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**程序的文档，提取根**

**（对于用户)**

烫发

2017

## 内容

1. 介绍;

2. 名称，范围，发展目的;

3. 发展的基础;

4. 软件产品的技术要求;

5. 开发、测试和错误的阶段和阶段;

6. 人员和报酬;

7. 与我们沟通。

## 1. 介绍

我们要准备你在道义上这个软件产品，我希望它会以某种方式满足您的期望。

该计划是在演讲中给我们的代码的基础上开发的。

所考虑的软件产品是根据客户发布的技术规范开发的，这些技术规范也在下面给出了细微的变化，并且由一个根提取程序组成。

## 2. 开发的名称、范围和目的

我们的"提取器"程序被中小学生和学生用于在教育领域提取根，它也可以应用于已经完成培训的懒惰用户，但生活状况迫使他们提取根。

## 3. 发展的基础

发展的基础是家庭作业，在HSE的第一年发行。

## 4. 软件产品的技术要求

1. 功能：根不仅算术，从头开始，复杂的，长的数字，所需的精度，分析（部分要求不幸的是不与无知有关）。

2. 稳健性

3. GUI(考虑到精密控制和polytechnische)

4. 多语种

5. 跨平台

## 5. 开发、测试和错误的阶段和步骤

我们的算法将用于在Python介质开发环境中实现的程序。

程序代码:

1. from tkinter import \*
2. import tkinter
3. import tkinter.ttk
4. import math
5. def create\_widgets\_in\_first\_frame():
6. # Create the label for the frame
7. first\_window\_label = tkinter.ttk.Label(first\_frame,
   * + - 1. text='Choose Language')
8. first\_window\_label.grid(column=2,
   * 1. row=0,
     2. pady=10,
     3. padx=10,
     4. sticky=(tkinter.N))
9. # Create the button for the frame
10. create\_widgets\_in\_first\_frame.add\_img = tkinter.PhotoImage(file="1.png")
11. create\_widgets\_in\_second\_frame.add\_img = tkinter.PhotoImage(file="2.png")
12. create\_widgets\_in\_third\_frame.add\_img = tkinter.PhotoImage(file="3.png")
13. create\_widgets\_in\_fourth\_frame.add\_img = tkinter.PhotoImage(file="4.png")
14. first\_window\_next\_button = tkinter.Button(first\_frame,
    * + - 1. text="Русский",
          2. image=create\_widgets\_in\_first\_frame.add\_img,
          3. command=call\_second\_frame\_on\_top)
15. first\_window\_next\_button.grid(column=1,
    * + 1. row=1,
        2. pady=10,
        3. padx=10)
16. first\_window\_next\_button = tkinter.Button(first\_frame,
    * + - 1. text="Английский",
          2. image=create\_widgets\_in\_second\_frame.add\_img,
          3. command=call\_third\_frame\_on\_top)
17. first\_window\_next\_button.grid(column=1,
    * + 1. row=2,
        2. pady=10,
        3. padx=10)
18. first\_window\_next\_button = tkinter.Button(first\_frame,
    * + - 1. text="Китайский",
          2. image=create\_widgets\_in\_third\_frame.add\_img,
          3. command=call\_fourth\_frame\_on\_top)
19. first\_window\_next\_button.grid(column=3,
    * + 1. row=1,
        2. pady=10,
        3. padx=10)
20. first\_window\_next\_button = tkinter.Button(first\_frame,
    * + - 1. text="Французский",
          2. image=create\_widgets\_in\_fourth\_frame.add\_img,
          3. command=call\_fifth\_frame\_on\_top)
21. first\_window\_next\_button.grid(column=3,
    * + 1. row=2,
        2. pady=10,
        3. padx=10)
22. first\_window\_quit\_button = tkinter.Button(first\_frame,
    * + - 1. text="Exit",
          2. command=quit\_program)
23. first\_window\_quit\_button.grid(column=4,
    * + 1. row=3,
        2. pady=10,
        3. padx=10)
24. def create\_widgets\_in\_second\_frame():
25. # Create the label for the frame
26. second\_window\_label = tkinter.ttk.Label(second\_frame,
    * + - 1. text='Введите число:')
27. second\_window\_label.grid(column=1,
    * 1. row=0,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
28. message = StringVar()
29. entry1 = tkinter.Entry(second\_frame, text='', textvariable=message, width=50,)
30. entry1.grid(column=2,
    * 1. row=0,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
31. second\_window\_label = tkinter.ttk.Label(second\_frame,
    * + - 1. text='Точность:')
32. second\_window\_label.grid(column=1,
    * 1. row=1,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
33. many = StringVar()
34. message\_entry = Entry(second\_frame, text='', textvariable=many, width=20, )
35. message\_entry.grid(column=2,
    * 1. row=1,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
36. def func1():
37. try:
    1. x = float(entry1.get())
    2. a = int(message\_entry.get())
    3. second\_window\_label1.config(
    4. text=("{0:." + str(a) + "f}").format(
       1. math.sqrt(-x) if x < 0 else math.sqrt(x))
    5. + ("i" if x < 0 else ""))
38. except ValueError:
    1. second\_window\_label1.config(text="Ошибка введите цифры")
39. second\_window\_label1 = tkinter.Label(second\_frame,
    * + - 1. text="Ответ:")
40. second\_window\_label1.grid(column=2,
    * 1. row=3,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
41. second\_window\_label = tkinter.ttk.Label(second\_frame,
    * + - 1. text="Ответ:")
42. second\_window\_label.grid(column=1,
    * 1. row=3,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
43. # Create the button for the frame
44. second\_window\_enter\_button = tkinter.Button(second\_frame, text='Решить', command=func1)
45. second\_window\_enter\_button.grid(column=2,
    * + 1. row=2,
        2. pady=10,
        3. padx=10)
46. second\_window\_back\_button = tkinter.Button(second\_frame,
    * + - 1. text="Назад",
          2. command=call\_first\_frame\_on\_top)
47. second\_window\_back\_button.grid(column=0,
    * + 1. row=5,
        2. pady=10,
        3. padx=10)
48. second\_window\_next\_button = tkinter.Button(second\_frame,
    * + - 1. text="Выход",
          2. command=quit\_program)
49. second\_window\_next\_button.grid(column=5,
    * + 1. row=5,
        2. pady=10,
        3. padx=10)
50. def create\_widgets\_in\_third\_frame():
51. # Create the label for the frame
52. third\_window\_label = tkinter.ttk.Label(third\_frame,
    * + - 1. text='输入一个数字:')
53. third\_window\_label.grid(column=1,
    * 1. row=0,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
54. message = StringVar()
55. entry1 = tkinter.Entry(third\_frame, text='', textvariable=message, width=50, )
56. entry1.grid(column=2,
    1. row=0,
    2. pady=10,
    3. padx=10,
    4. sticky=(tkinter.N))
57. third\_window\_label = tkinter.ttk.Label(third\_frame,
    * + - 1. text='准确度:')
58. third\_window\_label.grid(column=1,
    * 1. row=1,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
59. many = StringVar()
60. message\_entry = Entry(third\_frame, text='', textvariable=many, width=20, )
61. message\_entry.grid(column=2,
    * 1. row=1,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
62. def func1():
63. try:
    1. x = float(entry1.get())
    2. a = int(message\_entry.get())
    3. third\_window\_label1.config(
    4. text=("{0:." + str(a) + "f}").format(
       1. math.sqrt(-x) if x < 0 else math.sqrt(x))
    5. + ("i" if x < 0 else ""))
64. except ValueError:
    1. third\_window\_label1.config(text="错误输入数字")
65. third\_window\_label1 = tkinter.Label(third\_frame,
    * + - 1. text="回答:")
66. third\_window\_label1.grid(column=2,
    * 1. row=3,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
67. third\_window\_label = tkinter.ttk.Label(third\_frame,
    * + - 1. text="回答:")
68. third\_window\_label.grid(column=1,
    * 1. row=3,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
69. # Create the button for the frame
70. third\_window\_enter\_button = tkinter.Button(third\_frame, text='解决', command=func1)
71. third\_window\_enter\_button.grid(column=2,
    * + 1. row=2,
        2. pady=10,
        3. padx=10)
72. # Create the button for the frame
73. third\_window\_back\_button = tkinter.Button(third\_frame,
    * + - 1. text="向后",
          2. command=call\_first\_frame\_on\_top)
74. third\_window\_back\_button.grid(column=0,
    * + 1. row=5,
        2. pady=10,
        3. padx=10,
        4. sticky=(tkinter.N))
75. third\_window\_quit\_button = tkinter.Button(third\_frame,
    * + - 1. text="输出",
          2. command = quit\_program)
76. third\_window\_quit\_button.grid(column=5,
    * + 1. row=5,
        2. pady=10,
        3. padx=10,
        4. sticky=(tkinter.N))
77. def create\_widgets\_in\_fourth\_frame():
78. # Create the label for the frame
79. fourth\_window\_label = tkinter.ttk.Label(fourth\_frame,
    * + - 1. text='Enter a number:')
80. fourth\_window\_label.grid(column=1,
    * 1. row=0,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
81. message = StringVar()
82. entry1 = tkinter.Entry(fourth\_frame, text='', textvariable=message, width=50, )
83. entry1.grid(column=2,
    1. row=0,
    2. pady=10,
    3. padx=10,
    4. sticky=(tkinter.N))
84. fourth\_window\_label = tkinter.ttk.Label(fourth\_frame,
    * + - 1. text='Accuracy:')
85. fourth\_window\_label.grid(column=1,
    * 1. row=1,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
86. many = StringVar()
87. message\_entry = Entry(fourth\_frame, text='', textvariable=many, width=20, )
88. message\_entry.grid(column=2,
    * 1. row=1,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
89. def func1():
90. try:
    1. x = float(entry1.get())
    2. a = int(message\_entry.get())
    3. fourth\_window\_label1.config(
    4. text=("{0:." + str(a) + "f}").format(
       1. math.sqrt(-x) if x < 0 else math.sqrt(x))
    5. + ("i" if x < 0 else ""))
91. except ValueError:
    1. fourth\_window\_label1.config(text="Error enter numbers")
92. fourth\_window\_label1 = tkinter.Label(fourth\_frame,
    * + - 1. text="Answer:")
93. fourth\_window\_label1.grid(column=2,
    * 1. row=3,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
94. fourth\_window\_label = tkinter.ttk.Label(fourth\_frame,
    * + - 1. text="Answer:")
95. fourth\_window\_label.grid(column=1,
    * 1. row=3,
      2. pady=10,
      3. padx=10,
      4. sticky=(tkinter.N))
96. # Create the button for the frame
97. fourth\_window\_enter\_button = tkinter.Button(fourth\_frame, text='Solve', command=func1)
98. fourth\_window\_enter\_button.grid(column=2,
    * + 1. row=2,
        2. pady=10,
        3. padx=10)
99. # Create the button for the frame
100. fourth\_window\_back\_button = tkinter.Button(fourth\_frame,
     * + - 1. text="Back",
           2. command=call\_first\_frame\_on\_top)
101. fourth\_window\_back\_button.grid(column=0,
     * + 1. row=5,
         2. pady=10,
         3. padx=10,
         4. sticky=(tkinter.N))
102. fourth\_window\_quit\_button = tkinter.Button(fourth\_frame,
     * + - 1. text="Exit",
           2. command=quit\_program)
103. fourth\_window\_quit\_button.grid(column=5,
     * + 1. row=5,
         2. pady=10,
         3. padx=10,
         4. sticky=(tkinter.N))
104. def create\_widgets\_in\_fifth\_frame():
105. # Create the label for the frame
106. fifth\_window\_label = tkinter.ttk.Label(fifth\_frame,
     * + - 1. text='Entrez un nombre:')
107. fifth\_window\_label.grid(column=1,
     * 1. row=0,
       2. pady=10,
       3. padx=10,
       4. sticky=(tkinter.N))
108. message = StringVar()
109. entry1 = tkinter.Entry(fifth\_frame, text='', textvariable=message, width=50, )
110. entry1.grid(column=2,
     1. row=0,
     2. pady=10,
     3. padx=10,
     4. sticky=(tkinter.N))
111. fifth\_window\_label = tkinter.ttk.Label(fifth\_frame,
     * + - 1. text='Précision:')
112. fifth\_window\_label.grid(column=1,
     * 1. row=1,
       2. pady=10,
       3. padx=10,
       4. sticky=(tkinter.N))
113. many = StringVar()
114. message\_entry = Entry(fifth\_frame, text='', textvariable=many, width=20, )
115. message\_entry.grid(column=2,
     * 1. row=1,
       2. pady=10,
       3. padx=10,
       4. sticky=(tkinter.N))
116. def func1():
117. try:
     1. x = float(entry1.get())
     2. a = int(message\_entry.get())
     3. fifth\_window\_label1.config(
     4. text=("{0:." + str(a) + "f}").format(
        1. math.sqrt(-x) if x < 0 else math.sqrt(x))
     5. + ("i" if x < 0 else ""))
118. except ValueError:
     1. fifth\_window\_label1.config(text="Erreur entrez les chiffres")
119. fifth\_window\_label1 = tkinter.Label(fifth\_frame,
     * + - 1. text="Réponse:")
120. fifth\_window\_label1.grid(column=2,
     * 1. row=3,
       2. pady=10,
       3. padx=10,
       4. sticky=(tkinter.N))
121. fifth\_window\_label = tkinter.ttk.Label(fifth\_frame,
     * + - 1. text="Réponse:")
122. fifth\_window\_label.grid(column=1,
     * 1. row=3,
       2. pady=10,
       3. padx=10,
       4. sticky=(tkinter.N))
123. # Create the button for the frame
124. fifth\_window\_enter\_button = tkinter.Button(fifth\_frame, text='Résoudre', command=func1)
125. fifth\_window\_enter\_button.grid(column=2,
     * + 1. row=2,
         2. pady=10,
         3. padx=10)
126. # Create the button for the frame
127. fifth\_window\_back\_button = tkinter.Button(fifth\_frame,
     * + - 1. text="Retourner",
           2. command=call\_first\_frame\_on\_top)
128. fifth\_window\_back\_button.grid(column=0,
     * + 1. row=5,
         2. pady=10,
         3. padx=10,
         4. sticky=(tkinter.N))
129. fifth\_window\_quit\_button = tkinter.Button(fifth\_frame,
     * + - 1. text="Sortir",
           2. command=quit\_program)
130. fifth\_window\_quit\_button.grid(column=5,
     * + 1. row=5,
         2. pady=10,
         3. padx=10,
         4. sticky=(tkinter.N))
131. def call\_first\_frame\_on\_top():
132. # This function can be called only from the second window.
133. # Hide the second window and show the first window.
134. second\_frame.place\_forget()
135. third\_frame.place\_forget()
136. fourth\_frame.place\_forget()
137. fifth\_frame.place\_forget()
138. first\_frame.place(relx=0.1, rely=0.1)
139. def call\_second\_frame\_on\_top():
140. # This function can be called from the first and third windows.
141. # Hide the first and third windows and show the second window.
142. first\_frame.place\_forget()
143. second\_frame.place(relx=0.1, rely=0.1)
144. def call\_third\_frame\_on\_top():
145. # This function can only be called from the second window.
146. # Hide the second window and show the third window.
147. first\_frame.place\_forget()
148. third\_frame.place(relx=0.1, rely=0.1)
149. def call\_fourth\_frame\_on\_top():
150. # This function can only be called from the second window.
151. # Hide the second window and show the third window.
152. first\_frame.place\_forget()
153. fourth\_frame.place(relx=0.1, rely=0.1)
154. def call\_fifth\_frame\_on\_top():
155. # This function can only be called from the second window.
156. # Hide the second window and show the third window.
157. first\_frame.place\_forget()
158. fifth\_frame.place(relx=0.1, rely=0.1)
159. def quit\_program():
160. root\_window.destroy()
161. ###############################
162. # Main program starts here :) #
163. ###############################
164. # Create the root GUI window.
165. root\_window = tkinter.Tk()
166. root\_window.title("Калькулятор квадратов")
167. root\_window.geometry("700x400")
168. root\_window.resizable(False, False)
169. # Create frames inside the root window to hold other GUI elements. All frames must be created in the main program, otherwise they are not accessible in functions.
170. first\_frame = tkinter.ttk.Frame(root\_window, width=750, height=450+300+200)
171. first\_frame.place(relx=0.1, rely=0.1)
172. second\_frame = tkinter.ttk.Frame(root\_window, width=750, height=450+300+200)
173. second\_frame.place(relx=0.1, rely=0.1)
174. third\_frame = tkinter.ttk.Frame(root\_window, width=750, height=450+300+200)
175. third\_frame.place(relx=0.1, rely=0.1)
176. fourth\_frame = tkinter.ttk.Frame(root\_window, width=750, height=450+300+200)
177. fourth\_frame.place(relx=0.1, rely=0.1)
178. fifth\_frame = tkinter.ttk.Frame(root\_window, width=750, height=450+300+200)
179. fifth\_frame.place(relx=0.1, rely=0.1)
180. # Create all widgets to all frames
181. create\_widgets\_in\_first\_frame()
182. create\_widgets\_in\_second\_frame()
183. create\_widgets\_in\_third\_frame()
184. create\_widgets\_in\_fourth\_frame()
185. create\_widgets\_in\_fifth\_frame()
186. # Hide all frames in reverse order, but leave first frame visible (unhidden).
187. second\_frame.place\_forget()
188. third\_frame.place\_forget()
189. fourth\_frame.place\_forget()
190. fifth\_frame.place\_forget()
191. # Start tkinter event - loop
192. root\_window.mainloop()
193. Application.EnableVisualStyles()
194. Application.SetCompatibleTextRenderingDefault(False)
195. form = MyForm()
196. Application.Run(form)

## 6. 工作人员和报酬

1. Chepokov Elizar programmer-96ч程序的开发，50％的付款

2. Karavaev亚历山大-5h在网站上的发展，3小时的文件的发展，50％的付款

## 7. 与我们的沟通

我们的网站：http：//bloodiesproject。gq

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