ping-pong game



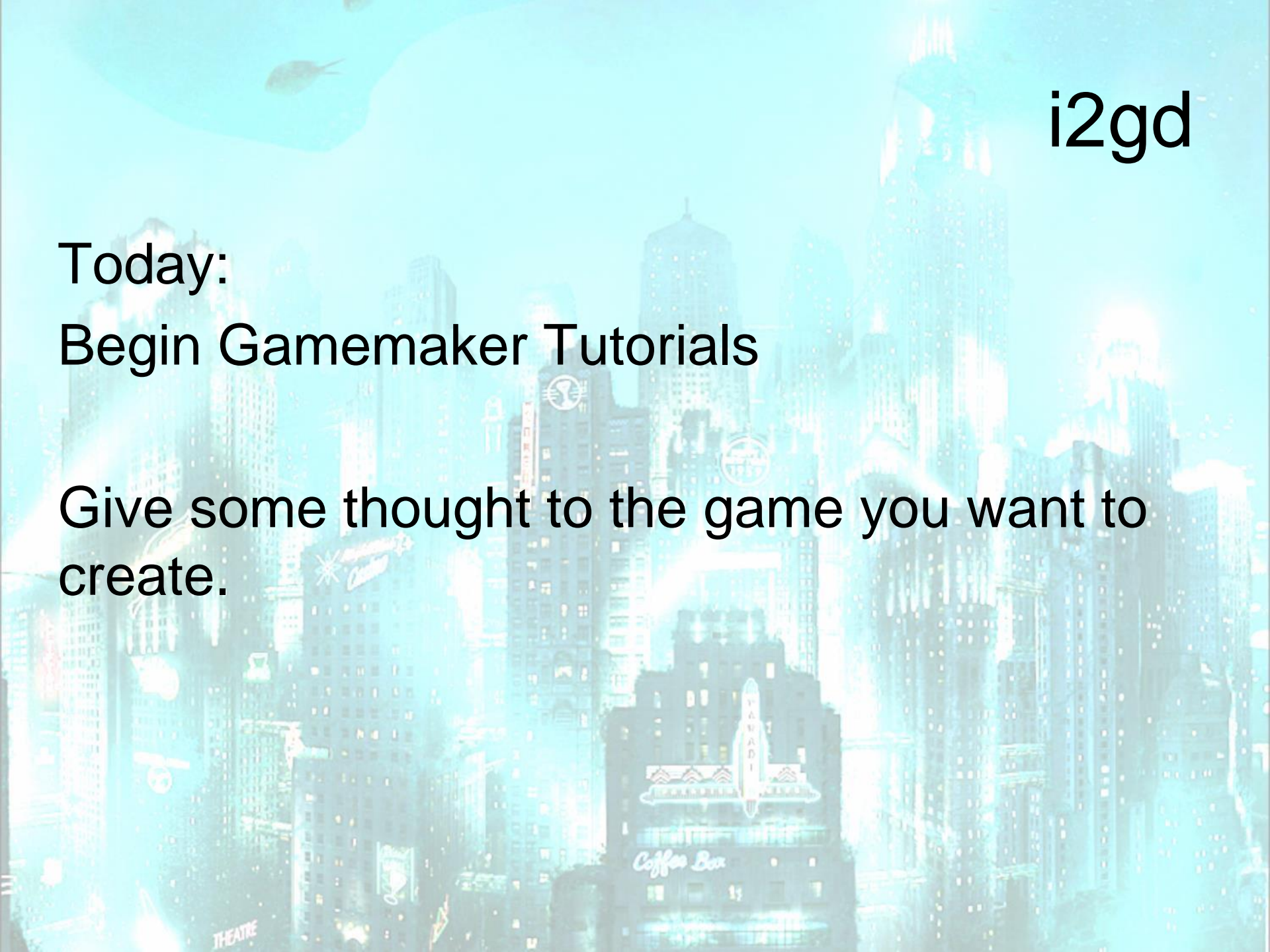


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After decades of games being merely a vehicle for testing computers, TMRC, Ralph Baer and others began creating games which were meant to be enjoyed for their own sake.

Next Lecture:

We'll meet some people we know and see some games we've played!



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Today:
Begin Gamemaker Tutorials

Give some thought to the game you want to create.