| **Functions** | **Blocks of Assembly Code** | **Explanation of Functionality** |
| --- | --- | --- |
| 0x0000000000000a7a main | 0x0000000000000a7a <+0>: push %rbp  0x0000000000000a7b <+1>: mov %rsp,%rbp  0x0000000000000a7e <+4>: sub $0x40,%rsp  0x0000000000000a82 <+8>: mov %fs:0x28,%rax  0x0000000000000a8b <+17>: mov %rax,-0x8(%rbp)  0x0000000000000a8f <+21>: xor %eax,%eax  0x0000000000000a91 <+23>: fld1  0x0000000000000a93 <+25>: fstpt -0x20(%rbp)  0x0000000000000a96 <+28>: movl $0x0,-0x28(%rbp)  0x0000000000000a9d <+35>: lea 0x421(%rip),%rsi # 0xec5  0x0000000000000aa4 <+42>: lea 0x201575(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000aab <+49>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000ab0 <+54>: lea 0x41f(%rip),%rsi # 0xed6  0x0000000000000ab7 <+61>: lea 0x201562(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000abe <+68>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000ac3 <+73>: lea 0x41b(%rip),%rsi # 0xee5  0x0000000000000aca <+80>: lea 0x20154f(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000ad1 <+87>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000ad6 <+92>: lea 0x417(%rip),%rsi # 0xef4  0x0000000000000add <+99>: lea 0x20153c(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000ae4 <+106>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000ae9 <+111>: lea 0x415(%rip),%rsi # 0xf05  0x0000000000000af0 <+118>: lea 0x201529(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000af7 <+125>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000afc <+130>: lea 0x412(%rip),%rsi # 0xf15  0x0000000000000b03 <+137>: lea 0x201516(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000b0a <+144>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000b0f <+149>: lea -0x3d(%rbp),%rax  0x0000000000000b13 <+153>: mov %rax,%rsi  0x0000000000000b16 <+156>: lea 0x201623(%rip),%rdi # 0x202140 <\_ZSt3cin@@GLIBCXX\_3.4>  0x0000000000000b1d <+163>: callq 0x930 <\_ZStrsIcSt11char\_traitsIcEERSt13basic\_istreamIT\_T0\_ES6\_RS3\_@plt>  0x0000000000000b22 <+168>: movzbl -0x3d(%rbp),%eax  0x0000000000000b26 <+172>: movsbl %al,%eax  0x0000000000000b29 <+175>: sub $0x31,%eax  0x0000000000000b2c <+178>: cmp $0x4,%eax  0x0000000000000b2f <+181>: ja 0xd63 <main+745>  0x0000000000000b35 <+187>: mov %eax,%eax  0x0000000000000b37 <+189>: lea 0x0(,%rax,4),%rdx  0x0000000000000b3f <+197>: lea 0x41a(%rip),%rax # 0xf60  0x0000000000000b46 <+204>: mov (%rdx,%rax,1),%eax  0x0000000000000b49 <+207>: movslq %eax,%rdx  0x0000000000000b4c <+210>: lea 0x40d(%rip),%rax # 0xf60  0x0000000000000b53 <+217>: add %rdx,%rax  0x0000000000000b56 <+220>: jmpq \*%rax  0x0000000000000b58 <+222>: lea 0x3c0(%rip),%rsi # 0xf1f  0x0000000000000b5f <+229>: lea 0x2014ba(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000b66 <+236>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  ---Type <return> to continue, or q <return> to quit---  0x0000000000000b6b <+241>: lea -0x3c(%rbp),%rax  0x0000000000000b6f <+245>: mov %rax,%rsi  0x0000000000000b72 <+248>: lea 0x2015c7(%rip),%rdi # 0x202140 <\_ZSt3cin@@GLIBCXX\_3.4>  0x0000000000000b79 <+255>: callq 0x8e0 <\_ZNSirsERi@plt>  0x0000000000000b7e <+260>: mov -0x3c(%rbp),%eax  0x0000000000000b81 <+263>: test %eax,%eax  0x0000000000000b83 <+265>: jns 0xb9d <main+291>  0x0000000000000b85 <+267>: lea 0x3a5(%rip),%rsi # 0xf31  0x0000000000000b8c <+274>: lea 0x20148d(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000b93 <+281>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000b98 <+286>: jmpq 0xd78 <main+766>  0x0000000000000b9d <+291>: movl $0x1,-0x2c(%rbp)  0x0000000000000ba4 <+298>: mov -0x3c(%rbp),%eax  0x0000000000000ba7 <+301>: cmp %eax,-0x2c(%rbp)  0x0000000000000baa <+304>: jg 0xd78 <main+766>  0x0000000000000bb0 <+310>: fildl -0x2c(%rbp)  0x0000000000000bb3 <+313>: fldt -0x20(%rbp)  0x0000000000000bb6 <+316>: fmulp %st,%st(1)  0x0000000000000bb8 <+318>: fstpt -0x20(%rbp)  0x0000000000000bbb <+321>: mov -0x3c(%rbp),%eax  0x0000000000000bbe <+324>: mov %eax,%esi  0x0000000000000bc0 <+326>: lea 0x201459(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000bc7 <+333>: callq 0x950 <\_ZNSolsEi@plt>  0x0000000000000bcc <+338>: addl $0x1,-0x2c(%rbp)  0x0000000000000bd0 <+342>: jmp 0xba4 <main+298>  0x0000000000000bd2 <+344>: lea 0x346(%rip),%rsi # 0xf1f  0x0000000000000bd9 <+351>: lea 0x201440(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000be0 <+358>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000be5 <+363>: lea -0x38(%rbp),%rax  0x0000000000000be9 <+367>: mov %rax,%rsi  0x0000000000000bec <+370>: lea 0x20154d(%rip),%rdi # 0x202140 <\_ZSt3cin@@GLIBCXX\_3.4>  0x0000000000000bf3 <+377>: callq 0x8e0 <\_ZNSirsERi@plt>  0x0000000000000bf8 <+382>: mov -0x38(%rbp),%eax  0x0000000000000bfb <+385>: test %eax,%eax  0x0000000000000bfd <+387>: jns 0xc17 <main+413>  0x0000000000000bff <+389>: lea 0x32b(%rip),%rsi # 0xf31  0x0000000000000c06 <+396>: lea 0x201413(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000c0d <+403>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000c12 <+408>: jmpq 0xd79 <main+767>  0x0000000000000c17 <+413>: mov -0x38(%rbp),%ecx  0x0000000000000c1a <+416>: mov $0x66666667,%edx  0x0000000000000c1f <+421>: mov %ecx,%eax  0x0000000000000c21 <+423>: imul %edx  0x0000000000000c23 <+425>: sar $0x2,%edx  0x0000000000000c26 <+428>: mov %ecx,%eax  0x0000000000000c28 <+430>: sar $0x1f,%eax  0x0000000000000c2b <+433>: sub %eax,%edx  0x0000000000000c2d <+435>: mov %edx,%eax  ---Type <return> to continue, or q <return> to quit---  0x0000000000000c2f <+437>: mov %eax,-0x24(%rbp)  0x0000000000000c32 <+440>: mov -0x24(%rbp),%edx  0x0000000000000c35 <+443>: mov %edx,%eax  0x0000000000000c37 <+445>: shl $0x2,%eax  0x0000000000000c3a <+448>: add %edx,%eax  0x0000000000000c3c <+450>: add %eax,%eax  0x0000000000000c3e <+452>: sub %eax,%ecx  0x0000000000000c40 <+454>: mov %ecx,%eax  0x0000000000000c42 <+456>: mov %eax,-0x24(%rbp)  0x0000000000000c45 <+459>: mov -0x24(%rbp),%eax  0x0000000000000c48 <+462>: add %eax,-0x28(%rbp)  0x0000000000000c4b <+465>: mov -0x38(%rbp),%ecx  0x0000000000000c4e <+468>: mov $0x66666667,%edx  0x0000000000000c53 <+473>: mov %ecx,%eax  0x0000000000000c55 <+475>: imul %edx  0x0000000000000c57 <+477>: sar $0x2,%edx  0x0000000000000c5a <+480>: mov %ecx,%eax  0x0000000000000c5c <+482>: sar $0x1f,%eax  0x0000000000000c5f <+485>: sub %eax,%edx  0x0000000000000c61 <+487>: mov %edx,%eax  0x0000000000000c63 <+489>: mov %eax,-0x38(%rbp)  0x0000000000000c66 <+492>: mov -0x38(%rbp),%eax  0x0000000000000c69 <+495>: mov %eax,%esi  0x0000000000000c6b <+497>: lea 0x2013ae(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000c72 <+504>: callq 0x950 <\_ZNSolsEi@plt>  0x0000000000000c77 <+509>: jmpq 0xd79 <main+767>  0x0000000000000c7c <+514>: lea 0x29c(%rip),%rsi # 0xf1f  0x0000000000000c83 <+521>: lea 0x201396(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000c8a <+528>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000c8f <+533>: lea -0x34(%rbp),%rax  0x0000000000000c93 <+537>: mov %rax,%rsi  0x0000000000000c96 <+540>: lea 0x2014a3(%rip),%rdi # 0x202140 <\_ZSt3cin@@GLIBCXX\_3.4>  0x0000000000000c9d <+547>: callq 0x8e0 <\_ZNSirsERi@plt>  0x0000000000000ca2 <+552>: mov -0x34(%rbp),%eax  0x0000000000000ca5 <+555>: test %eax,%eax  0x0000000000000ca7 <+557>: jns 0xcc1 <main+583>  0x0000000000000ca9 <+559>: lea 0x281(%rip),%rsi # 0xf31  0x0000000000000cb0 <+566>: lea 0x201369(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000cb7 <+573>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000cbc <+578>: jmpq 0xd79 <main+767>  0x0000000000000cc1 <+583>: mov -0x34(%rbp),%eax  0x0000000000000cc4 <+586>: mov %eax,%edi  0x0000000000000cc6 <+588>: callq 0xdf2 <\_ZSt4sqrtIiEN9\_\_gnu\_cxx11\_\_enable\_ifIXsrSt12\_\_is\_integerIT\_E7\_\_valueEdE6\_\_typeES3\_>  0x0000000000000ccb <+593>: cvttsd2si %xmm0,%eax  0x0000000000000ccf <+597>: mov %eax,-0x34(%rbp)  0x0000000000000cd2 <+600>: mov -0x34(%rbp),%eax  0x0000000000000cd5 <+603>: mov %eax,%esi  0x0000000000000cd7 <+605>: lea 0x201342(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  ---Type <return> to continue, or q <return> to quit---  0x0000000000000cde <+612>: callq 0x950 <\_ZNSolsEi@plt>  0x0000000000000ce3 <+617>: jmpq 0xd79 <main+767>  0x0000000000000ce8 <+622>: lea 0x230(%rip),%rsi # 0xf1f  0x0000000000000cef <+629>: lea 0x20132a(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000cf6 <+636>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000cfb <+641>: lea -0x30(%rbp),%rax  0x0000000000000cff <+645>: mov %rax,%rsi  0x0000000000000d02 <+648>: lea 0x201437(%rip),%rdi # 0x202140 <\_ZSt3cin@@GLIBCXX\_3.4>  0x0000000000000d09 <+655>: callq 0x8e0 <\_ZNSirsERi@plt>  0x0000000000000d0e <+660>: mov -0x30(%rbp),%eax  0x0000000000000d11 <+663>: test %eax,%eax  0x0000000000000d13 <+665>: jns 0xd2a <main+688>  0x0000000000000d15 <+667>: lea 0x215(%rip),%rsi # 0xf31  0x0000000000000d1c <+674>: lea 0x2012fd(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000d23 <+681>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000d28 <+686>: jmp 0xd79 <main+767>  0x0000000000000d2a <+688>: mov -0x30(%rbp),%eax  0x0000000000000d2d <+691>: mov %eax,%edi  0x0000000000000d2f <+693>: callq 0xe17 <\_ZSt4cbrtIiEN9\_\_gnu\_cxx11\_\_enable\_ifIXsrSt12\_\_is\_integerIT\_E7\_\_valueEdE6\_\_typeES3\_>  0x0000000000000d34 <+698>: cvttsd2si %xmm0,%eax  0x0000000000000d38 <+702>: mov %eax,-0x30(%rbp)  0x0000000000000d3b <+705>: mov -0x30(%rbp),%eax  0x0000000000000d3e <+708>: mov %eax,%esi  0x0000000000000d40 <+710>: lea 0x2012d9(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000d47 <+717>: callq 0x950 <\_ZNSolsEi@plt>  0x0000000000000d4c <+722>: jmp 0xd79 <main+767>  0x0000000000000d4e <+724>: lea 0x1ec(%rip),%rsi # 0xf41  0x0000000000000d55 <+731>: lea 0x2012c4(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000d5c <+738>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000d61 <+743>: jmp 0xd79 <main+767>  0x0000000000000d63 <+745>: lea 0x1e0(%rip),%rsi # 0xf4a  0x0000000000000d6a <+752>: lea 0x2012af(%rip),%rdi # 0x202020 <\_ZSt4cout@@GLIBCXX\_3.4>  0x0000000000000d71 <+759>: callq 0x910 <\_ZStlsISt11char\_traitsIcEERSt13basic\_ostreamIcT\_ES5\_PKc@plt>  0x0000000000000d76 <+764>: jmp 0xd79 <main+767>  0x0000000000000d78 <+766>: nop  0x0000000000000d79 <+767>: mov $0x0,%eax  0x0000000000000d7e <+772>: mov -0x8(%rbp),%rcx  0x0000000000000d82 <+776>: xor %fs:0x28,%rcx  0x0000000000000d8b <+785>: je 0xd92 <main+792>  0x0000000000000d8d <+787>: callq 0x920 <\_\_stack\_chk\_fail@plt>  0x0000000000000d92 <+792>: leaveq  0x0000000000000d93 <+793>: retq | Added 2 more menu options to determine square root and cubic root |
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