SCRATCH: INTRODUCING KIDS TO PROGRAMMING

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ABSTRACT

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1 Introduction

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main() {
}
```

2 History

[1] Scratch is not your traditional programming language, it's what's called a block-based visual programming language that was developed by the MIT Media Lab. It's primary purpose is to educate it's users of concepts and skills that can then be applied to other languages such as Java or C. The language first appeared in 2003 with the first desktop version of the language was developed, however it wasn't until 2007 when it was released to the public. The goal of the project was to teach young children to code in an easy fun and interactive way.

Today Scratch is currently on version 3.0, released in 2019, replacing it's predecessor Scratch 2.0 which was released on May 9, 2013. Today Scratch is used in many places across the globe and has been translated into 70+ languages. It is very prevalent in classrooms in all age ranges, scratch was developed in close coordination with a young audience at "Computer Clubhouses to maximize it's ease of use and educational effectiveness.

Scratch aims to simplify creating animations, games, and interactive stories, and simulations. Scratch 3.0 has it's own self contained paint editor and sound editor allowing users to create assets all within one suite. Scratch targets kids within the age range of 8-16 years old, often giving the kids a brief glimpse into Computer Science for the first time.

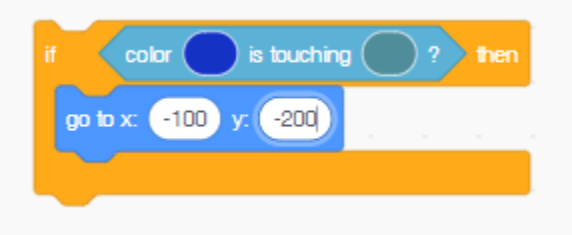
3 Control Structures

The control structures of scratch are very unique due to the fact that it's a visual programming language although it shares many of the same elements as other languages. Just like thousands of other programming languages scratch has 'if then else' control blocks as well as various loops.

Scratch implements a 'forever' loop that will not escape until the 'stop' block is called. It also has 'repeat until <boolean>', and 'repeat <iteration count>' , although the same functionality can be achieved using the forever loop and stop block. This is makes the language simpler and easier to understand by young students which is the goal of the language.

Scratches control structure allows the user to have event based control of 'sprites.' A sprite is a bitmap graphic that is used to construct a scene, they can be static or dynamic. By utilizing many sprites and various control structures the program can follow many paths. Each sprite as well as the background stage has it's own code blocks. This allows each

sprite to be dynamic in regards to it's surroundings. For example on the event of 'if a sprite is touching a color 'blue" we can move the sprite to another location.



4 Data Types

5 Subprograms

6 Summary

References

[1] Scratchers. Scratch wiki. https://en.scratch-wiki.info/wiki/, 12 2008.