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### Comparing Waterfall Model to Agile Development Model

The two models of software development we are comparing are Waterfall and Agile Development. The idea behind Waterfall method is to develop software in stages where one cannot progress until the previous stage is complete, its simple and straightforward to use and benefits from clear visibility through direct goals and communication. The agile method on the other hand is based around teamwork and everyone working on a project at once, this will benefit from software like GitHub where everyone can contribute to a project. The agile model also emphasizes daily communication and the dividing of tasks between members.

The waterfall model is good because of its simplicity. Its lifecycle is done in clear stages where all members will be on the same page. Its simplicity ensures no one is lost or left behind. It's well documented and maintained because its foundation is very stable based on its one at a time mentality. Its weaknesses include not finishing working software until late in the development cycle. It's risky because if it's not working out you are almost committed to finish based on how long it takes to see if it works. Also due to its rigidity it's hard to accommodate rapidly changing needs or unforeseen needs.

The agile development model is about making different iterations of solutions to better fit specific needs with lots of trial and error while not committing fully to one solution. It's a very practical and realistic approach while keeping costs down for each failure. It is cheap with resources being minimal and its promotion of teamwork also helps it in the long run. It's good for rapidly changing projects or low amounts of information about the specific task you must complete. Its downsides however are that it depends heavily on customer input thus if the customer is vague it's difficult to predict what they want and then the rapid development could become wasteful. It could also be very individually dependent since each member is working with very low documentation from the others meaning that they need to eventually get it right or else they waste their work being lost to others.

In conclusion Agile method and Waterfall method are not very similar and are in fact quite opposite methods with drastically different approaches and outcomes from each other. Waterfall is very ridged and clear while having the downside of it being unadaptable while agile is free form while having the downside of low documentation and need for constant meetings to stay on the same page. Depending on the type of project either could be useful however longer projects tend to favor agile method while shorter ones prefer waterfall due to the simplicity of the approach along with the software being generated.