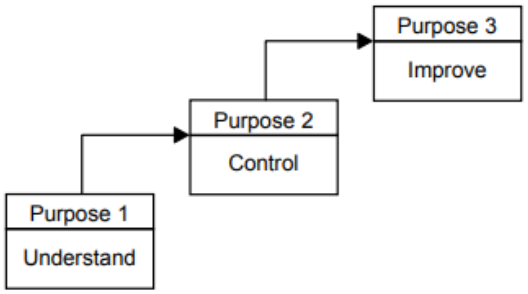
SOFTWARE PROCESS MANAGEMENT (ASSIGNMENT 1) (15 %)

The following assignment relates to the topic: *Software Process Measurement & Metrics.* Metrics can be categorized on variable grounds for example process Vs product, direct Vs indirect and dynamic Vs static metrics.

Q1. Differentiate in 50 – 100 words (any two of the following)

- A product and a process metric
- A subjective and an objective metric
- An absolute and a relative metric
- A direct and an indirect metric

Q2. Software measurement data is interpreted by different people to provide information that can be applied for three different purposes. For answering this question refer to the given diagram showing the hierarchy and architecture of measuring software processes:



i) Explain with your own understanding two typical measurement goals that have an improvement purpose (purpose 3 in the diagram)

ii) Derive from each of these goals, preconditions that should be under control (purpose 2 in the diagram). Rewrite these as indicators with a control purpose.

iii) Derive from above goals (measurement with control type) the underlying details that must be understood (purpose 1 of the diagram) before one can strive the control.

Q3. For answering this question select any one of the two cases below

Case A: The objective of a GQM measurement programme is to identify a product's reliability before it is released on the market. In this case a payment terminal which is currently under development. The payment terminal contains 10 sub-systems which are concurrently developed in a period of one year.

Case B: The objective is to identify how you can save $3000 in one year. This will allow you to purchase a personal computer. However, it is not possible to earn additional money. Your income will be exactly the same as last year. You will have to find cost savings. Sources of data are, for example, your agenda, bank notes and salary receipts.

i) Define GQM goal for this measurement programme according to the GQM goal template

ii) Define a set of GQM questions related to the measurement goal (minimum 3 questions)

iii) Check and improve these questions according to the criteria of good GQM questions

iv) Refine your GQM questions into metrics (Make a distinction between direct and indirect metrics)