

# Programming is fun!

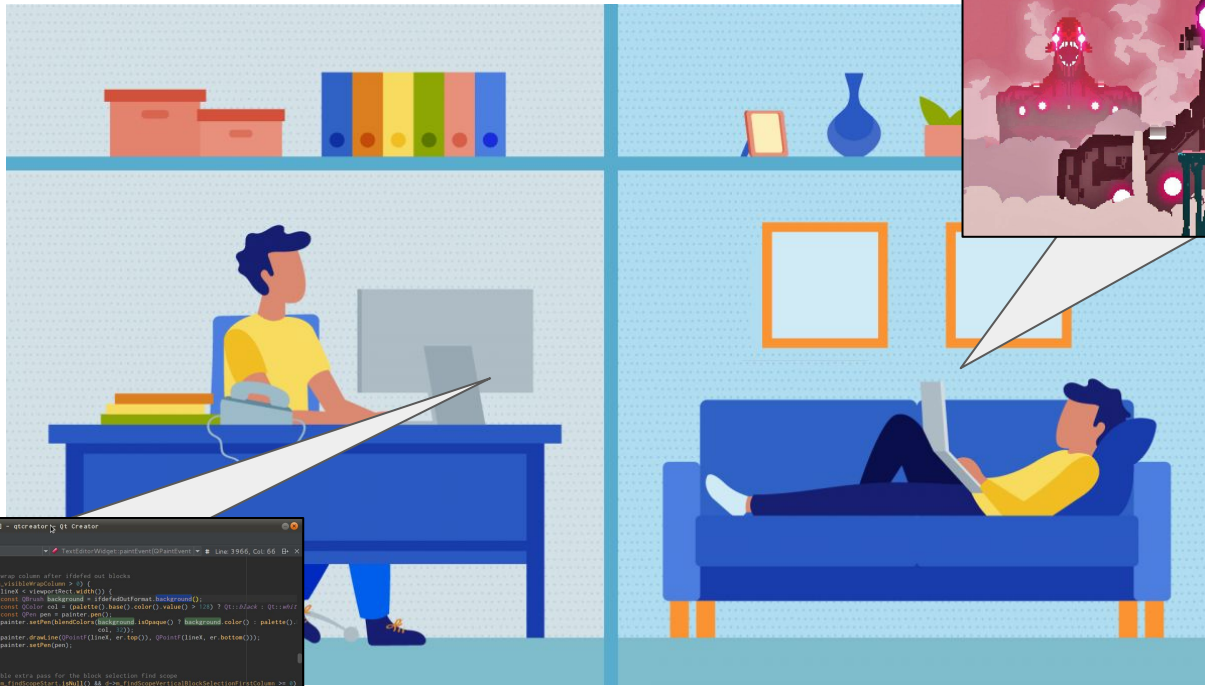
A survey of the STEAM digital distribution  
platform

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 @jarnedom

# After a hard work day...

A screenshot of the Qt Creator IDE. The main window displays C++ code for 'texteditor.cpp'. The code includes comments and function calls like 'painter.fillRect', 'painter.drawRect', and 'painter.fillRect'. A search window is open at the bottom, showing search results for 'background' in the 'texteditor.cpp' file. The search results show the line number 1985 and the corresponding code snippet: 'if (blockFS.position() >= 4->findDocStart\_block().position())'. The search window also shows the search term 'background' and the search results list.

# After a hard work day.....mmmm



```
texteditor.cpp [master] - Qt Creator
Projects
  subsetting.cpp
  subsettingwidget.cpp
  textdocument.cpp
  textdocumentmanager.cpp
  texteditor.cpp
  texteditoraction.cpp
  texteditoractionhandler.cpp
  texteditorcommand.cpp
  texteditorcommand.cpp
  texteditoroverlay.cpp
  texteditorplugin.cpp
  texteditorplugin.cpp
  textmark.cpp
  typewidget.cpp
  Resources
  Other Files
  texteditor-dependencies
  tests

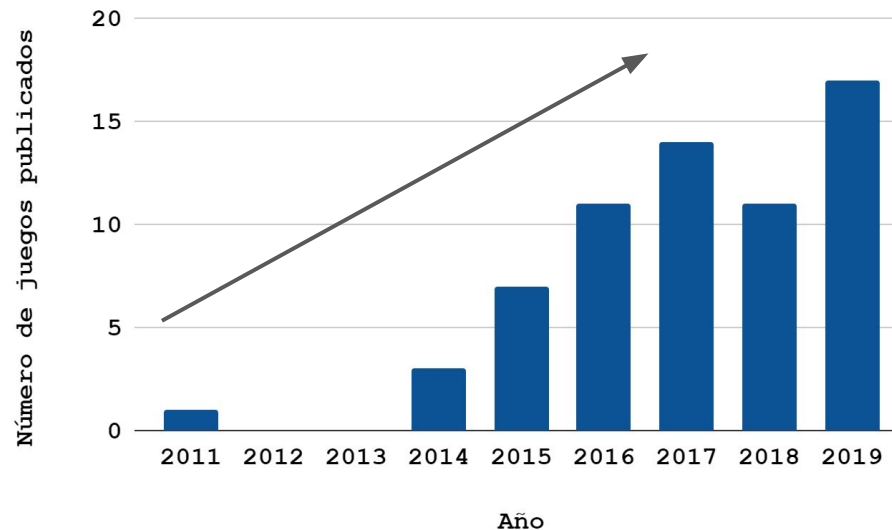
Find: background
Replace with:
Search Results
Scope: All Projects
Search for: @parent
Case sensitive: Whole words only
Use regular expressions
File pattern:
```

# The “Programming games” genre

*“Games in which the player writes short programs that control agents within a game.” (Wolf, 2001)*

## Niche, but its popularity has increased in recent years

(data from Steam)



*Published in 2020*

**38**

**32**

*In development*

# A survey on “programming games”

## Research Questions

- What are the main properties of “programming games” from a design standpoint?
- How many are REALLY about programming?

*“the process of preparing an **instructional program** for a device”  
(Merriam-Webster)”*

- Which computer programming learning outcome concepts could be considered to be covered in each game?

# A survey on “programming games”

## Methodology

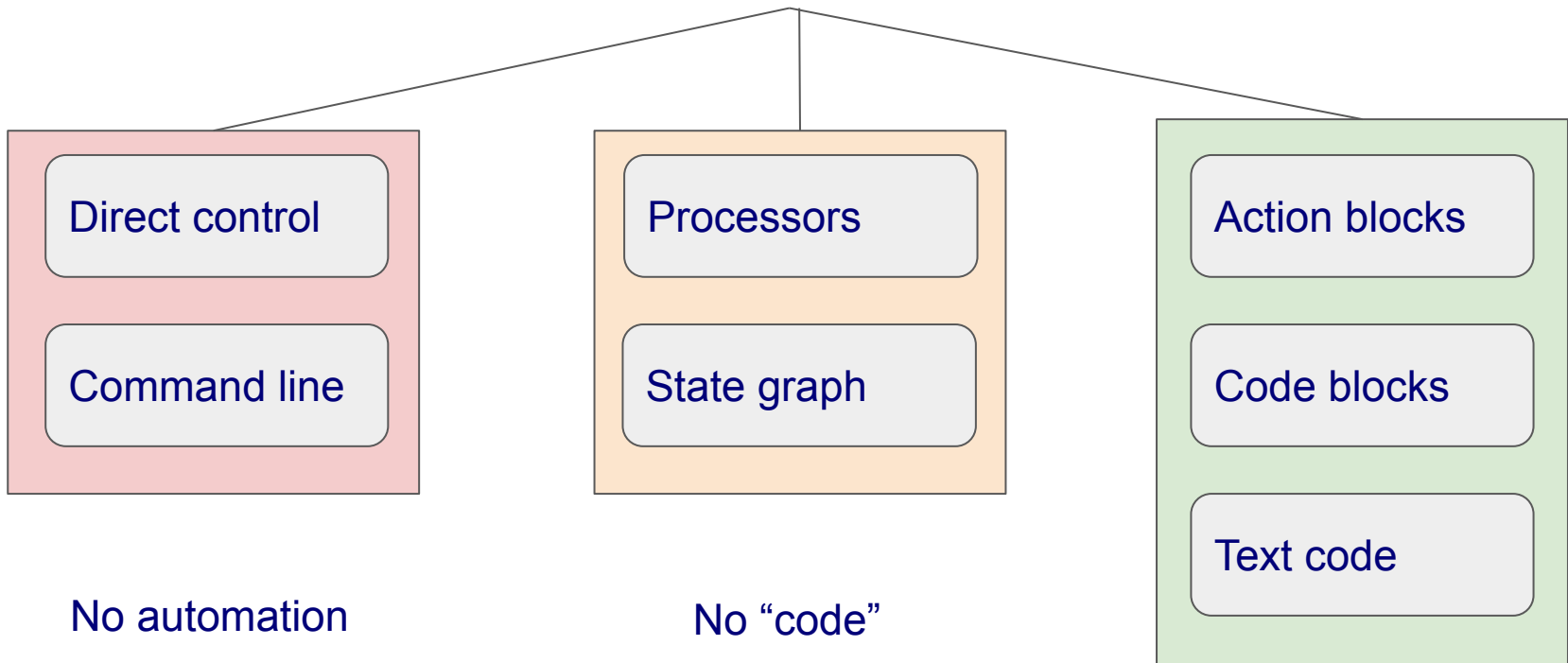
- Study based on the Steam digital store using its API via steamDB.
- Games only (no DLC, apps, etc.) with the “Programming” tag.
- Assessment based on 2 hour long gameplay (or til the end!)
- Coding curriculum categories based on:

*A. Becker and T. Fitzpatrick, “What do cs1 syllabi reveal about our expectations of introductory programming students?” in Proceedings of the 50th ACM Technical Symposium on Computer Science Education, 2019*



# Categorization

## Coding interface





# But, can you really learn programming?

	Action blocks	Code blocks	Text code
<b>Vars &amp; Operators</b>			
<b>Selection</b>			
<b>Iteration</b>			
<b>Classes &amp; Objects</b>			
<b>Functions</b>			
<b>Arrays</b>			
<b>Debug &amp; Test</b>			

**Main value:** Algorithmic design, problem-solving skills

## Future (and present) work

- The study should be updated (about 70 new games).
- They should be tested with student (now undergoing pilot - HRM).
- “MVPs”: Zachatronics and Tomorrow Corporation.
- Something interesting for educators: [Zachademics](#).

More detailed information (full analysis by game) in the original paper.

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Thanks!

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