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Solutions for Excercise sheet 2

Exercise 1 – Cost Estimation

i The resulting amount should be $30h * 6 = 180h$ per person, and with $1PM = 20 * 8 = 160h$ it amounts to 6.75 PMs or with five persons to 5.625 PMs.

ii

round	estimations ($KLOC_{pars}$)
0	10, 15, 14, 15
1	12, 13, 12, 10
2	12

iii We decided for small size, greater innovation, medium deadlines and stable development environment. Because of this we chose a medium project with $a = 3.0$ and $b = 1.12$.

iv

Required software reliability: nominal

Size of application database: none

Complexity of the product: nominal

Run-time performance constraints: nominal

Memory constraints: nominal

Volatility of the virtual machine env.: none

Computer turnaround time: low

Analyst capability: low

Applications experience: low

Software engineer capability: nominal

Virtual machine experience: high

Programming language experience: very low

Use of modern programming practices: low

Use of software tools: nominal

Required development schedule: nominal

parameter	chosen value
Required software reliability	1
Size of application database	-
Complexity of the product	1
Run-time performance constraints	1
Memory constraints	1
Volatility of the virtual machine env.	-
Computer turnaround time	0.87
Analyst capability	1.19
Applications experience	1.13
Software engineer capability	1
Virtual machine experience	0.9
Programming language experience	1.14
Use of modern programming practices	1.1
Use of software tools	1
Required development schedule	1

v

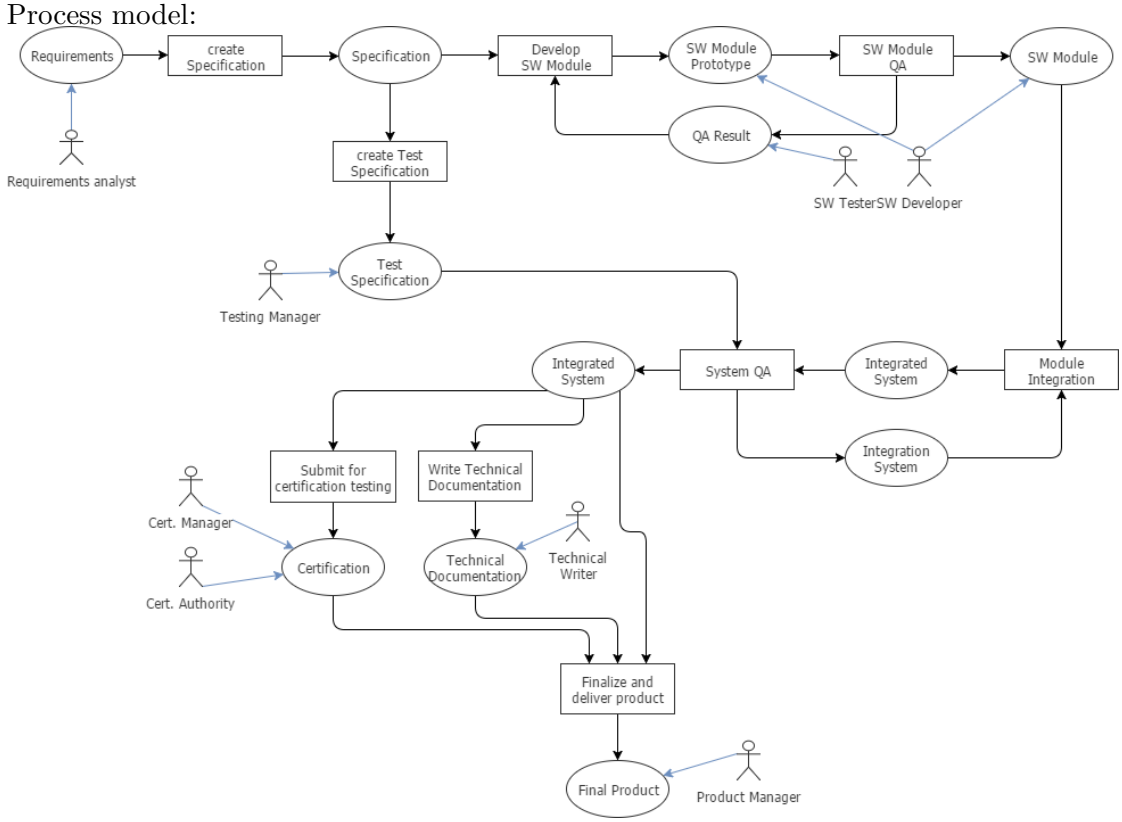
The resulting project size in PM is (with $a = 3$ and $b = 1.12$):

$$3 \cdot (12)^{1.12} \cdot (1 \cdot 1 \cdot 1 \cdot 1 \cdot 0.87 \cdot 1.19 \cdot 1.13 \cdot 1 \cdot 0.9 \cdot 1.14 \cdot 1.1 \cdot 1 \cdot 1) \approx 64$$

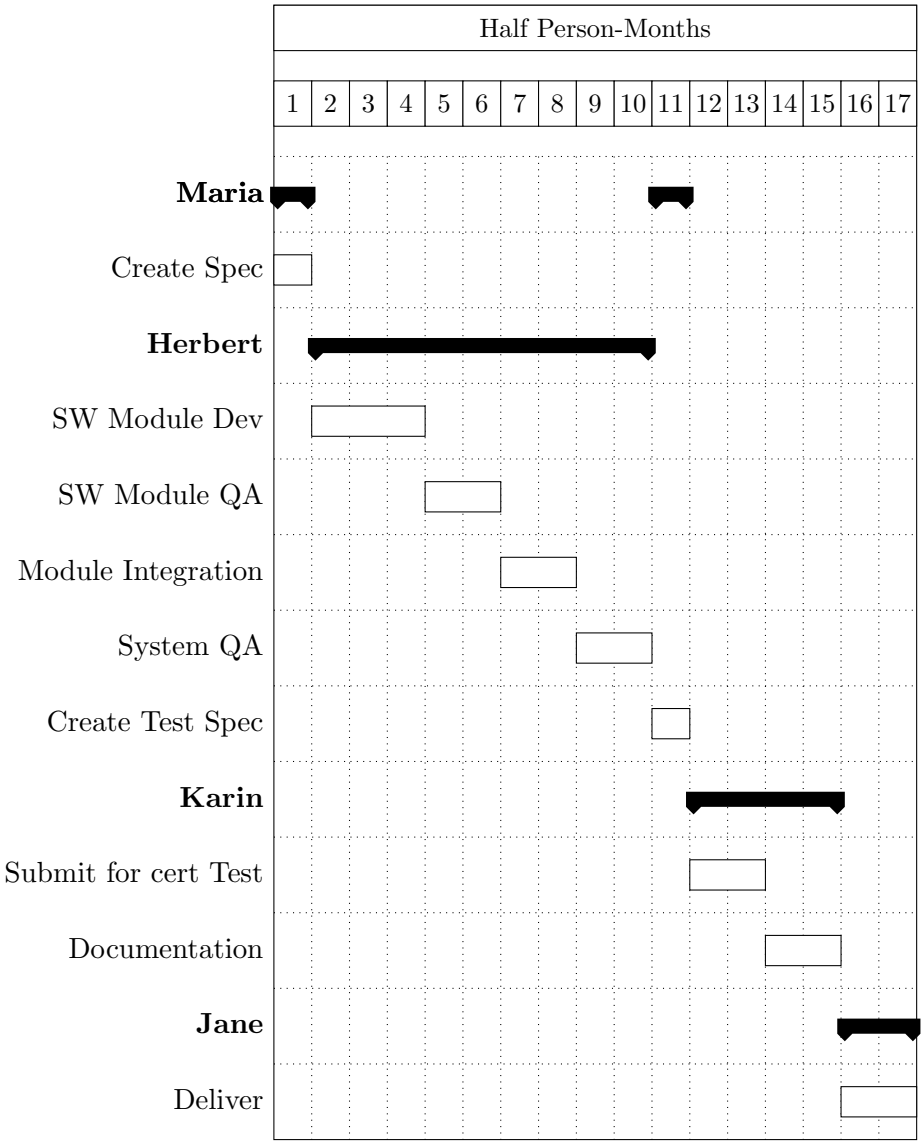
The two values differ drastically, the first is nearly a tenth of the second. This might be due to the way higher expectations of Code Quality or Project length, as well as the larger growth of smaller projects.

Exercise 2 – Process Modeling

i Process model:

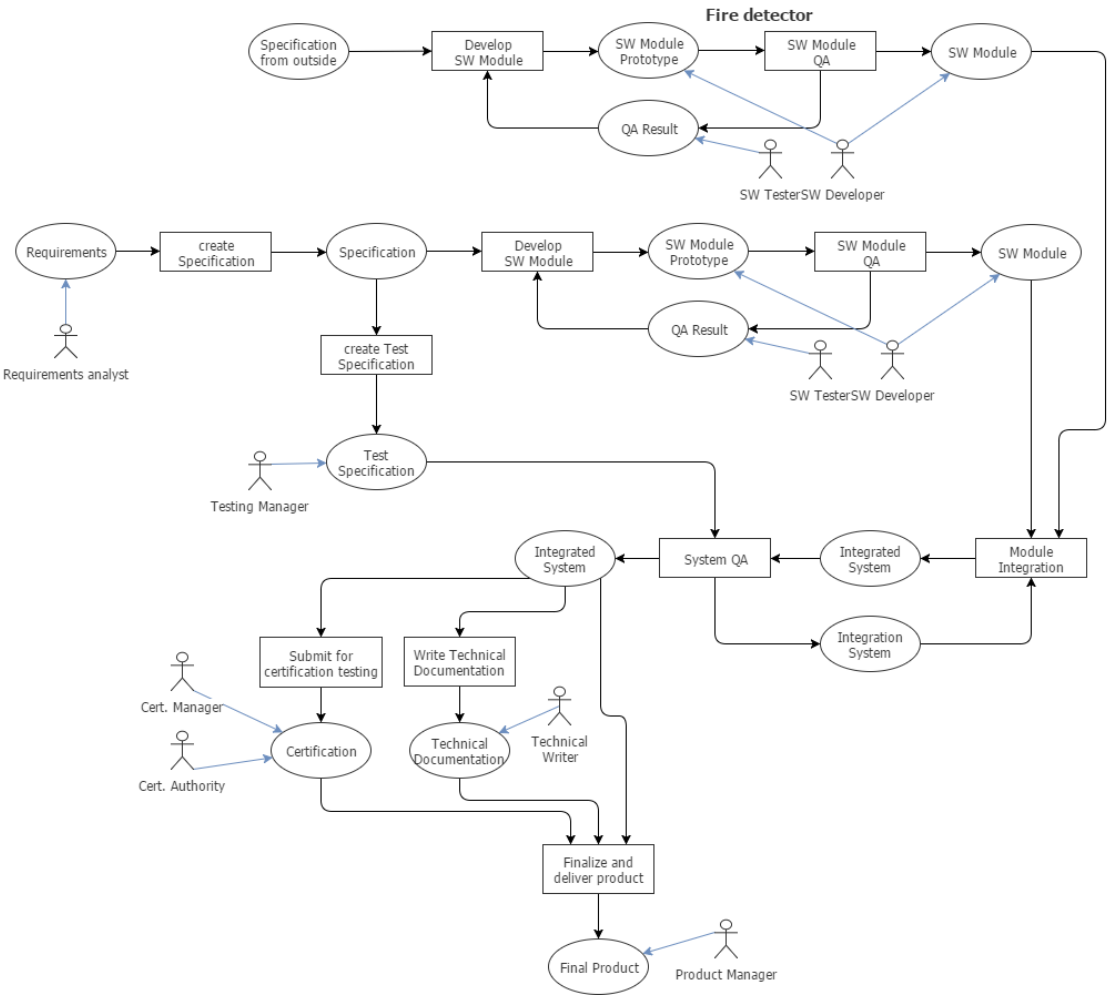


ii (Might be on next page)



I'm afraid to say that we were not capable of numbering through correctly (in half PM's) or to correctly LaTeXquarter-PM's. The used package seems to be not capable of doing so.
Effort: 5.5 PM
minimum excpected duration: 6,25 M

iii Process model with fire detector



iv Effort: 7.5 PM, minimum excpeted duration: 7.5