Polymorphism Decision Table

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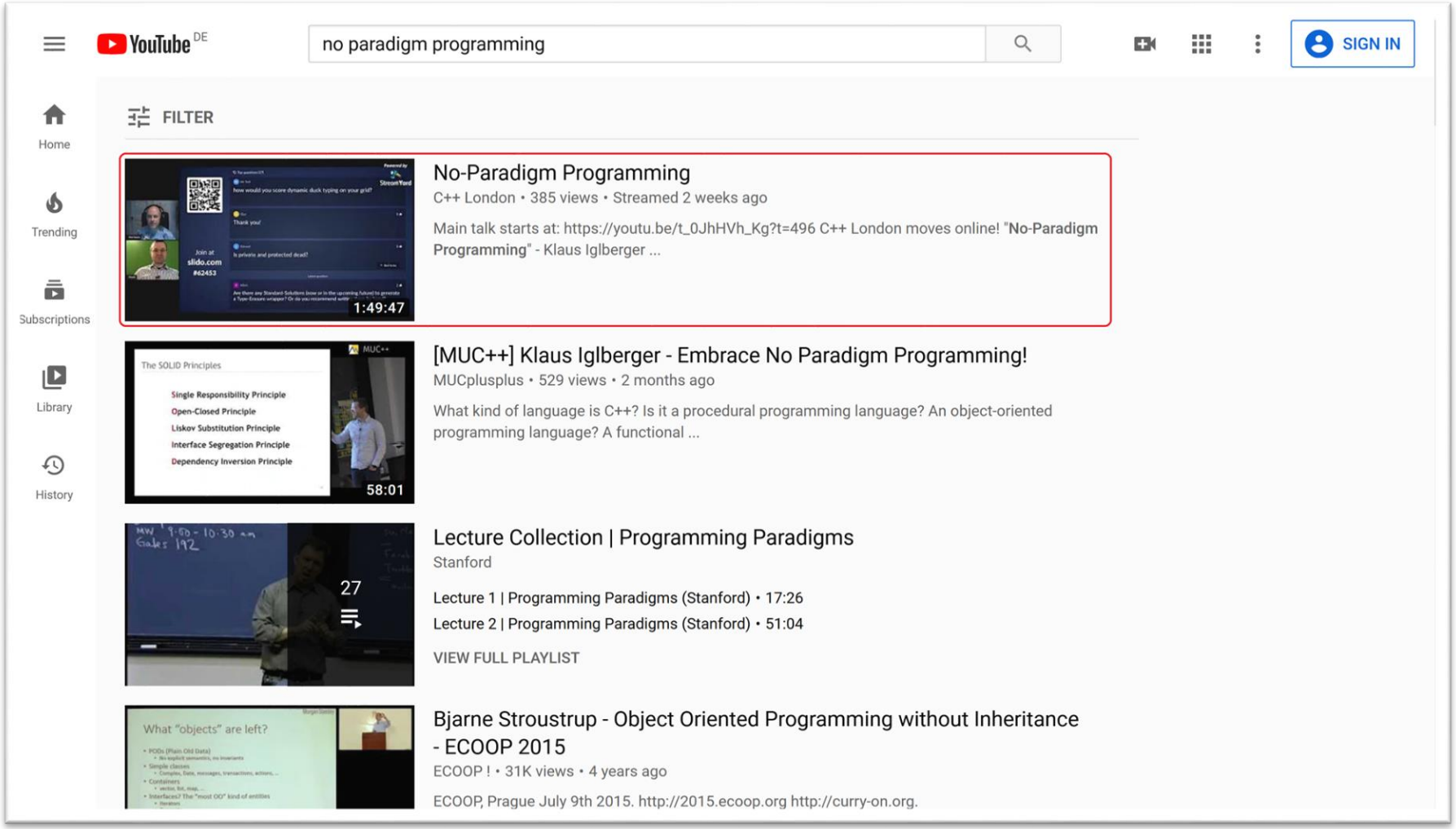
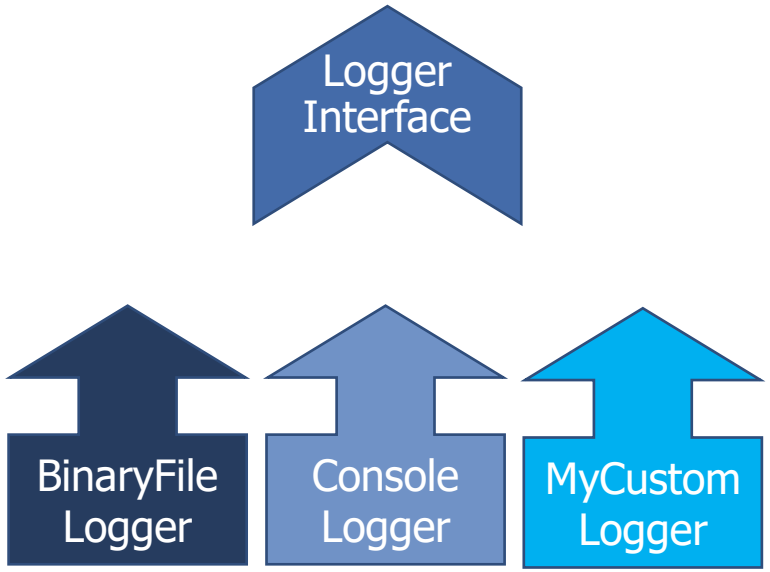
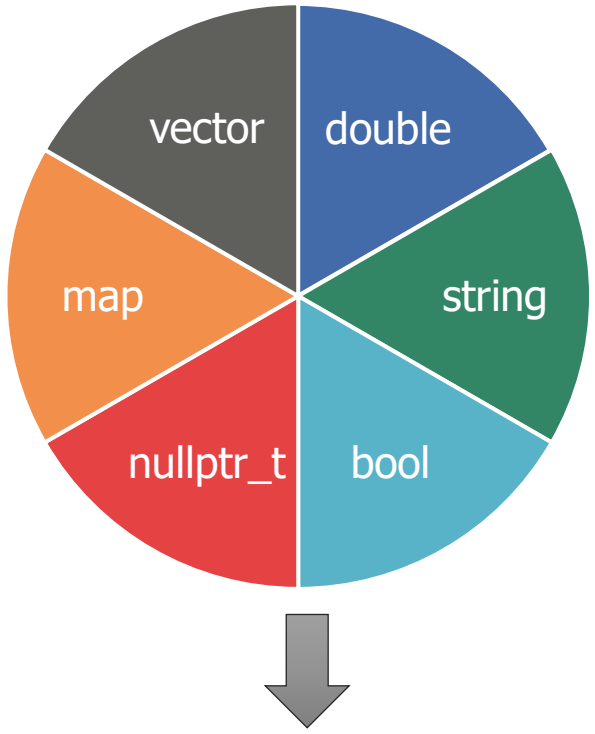
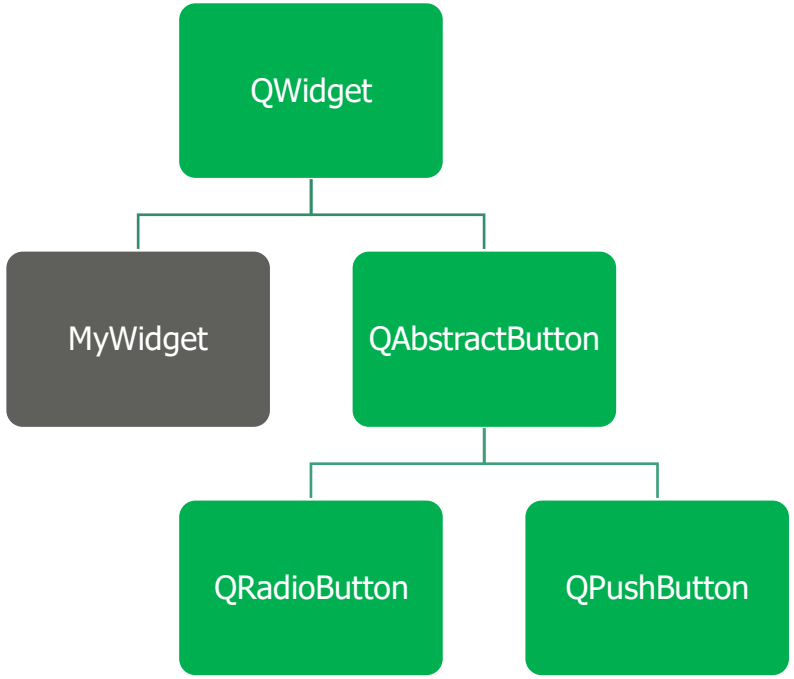
Last time at C++ London...



Poly Morphs of Polymorphism







Polymorphism Decision Table

Set of Types	CL	CL	CL	CL	CL	CL	CL	CL	OP	OP	OP	OP
Set of Functions	CL	CL	CL	CL	OP	OP	OP	OP	CL	CL	CL	CL
Semantics	VALUE	VALUE	REF	REF	VALUE	VALUE	REF	REF	VALUE	VALUE	REF	REF
Common Base-Class	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Solution	**variant**	**variant, PV**	**TER, variant <SP>**	**SP**	**variant**	**PV+HVP, variant**	**variant <SP>**	**SP+HVP, variant <SP>**	**TEV**	**PV**	**TER**	**SP**

CL closed
OP open
TEV type erasure with value semantics
TER type erasure with reference semantics
SP smart-pointer
PV polymorphic_value
HVP hand-written visitor pattern

Further Sources

- Klaus Iglberger "Embrace No-Paradigm Programming" C++ London
  https://www.youtube.com/watch?v=t_0JhHVh_Kg

- Bartek`s coding blog, "Everything You Need to Know About std::variant from C++17"
  https://www.bfilipek.com/2018/06/variant.html

- Sean Parent "Better Code: Runtime Polymorphism" NDC Conferences 2017
  https://www.youtube.com/watch?v=QGcVXgEVMJg

- Arthur O`Dwyer "Back To Basics: Type Erasure" CppCon 2019
  https://www.youtube.com/watch?v=tbUCHifyT24

- Jonathan Coe, polymorphic_value
  https://github.com/jbcoe/polymorphic_value