

Blocks for Open edX

Presented by

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Co-founder of Elite Education





Agenda

1. Who am I?
2. What do we do?
3. Why randomization is not easy?
4. What is Scratch?
5. What have we done with Blocks?
6. What to do next?




Who am I?

- Co-founder of Elite Education in Guangzhou, China
- Associate Professor at Long Island University, New York
- Course launched on Open edX based platform since 2016
- A big fan of MATLAB
- A so-so C coder



Who do we do?


1.  **E-ducation** , a SaaS online learning and training platform based on Open edX for organizations.



The screenshot shows the E-ducation website homepage. The header includes the E-ducation logo, navigation links (Features, Pricing, Support, Guide, EliteU), contact information (400-931-8118), and user options (Log in, Free Trial, English). The main content area features a dark blue background with a network of circular profile pictures connected by dotted lines. The text reads: "EDX-BASED ONLINE LEARNING PLATFORM", "E-ducation is further developed using Open edX, the international platform founded by Harvard and MIT with over 35 million online learners in over 64 countries.", and "More Features • More User-Friendly". At the bottom, there are "Free Trial" and "Buy Now" buttons.



Who do we do?

1.  **EliteMBA** , an online business-related courses learning platform based on Open edX for individuals and organizations.

EliteMBA 发现课程 会员资格 教授 注册 登录

学则变·变则进 —— 英荔商学院
月均99.84元, 畅学高价值MBA课程!

搜索

课程名称	讲师	开课日期
国际商法: 美国商业法律制度环境	授课教授: 朱灵	2019年12月1日
模型与决策	授课教授: 汪高亮	2019年11月1日
营销管理与应用	授课教授: 张东瑞	2019年7月1日
Macroeconomics: Challenging Concepts	授课教授: Clark Ross	2019年6月1日



Why randomization is not easy?

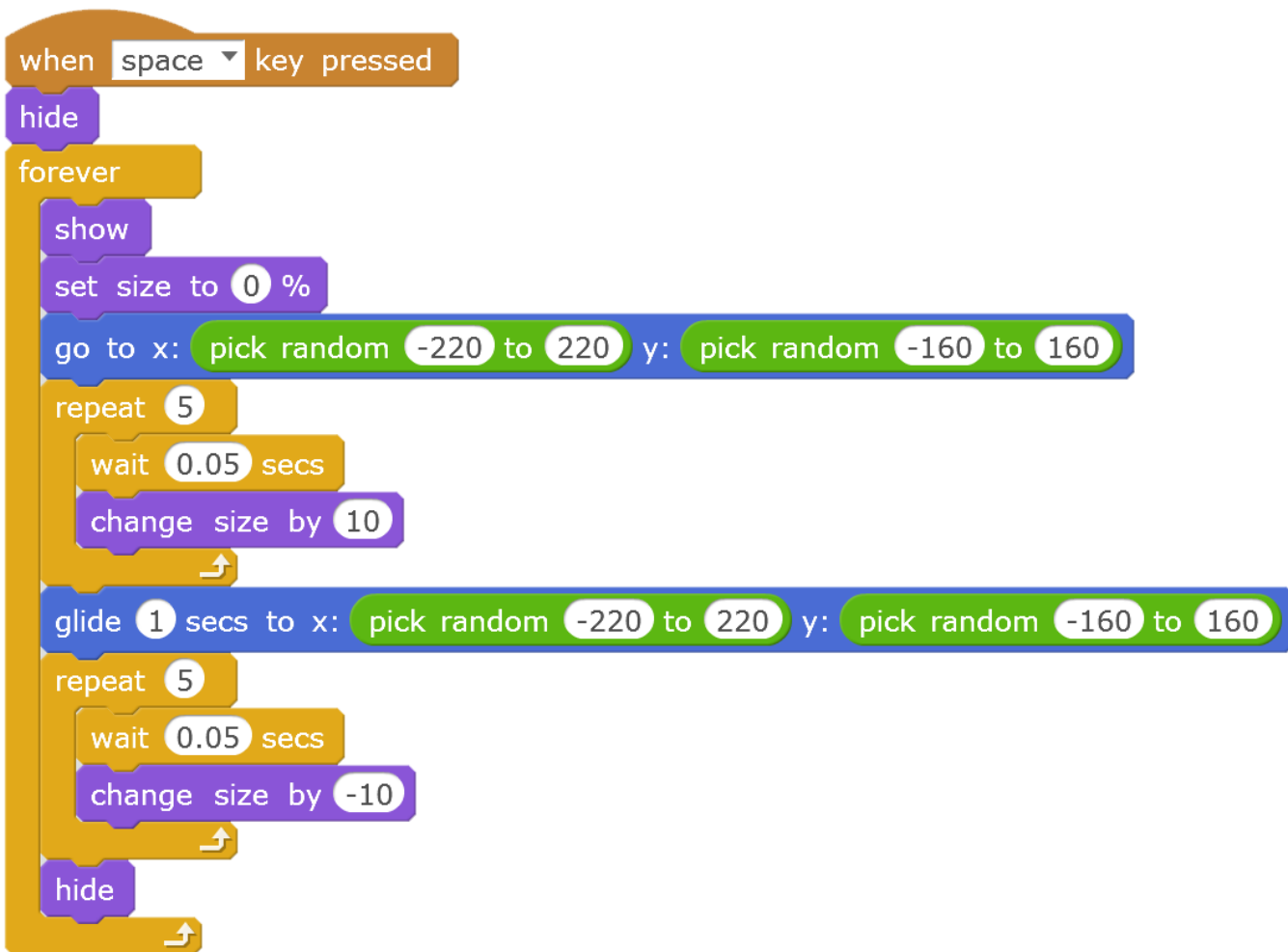
1. Course developers (HRs / Professors) are strangers to Python and lack of programming and coding practices.
2. IT professionals do not have in-depth knowledge of courses.
3. Staffing an IT department may not be an issue for large corporations however many SMEs cannot afford it.



What is Scratch?

1. **SCRATCH** is a project of the Lifelong Kindergarten Group at the MIT Media Lab. It is provided free of charge.
2. Scratch is a block-based visual programming language and online community targeted primarily at children. Users of the site can create online projects using a block-like interface.







What have we done with Blocks?

1. <https://e-education.github.io/blocks4edx/>



Example from Open edX

```
<problem>
  <p>Some problems in the course will utilize randomized parameters.
    For such problems, after you check your answer you will have the option
    of resetting the question, which reconstructs the problem with a new
    set of parameters.</p>
  <script type="loncapa/python">
x1 = random.randint(0, 100)
x2 = random.randint(0, 100)
y = x1+x2
  </script>
  <p>Let ( $x_1 = \$x1$ ) and ( $x_2 = \$x2$ ). What is the value of ( $x_1+x_2$ )?</p>
  <numericalresponse answer="\$y">
    <responseparam type="tolerance" default="0.01%" name="tol"
      description="Numerical Tolerance"/>
    <textline size="10"/>
  </numericalresponse>
  <solution>
    <p><b>Explanation:</b></p>
  </solution>
</problem>
```



Example from Open edX

python_script

set x_1 to random integer from 1 to 100

set x_2 to random integer from 1 to 100

set y to $x_1 + x_2$

problem_text

Some problems in the course will utilize randomi...

Let ($x_1 = \$x_1$) and ($x_2 = \x_2). What is the val...

response

numericalresponse answer: y type: tolerance default: 0.01% textline_size: 10

solution

Explanation:



Example from Elite Education

1. A regional distributor of a national tire company sells about **9,656 units** of a certain type of steel-belt radial ply tire in one year. The annual holding cost is **\$18** per tire and the annual ordering cost is **\$78**. The distributor orders **290** tires per time. Question: How much would the total annual cost be? What is the total cost if the distributor ordered in EOQ?



Example from Elite Education

1. Q: random from 270 to 290

2. h: random from 15 to 20

3. D: random from 9600 to 9700

4. S: random from 70 to 80

5. Answer: $\frac{Q}{2} \times h + \frac{D}{Q} \times S$



Example from Elite Education

```
python_script
set Q to random integer from 270 to 290
set h to random integer from 15 to 20
set D to random integer from 9600 to 9700
set S to random integer from 70 to 80
set result to keep 2 decimal (Q ÷ 2 × h + D ÷ Q × S)
set wrong_result1 to keep 2 decimal (result + 100)
set wrong_result2 to keep 2 decimal (result + 200)
set wrong_result3 to keep 2 decimal (result + 300)

problem_text
<p> A regional distributor of a national tire compan... </p>

response
multiplechoiceresponse
choice correct: true fixed: false text: $result
choice correct: false fixed: false text: $wrong_result1
choice correct: false fixed: false text: $wrong_result2
choice correct: false fixed: false text: $wrong_result3

solution
<p> Explanation: </p>
<p> Total Annual Cost = Annual Holding Cost + Annual... </p>
```



A regional distributor of a national tire company sells about 9692 units of a certain type of steel-belt radial ply tire in one year. The annual holding cost is \$18 per tire and the annual ordering cost is \$71. The distributor works 280 days per year. Question: How much would the total annual cost be if the distributor ordered in EOQ?

4977.61

5177.61

5277.61

5077.61

提交 您已经尝试了1次 (总共可以尝

A regional distributor of a national tire company sells about 9677 units of a certain type of steel-belt radial ply tire in one year. The annual holding cost is \$20 per tire and the annual ordering cost is \$72. The distributor works 272 days per year. Question: How much would the total annual cost be if the distributor ordered in EOQ?

5581.56

5381.56

5481.56

5281.56

提交 您已经尝试了0次 (总共可以尝试3次)





What to do next?

1. More blocks for other types of randomized questions.
2. Or probably for all types of problems / questions.



Project Info

1. GitHub: e-ducation/blocks4edx
2. <https://e-ducation.github.io/blocks4edx/>

3. Key contributor:

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<https://github.com/wwj718>

Thank you very much for listening!

非常感谢您的聆听!

Learn to Change · Change to Improve

