

Maintenance plan:

The maintenance plan of any project has to include many components that contribute and can contribute to the cost of the project over time. The Budget is a significant part of any long term and some short-term projects because if the budget is overestimated you can lose teammates or your customers. If the budget is underestimated, you lose money or could have distributed money differently. The two main types of costs a software developer should plan for are internal and external costs. Internal costs are costs that go to the developers, such as salaries, hardware and software costs and working environment costs. Since the project can't be done without the programmers, the programmers have to be paid for time and equipment. External costs are costs that allow the product to have a profit, which are influenced by the current economic and psychological factors and has to include the internal costs. The external cost is the cost that the client pays.

There are a few types of methods that have been created to help estimate time and money needed for projects. One method is called Lines of Code (LOC) which is based on a measurement of person-hour work. Other factors that LOC includes are problems in code, language type, and supporting tool. Because LOC doesn't take into account many other important factors it isn't the most reliable method for estimation. Another method called, Function Points (FP) adds more into the equation such as various item types and complexity. The formula is UFP (unadjusted function point) x TCF (technical complexity factor). While FP includes more into the equation it still lacks important elements. Finally, Agile Estimation, a larger scaled method that is used widely. Agile estimation includes these main stages; initial requirements, product size, estimated effort, a rough schedule, estimated cost, an approved estimation, then development of product.

The first step in creating a plan is to figure out how many hours and how many people you will need to complete the project. All the costs will be based off this prediction, so it is crucial that this prediction is made as accurate as possible. We need to consider the kind of server and upgrades in software the app will need over time. When apps, such as the game we made for our project 4, are first released there is usually bug fixes made right away based on user input. Even without any new features added, old code requires updates overtime with use. With apps we also need to think about hosting, monitoring, marketing, updates and having a license for our product.

Since our project took more of a direct approach, we roughly estimate the cost of development to be \$50,000. The average maintenance cost is around 15-20% of the original cost. But during the first year of releasing an app the maintenance cost can be up to 50% of the original development cost. This would add about \$25,000 during the first year just for maintenance work. Additional costs hosting which takes into respect a higher CPU with more RAM and disk space has an average of \$70 to \$320 a month. We could estimate a total of \$2,400 for the year. For the internal costs the average cost for an app developer team is around \$80,000 which would end up being 400 hours as a team, which from our expected amount of hours for our project lines up.