Part 2

Structure of Geant4 toolkit
How Geant4 runs

- Initialization
  - Construction of material and geometry
  - Construction of particles, physics processes and calculation of cross-section tables
- “Beam-On” = “Run”
  - Close geometry --> Optimize geometry
  - Event Loop
    --> More than one runs with different geometrical configurations
Initialization
Beam on

1: Beam On
2: close
3: generate one event
4: process one event
5: open

loop
Event processing

1: pop
2: process one track
3: Stepping
4: generate hits
5: secondaries
6: push
User classes

🌟 Initialization classes
- Invoked at the initialization
  - G4VUserDetectorConstruction
  - G4VUserPhysicsList

🌟 Action classes
- Invoked during the event loop
  - G4VUserPrimaryGeneratorAction
  - G4UserRunAction
  - G4UserEventAction
  - G4UserStackingAction
  - G4UserTrackingAction
  - G4UserSteppingAction