*Extra task 1****:***

|  |  |
| --- | --- |
| **Project duration** | **6 months** |
| **Average manual testing cost** | **30 man hrs per week** |
| Automated tests development cost: |  |
| **Framework Setup + CI configuration** | **160man/hours** |
| **Scenarios Implementation** | **40 man hours per week (4 months)** |
| **Tests Support** | **2man hrs per week (3 months)** |
| **Automated test execution & result analysis** | **8 man-hours per week (6 months)** |

*Extra task 2****:***

|  |  |
| --- | --- |
| **Project duration** | **2 years** |
| **Average manual testing cost** | **30 man hrs per week** |
| Automated tests development cost: |  |
| **Framework Setup + CI configuration** | **100man/hours** |
| **Scenarios Implementation** | **40 man hours per week (10 months)** |
| **Tests Support** | **2man hrs per week (2years)** |
| **Automated test execution & result analysis** | **2 man-hours per week (2 years)** |

The formula to calculate ROI is the next:

**ROI = (Gain from Investment - Cost of Investment) / Cost of Investment**

where: Gain from Investment – cost of manual

Cost of Investment – cost of automation

Let’s calculate ROI for the tasks above, taking in account that each month has 4 weeks (rough rounding).

Extra task 1:

Cost of manual = 30 man hours \* 24 (weeks count when we spend money) = 720 man hours

Cost of Automation = 160 man hours + 40 \* 16 (# of weeks) + 2 \* 12 + 8 \* 24 = 1016 man hours.

ROI = (720 – 1016) / 1016 = -0.29

So we can say that Automation will not save money for sure.

Extra task 2:

Cost of manual = 30 man hours \* 2 \* 12 \* 4 = 2880 man hours.

Cost of Automation = 100 + 40 \* 4 \* 10 + 2 \* 2 \* 12 \* 4 + 2 \* 2 \* 12 \* 4 = 2084 man hours.

ROI = (2880 – 2084) / 2084 = 0.38

So we can say that Automation could save the money but we’ll need to calculate more if 1 man hour of manual testing is cheaper than 1 man hour of automation testing.