CSC3003S Capstone Project, 2013

Statement of Scope [20 Marks]

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| Project Abbreviation and Name | ITSIP - Identifying and tracking shapes in an industrial process |
| Client/Supervisor | Dr Patrick Marais |
| Date | 20/7/2013 |
| Team Members | Student Number **and** First and Last Name |
|  | FRGMIC005 - Michael Ferguson |
|  | BNSJAY001 - Jay Benson |
| Overall purpose [10] | - To build a software system which can accept a number of input images and detect features of interest within each image. The features of interest will be disks of different sizes. The system is required to determine how many disks are present in a segment of the video footage. It is required to use heuristics to detect disks in a given frame and determine if they have already been seen.  - The system is required to load a sequence of images in GIF format. It then needs to process each frame of the "video feed" and identify the disks in each frame. The disks will be of varying sizes, so the system is required to categorize each identified disk into a specific category according to its radius.  - As an additional feature the system also needs to represent the detected disks via a GUI. This can be done by superimposing a coloured circle on top of the disk or outlining it.  - This system simulates an industrial process whereby a top down camera feed of a conveyor belt is analysed to detect the number of non-defective disks.  - The purpose of developing this software is also to hone our skills in image processing and object tracking in an industrial context. |
| Functions [3] | - The user accesses the system GUI via an executable application.  - The user will be able to upload the feed through the GUI.  - The user can then analyze the feed, by doing this the system will detect and categorize the disks it detects in the image.  - The user can then view the analysis of overlaid images () through a slideshow interface.  - The user can then export the analysis data of the number of disks in each category to a text file.  - The user can also export the overlaid output images from the analysis in an image format. |
| Inputs [2] | - The user uploads the feed (GIFs) through the GUI.  - The user may need to interact with the interface by clicking buttons or naming exported files etc. |
| Outputs [2] | - The user can export the category data in text file format.  -The user can export the overlaid images that are produced by the system analysis. |
| Performance [1] | - Yes, the user should not need to wait an unreasonable length of time. |
| Constraints [1] | - The system will only be able to analyse grey scale images.  - The system won't be able to analyse live streams but will only be able to analyse recorded "feeds". |
| Feasibility [1] | - The slideshow functionality in the GUI maybe limited depending on time constraints. |

**Questions regarding Statement of Scope.**

1. Does it need to be in full sentences/ paragraphs, or are bullets okay.
2. Performance?
3. Do we need to be more specific with our constraints?
4. Repeated information in functions, inputs and output. Is this okay?

- Currently using inputs and outputs to explain the functionality.