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| **STUDENT NAME AND SURNAME: .................................................................... STUDENT NUMBER: ..................................**  **LECTURER SURNAME: ……………………………………..... CLASS GROUP 3 (......)** | | | |
| **SUBJECT**  **INFORMATION SYSTEMS III MODULE A**  **PROJECT MANAGEMENT** | **DATE**  4 JUNE 2012 | **DURATION**  3 HOURS | **TOTAL MARKS**  100 |



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| **FACULTY OF INFORMATICS & DESIGN** |

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| **COURSE:** NDIPIT: INFORMATION TECHNOLOGY |
| **EXAMINER:** MR E FRANCKE  **MODERATOR:** Mr E RUHODE  **EXTERNAL MODERATOR:** MR A BERE |

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| **SPECIAL INSTRUCTIONS:**   * **tHIS IS not AN OPEN BOOK EXAM.** * **Electronic copies of the video clip are not allowed into the exam venue.** * **Question one is based on the video clip.** * **Answer all the questions in the answer book.** * **Write your lecturer’s name on the top right hand corner of the answer book.** * **Hand in the question paper inside the answer book.**  REQUIREMENTS:  * **Calculator (Cellphones or other intricate memory/storage calculators and related devices are not permitted)** |

## SECTION A (Based on the Video Clip) - 30 Marks

QUESTION 1

How is this video clip and example of an IT Project? (5)

*Project Glass is a Google company initiative to design a pair of glasses capable of doing many of the things a smartphone is capable of doing.  The idea is that the glasses will one day augment reality.*

*What is an IT Project?*

*• New or enhanced functionality to hardware, software or IT Services.*

*• Temporary endeavor with a start and finish.*

*• Creates a product or service.*

*Information Technology (IT) project characteristics include:*

*• New, or enhanced, functionality;*

*• One time activity;*

*• Begin and end date;*

*• Performed by people;*

*• Constrained by limited resources (budget);*

*• Planned;*

*• Executed; and*

*• Controlled.*

*A project is a temporary endeavor undertaken to create a unique product or service. (PMI definition: “A Guide to the Project Management Body of Knowledge (PMBOK Guide)”, page 4.*

QUESTION 2

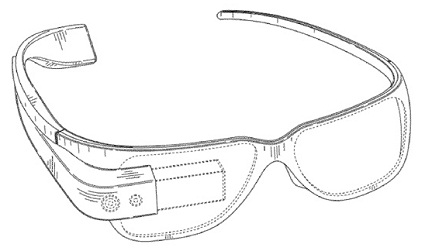
Can you propose a name for the type of technology that is being illustrated in the video clip? (2)

*Heads-up display glasses, Google Glasses, augmented reality glasses, wearable display device frame or wearable computing.*

QUESTION 3

Can you construct a model that would best describe this technology?

You may illustrate this by way of an annotated drawing or a narrative explanation. (8)



*As can be seen in the image above the Project Glass product resembles a pair of ordinary spectacles with the obvious addition of some gadgetry in one of the arms. A small display sits in front of the wearer’s right eye displaying relevant information. There is also a camera capable of catching still images and/or recording video.*

*They feature a front-facing camera with flash that the HUD only covers one eye, and that navigation is controlled by head tilts and rolls. As for what’s powering these beauties, they will be similarly-powered as a generation-old Android handset, with a 1Ghz processor, 256Mb of RAM, and 8Gb of storage. They will be Android-based, have at least a 3G data connection, and feature GPS and motion sensors.*

*A small display will be placed in the tiny arm that’s situated above the right eye of the user. This design would keep overlay graphics away from the user’s direct line of sight, alleviating any safety issues that might arise from having augmented-reality data consume a user’s field of vision.*

*These are being conceived as a wearable smartphone, and users would only wear them as and when necessary. Existing Google products will be front and center, but presented in an augmented reality view. There are some rather obvious privacy implications to the product, as wearers could be filming people without their knowledge or approval.*

QUESTION 4

Based on what you know about IT Project Management, what would be a suitable scope for this project? (5)

*The project is to design a wearable computing device with the obvious addition of some gadgetry in one of the arms. A small display will sit in front of the wearer’s right eye displaying relevant information. A camera capable of catching still images and/or recording video will also be incorporated. Images would not be displayed on the lenses of the augmented-reality headset.*

QUESTION 5

“A work breakdown structure is an extremely valuable and important project management tool. It sets the foundation for the rest of the project planning.”

In light of this, copy and complete the work breakdown structure for the project which you have identified in the video clip by filling in the missing elements as listed in the template below. (10)

Any appropriate answer

4months R14,000,000

Any appropriate answer

7months R26,000,000

Any appropriate answer

5months R20,000,000

Any appropriate answer

4months R12,000,000

Any appropriate answer

2months R6,000,000

Any appropriate answer

2months R12,000,000

*½ mark for each appropriate answer*

**SECTION B - 40 Marks**

QUESTION 1

In her book, Information Technology Project Management, 6th Edition Kathy Schwalbe identifies five distinct processes involved with Project Scope Management. Name and describe these processes involved with Project Scope Management (10)

* ***Scope planning/collecting requirements****:**defining and documenting the features and functions of the products produced during the project as well as the processes used for creating them*
* ***Defining scope****: reviewing the project charter, requirements documents, and organizational process assets to create a scope statement*
* ***Creating the WBS****: subdividing the major project deliverables into smaller, more manageable components*
* ***Verifying scope****: formalizing acceptance of the project deliverables*
* ***Controlling scope****:**controlling changes to project scope throughout the life of the project*

QUESTION 2

The year is 2015 and times are good in South Africa. The business environment is vibrant and the economy is strong. Big businesses are committing huge amounts of capital and resources to implement new strategies, establish new capabilities, and open new markets. It was no different at PutCo, a software house specializing in the development of Customer Relationship Management (CRM) packages.

Vuyo walked into work on Monday morning like any other. He dropped his briefcase in his office, grabbed a cup of coffee and headed down the hall to meet with his boss, Brandon, about one of the company's potential IT projects. Although Vuyo had substantial experience, he had only recently joined PutCo after graduating with an MTech in IT at CPUT.

Brandon and Vuyo got to the topic at hand. " Vuyo, I'll get straight to the point. I need you to take over the CRM project from Paul." Brandon continued, "We hired you because of your significant IT project management expertise. I know that you've project managed many more difficult projects than this." Over an hour later, Vuyo emerged from Brandon's office and set out to learn more about the challenge that Brandon had posed to him.

Vuyo had previously seen more than his fair share of difficult projects; some he managed well while others had spun hopelessly out of control. He would have to make a success of this one…

*Adapted from…* [*http://www.projectsmart.co.uk/a-tale-of-two-projects.html*](http://www.projectsmart.co.uk/a-tale-of-two-projects.html)

* 1. Help Vuyo plot the project baseline for this CRM project based on the following monthly expenses which will take 12 months to complete. (20)

|  |  |  |
| --- | --- | --- |
|  | Monthly Cost | **Cumulative Cost** |
| January | R 50,000.00 | **R 50,000.00** |
| February | R 150,000.00 | **R 200,000.00** |
| March | R 350,000.00 | **R 550,000.00** |
| April | R 425,000.00 | **R 975,000.00** |
| May | R 525,000.00 | **R 1,500,000.00** |
| June | R 650,000.00 | **R 2,150,000.00** |
| July | R 725,000.00 | **R 2,875,000.00** |
| August | R 975,000.00 | **R 3,850,000.00** |
| September | R 1,800,000.00 | **R 5,650,000.00** |
| October | R 2,050,000.00 | **R 7,700,000.00** |
| November | R 1,750,000.00 | **R 9,450,000.00** |
| December | R 550,000.00 | **R 10,000,000.00** |

* 1. Calculate and plot the project’s performance on the chart above when after 5 months, you have completed 12.5% of the project at a total expense of R2,000,000. The planned completion should have been 15.5 %. (5)

*BAC = R10,000,000*

*AC = R2,000,000*

*Planned Value = Planned Completion (%) \* BAC*

*Planned Value= 15. % \* R10,000,000 = R 1,550,000*

*Earned Value = Actual Completion (%) \* BAC*

*Earned Value = 12.5 % \* R10,000,000 = R 1,250,000*

R1,250,000

* 1. Calculate and plot the variance at completion on the chart if the project continues to run in this way after the fifth month. (5)

*Cost Performance Index = EV / AC = R 1,250,000/ R2,000,000= 0.625*

*Estimate at Completion (EAC) = BAC / CPI*

*EAC= R 10,000,000/ 0.625 = R 16,000,000.*

*Variance at Completion (VAC) = BAC – EAC*

*VAC= R 10,000,000- R 16,000,000=- R6,000,000*

**Cost Variance**

**SECTION C - 30 Marks**

QUESTION 1

The following table information for a software development project for which you are the project manager:

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Description** | **Predecessor** | **Duration (Days)** |
| A | Develop Project Charter | None | 5 |
| B | Network Configuration | A | 10 |
| C | Hardware Procurement | A | 10 |
| D | Hiring | A | 20 |
| E | Verify and Validate User Requirements | A | 15 |
| F | Create detailed Scope Statement | A | 10 |
| G | Systems Customisation | C, D, E, F | 5 |
| H | Implementation and Testing | B, G | 10 |
| I | User Training | H | 5 |
| J | System Handover | I | 5 |

Using the following node layout:

|  |  |  |
| --- | --- | --- |
| ES | ID | EF |
| S | Descr | |
| LS | D | LF |

Where:

ES = Early Start; EF = Early Finish; LS = Late Start; LF = Late Finish;

ID = Activity; D = Duration; Desr = Description

* 1. Draw a complete network activity diagram (arrow-on-arrow), showing all values in each node (25)
  2. Identify the critical path (1)

1.3 You suspect that your sponsor will not agree to the duration of your project, explain how you would shorten the project schedule (4)

* 1. (25 Marks)

½ mark for each calculated value.



1.2 ADGHIJ is the Critical Path (1)

1.3 One of the two techniques will be recommended:

Crashing - means to throw additional resources to the critical path without necessarily getting the highest level of efficiency. The resources are normally obtained from slacks in the non-critical activities (2)

Fast tracking - you look at activities that are normally done in sequence and assign them instead partially in parallel. For instance, normally you would not start constructing a solution until the design was completed. However, if you were fast-tracking, you would start constructing the solution in areas where you felt the design was pretty solid without waiting for the entire design to be completed (2)