

HOUSING HUSTLERS

TEAM 6

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40.012 MANUFACTURING AND SERVICE OPERATIONS

40.014 ENGINEERING SYSTEMS ARCHITECTURE

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HOUSING HUSTLERS

A fun and interactive urban
planning game made to educate all
Singaporeans on resource
allocation & opportunity costs

MSO PROBLEM STATEMENT

How might we **allocate resources**
efficiently in land-scarce
Singapore where HDB leases are
fast approaching expiration?

RESOURCE ALLOCATION

"Resource allocation for countries is the process of determining how to distribute scarce resources among competing needs and priorities in order to achieve development objectives. It involves assessing the costs and benefits of alternative investments, considering the trade-offs between efficiency and equity, and balancing the interests of different stakeholders."

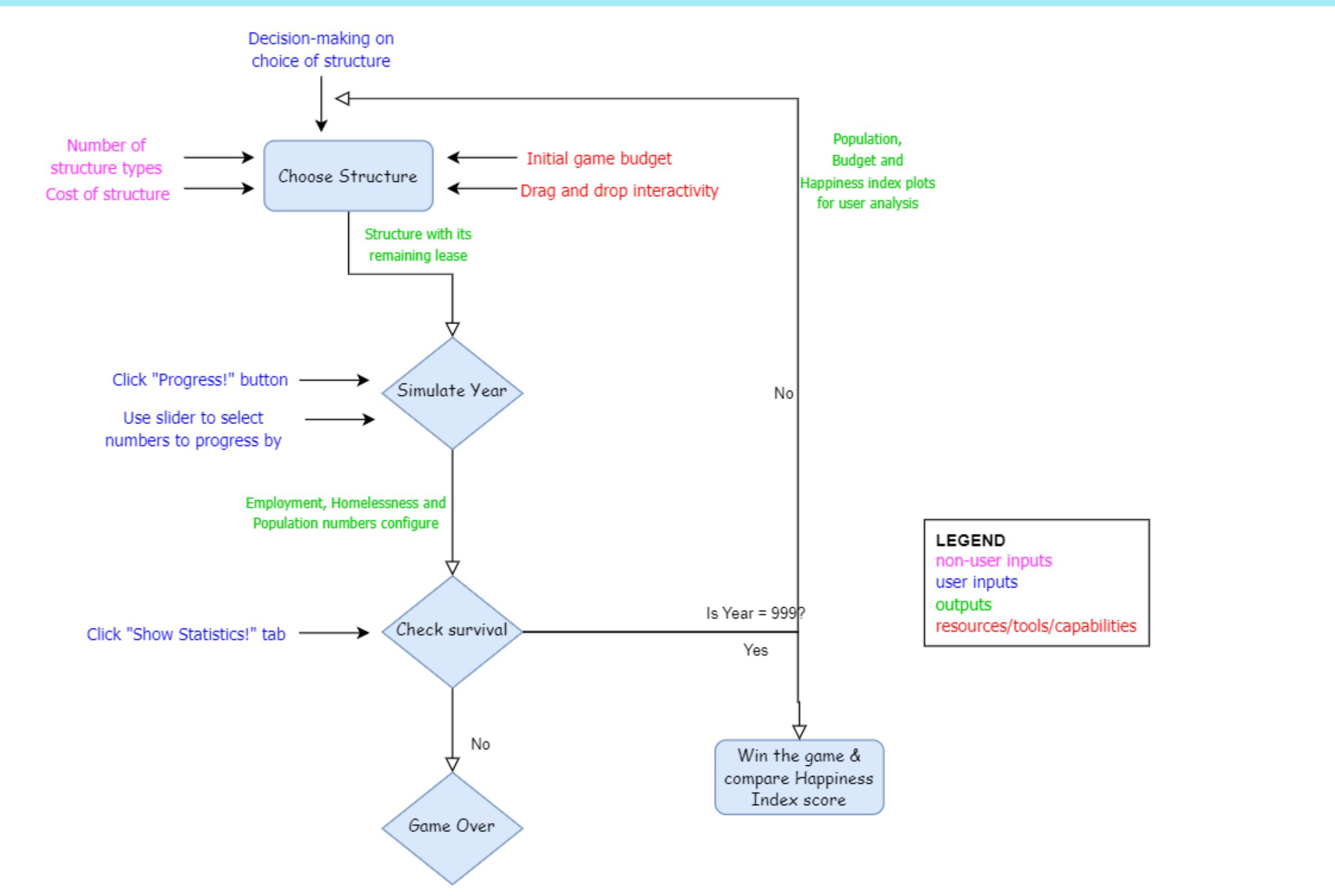
Little, I. M. D., & Mirrlees, J. A. (1974). Planning and resource allocation in developing countries. Oxford University Press.

OPPORTUNITY COST

"Opportunity cost is the **value of what you lose when choosing between two or more options.**"

O'Donnell, R. (2009). The Concept of Opportunity Cost. *_Australasian Journal of Economics Education_, 6(1), 7-24.*

iDEFO (GAME FLOW)



The background features a tropical scene with a thatched hut on the left, green trees on both sides, and a range of green mountains in the distance under a blue sky with white clouds.

**ARE YOU
READY?**

GAME RULES

1. Players have an initial budget of \$1,000,000
2. Players have to maximize citizens' happiness
3. Game is over after 999 years/ happiness reaches zero/ budget reaches zero

HOUSING HUSTLERS!

[Game Play](#) [Show Statistics!](#)

Info

10000

Budget

0

Employment

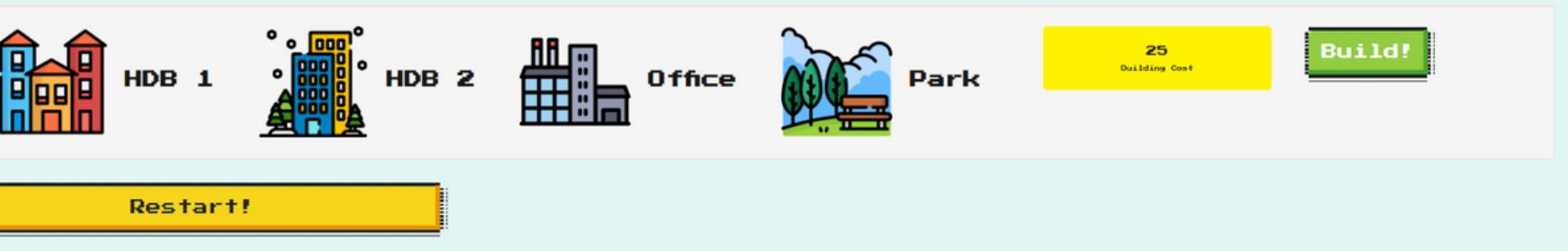
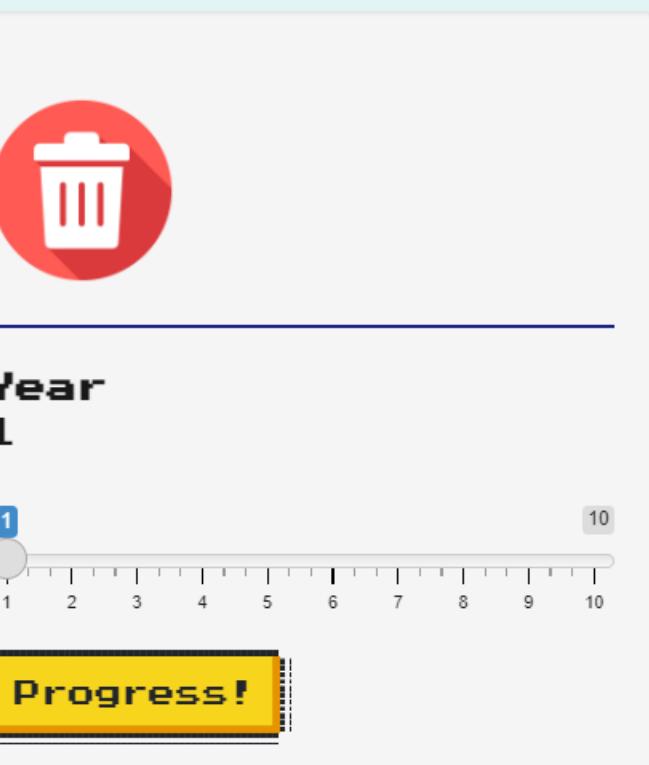
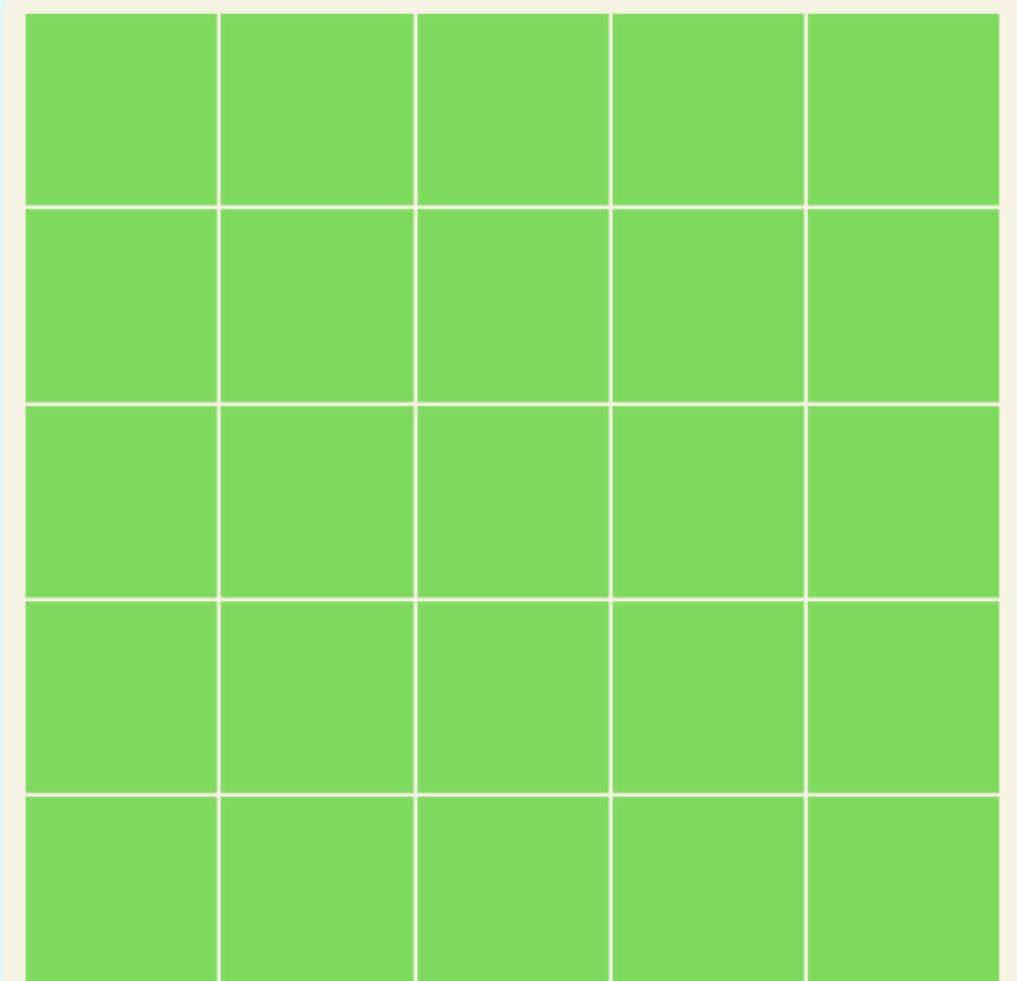
0

Homelessness

10

Population

GAME SCREEN LAYOUT



INFORMATION SHEET

	BUILD! PRICE	TIME (years)	DEMOLISH! PRICE	TIME (years)
HDB 1	\$ 10,000	3	\$ 10,000	3
HDB 2	\$ 50,000	5	\$ 50,000	3
Office	\$ 500,000	1	\$ 500,000	2
Park	\$ 100,000	2	\$ 100,000	2

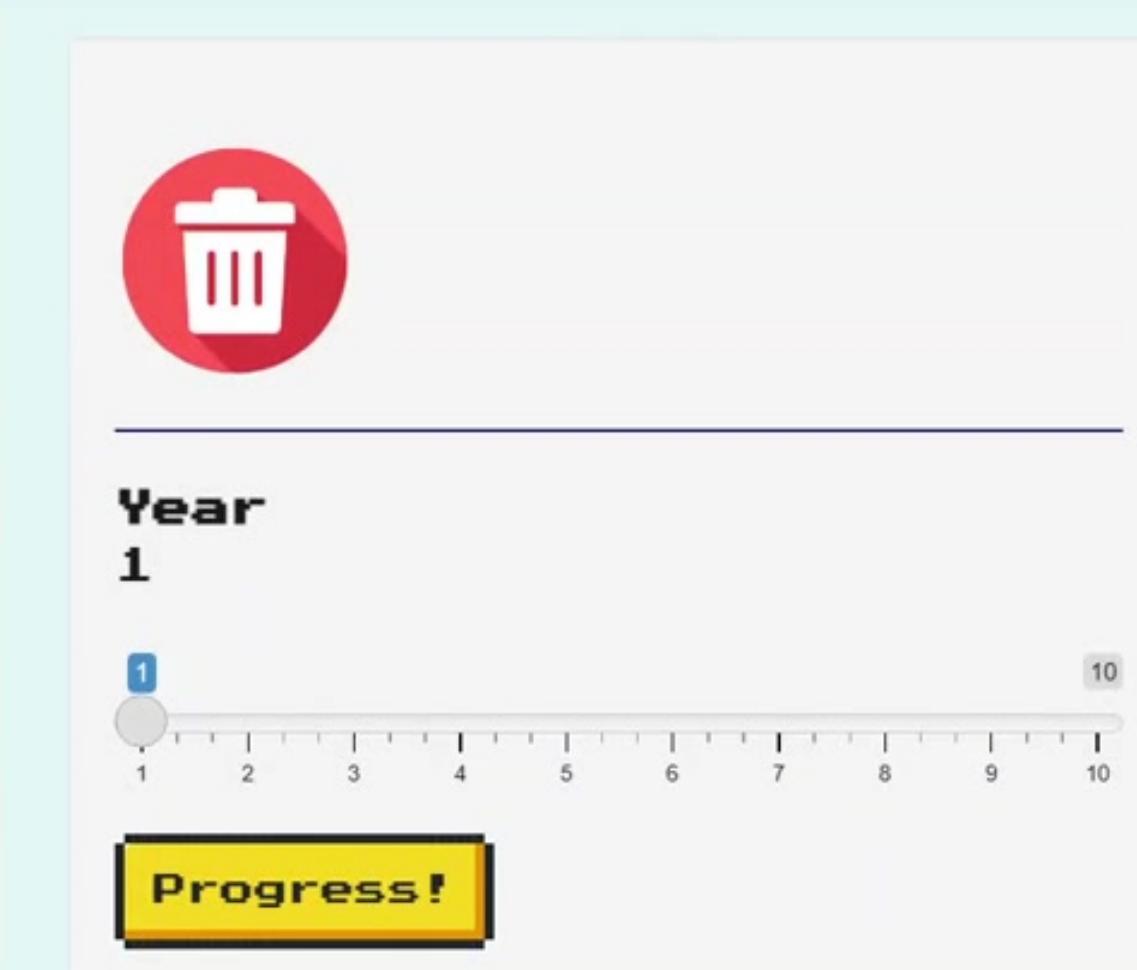
BUILD

- Drag & drop structure on the grid
- Check the total construction cost and click 'build' to confirm



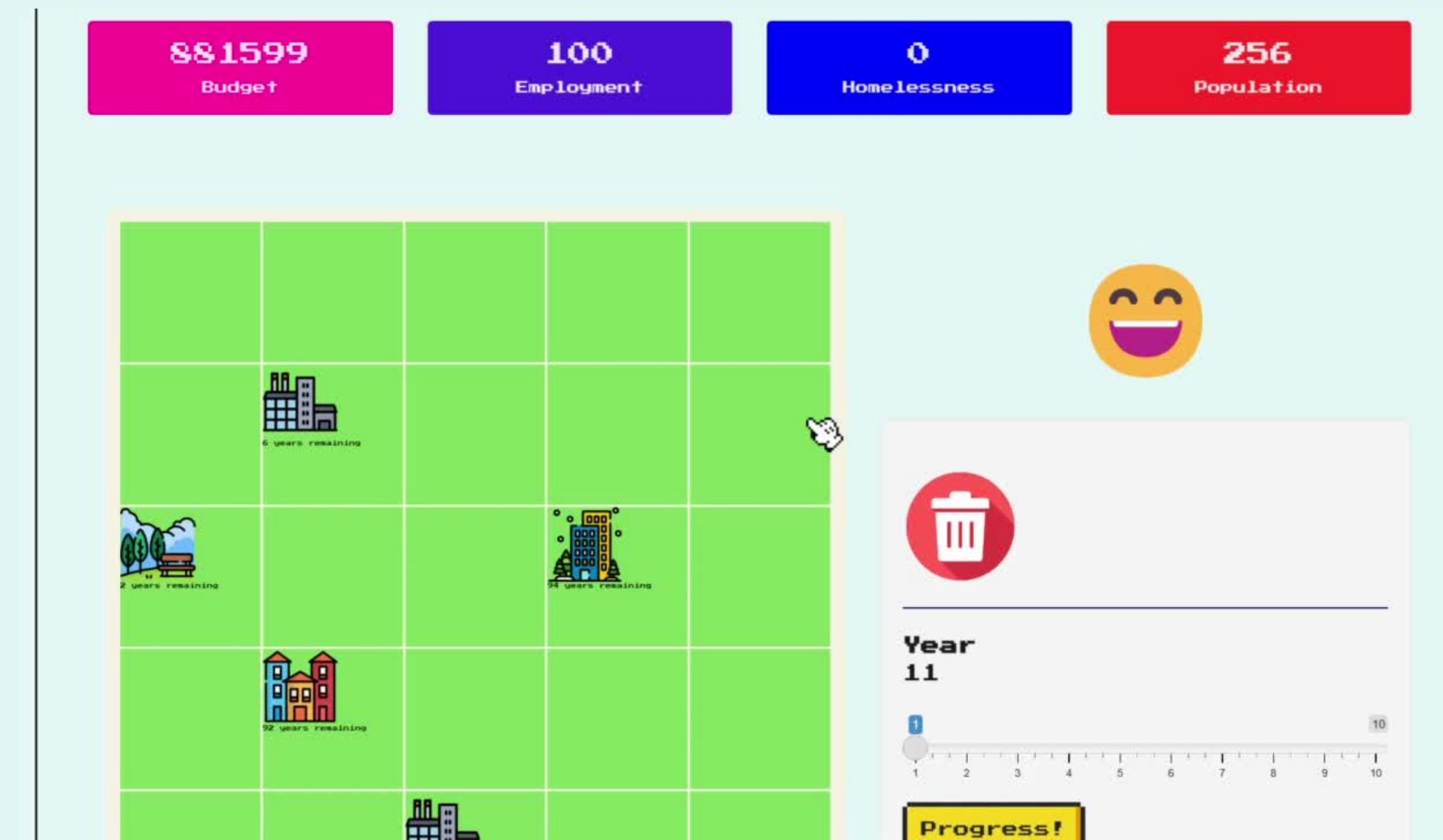
PROGRESS BAR

- Allows players to fast forward up to 10 years



DEMOLiSH

- Allows players to change their strategy at a cost
- Time & budget have to be spent on demolition



CHECK STATISTICS

Helps players track their progress and plan their strategy accordingly



LEADERBOARD

- Allows players to compare their performance against others
- Creates a sense of competition & motivation to improve
- There is not any player that can dominate all metrics



GAME OUTPUTS



HAPPINESS



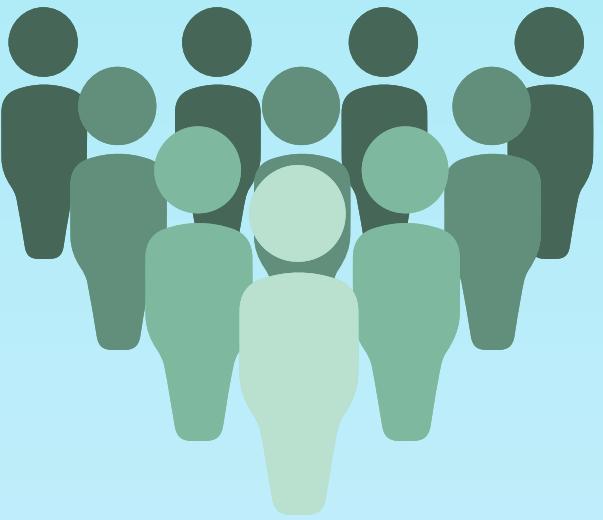
BUDGET



HOMELESSNESS



EMPLOYMENT



POPULATION

THE HAPPiNESS EQUATION

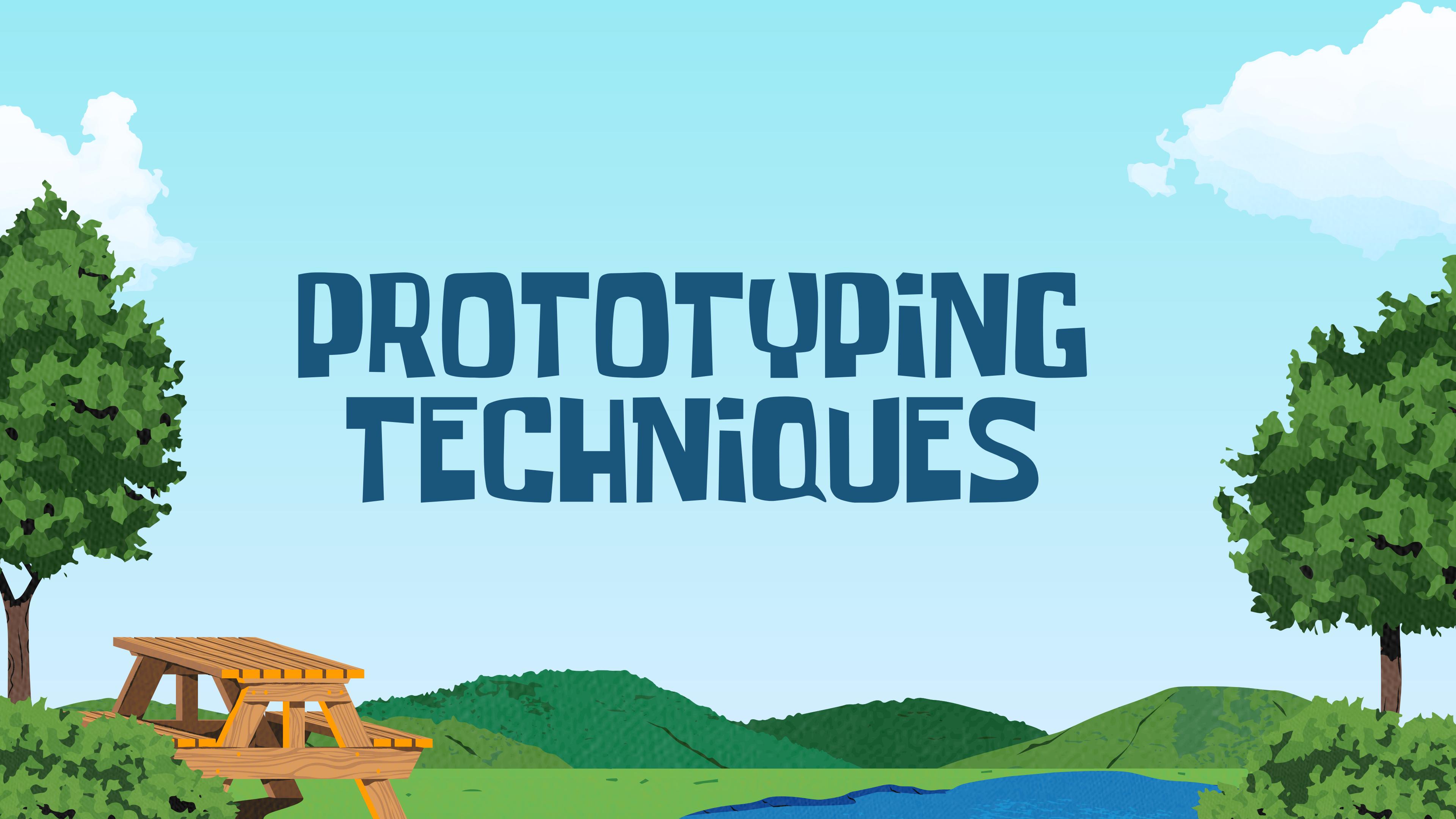
Current Happiness = 0.7[Previous Happiness]

- 10[Number of Homeless] + 0.5[Number of Employed]
+ 50[Number of Parks built]

THE BUDGET EQUATION

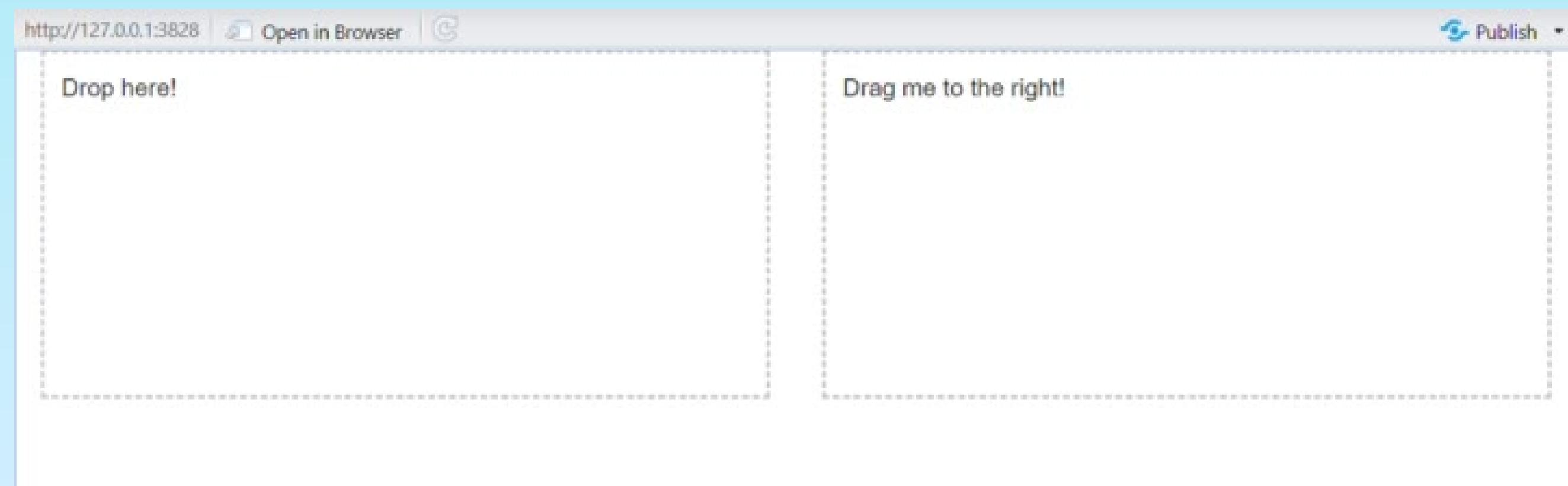
Current Budget = [Previous Budget] - 100[Total Population] + 1000[Number of Employed] + 50000[Number of Offices built]

PROTOTYPING TECHNIQUES



MINIMUM VIABLE PRODUCT (MVP)

- Implement the **absolute core features** needed to convey the game's concept
- Core feature: drag & drop



USER TESTING

- Regularly playtest our prototype with others to gather feedback and identify areas for improvement

EDUCATIONAL MESSAGE

"Housing Hustlers" is an educational game that puts players in the role of urban planners building cities. They learn about **resource allocation and opportunity costs** in a fun and interactive manner. Through the game, players develop **critical planning skills** and understand the impact of the different decisions they make.



THANK YOU!

REFERENCES

- ★ Little, I. M. D., & Mirrlees, J. A. (1974). Planning and resource allocation in developing countries. Oxford University Press.
- ★ O'Donnell, R. (2009). The Concept of Opportunity Cost. *Australasian Journal of Economics Education*, 6(1), 7-24.