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**KOLEJ SYNERGY**

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**FINAL YEAR PROJECT**

**(PROPOSAL)**

**“TINKERING VENDING MACHINE (TVM)”**

PREPARED BY:

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SUPERVISOR: LAI YEN PING

**KOLEJ SYNERGY**

**PROGRAMMING DEPARTMENT**

**DIPLOMA KEMAHIRAN MALAYSIA**

**APPROVAL OF FINAL YEAR PROJECT PROPOSAL**

With this proposal recognized that this project has been approved for development.

Project Coordinator,

……………………………………

Name:Miss. Gevita Chinnaiah

Date :

Hereby acknowledged that the projects are the responsibility of the supervisor appointed.

Project Supervisor,

………………………………………..

Name: MR LAI YEN PING

Date :

# ORGANIZATION CHART

GROUP MEMBER

YEAN AIK ZHE

KHOO ZHOUNG XYU

COORDINATOR

Miss. Gevita Chinnaiah

SUPERVISOR

LAI YEN PING

GROUP LEADER

CHENG CHIA CHIN

# GROUP MEMBER

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B.EL5785.08/15

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B.EL5365.04/16

# WORK SEPARATION

|  |  |  |
| --- | --- | --- |
| **MEMBER** | **POSITION** | **RESPONSIBILITY** |
| CHENG CHIA CHIN | Web development | Troubleshoot  Design interface  Prepare Presentation  Prepare Proposal  Program Code development  Create hosting server |
| YEAN AIK ZHE | Web development | Troubleshoot  Design interface  Prepare Presentation  Prepare Proposal  Identify project  Prepare documentation |
| KHOO ZHOUNG XYU | Web development | Troubleshoot  Design interface  Prepare Presentation  Prepare Proposal  Identify project  Testing function  Prepare documentation |

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# ABSTRACT

In 21-century, human are highly intelligent creatures. Uncivilized from the previous era slowly into the high-tech era. There are got many kind of high technology gadget that uses to make our life easier. These technologies were built by the component that never gets expired in the time.Cleanliness will affect human life. Every day of the week will clean their homes, from this point, we intend to use our knowledge to create an electronic product that can help in their daily lives, to reduce some of their burden, saving time and energy. As the volume aspect the smaller is better, most of the people are greedy convenient. The more compact of the product, the more technical problem that encounter. This will be my first step of my plan. In this proposal will be explain everything about this electronic product from external to internal.

# CHAPTER 1

# INTRODUCTION

## INTRODUCTION

Electronics product is made for hardware and software, electronics is now so pervasive that it's almost easier to think of things that don't use it than of things that do.

Entertainment was one of the first areas to benefit, with radio (and later television) both critically dependent on the arrival of electronic components. Although the telephone was invented before electronics was properly developed, modern telephone systems, cell phone networks, and the computers networks at the heart of the Internet all benefit from sophisticated, digital electronics.

Now day technology are advance, most product can function automatic, this can be solved not enough service staff and 24 hours service. Now we introduce our product is Vending Machine.

Forum is a

## 1.2

In this project we have some point to solve before make our ideal became truth

* 24VDC powered.
* Arduino Mega.
* Stepper Motor.
* LCD IC.
* Keypad.
* Arduino Mega.
* RFID-RC522.

## OBJECTIVE

Our team start doing this project, we have made some planning first to confirm what benefits that our project can bring. Doing a final project requires a lot of preparation and teamwork, such as to test our knowledge and our understanding about all the things we have learned.

* Everywhere can be placed.
* Do not worries shop are closed
* To produce an easy use machine to customer.
* Automatic trade*no staff service required*

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## 1.4 METHODOLOGY

1. Find project idea on internet.
2. Identify project name and prepare proposal.
3. Research about circuit and mechanical.
4. Design mechanical part.
5. Purchase component, equipment and hardware material.
6. Built the circuit with casing.
7. Construct the circuit with casing.
8. Troubleshoot.
9. Prepare all documentation about project.
10. Prepare power point for presentation.

# CHAPTER 2

# EXECUTIVE SUMMARY

## 2.1 EXECUTIVE SUMMARY

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Criteria** | **Traditional authorization** | **RE-design authorization** |
| 1 | Low Price | **X** | **O** |
| 2 | Safety | **O** | **O** |
| 3 | Save Energy | **X** | **O** |

Table 1

## 2.2 PROJECT SUMMARY

The purpose of this summary is to show about to show the development of our Tinkering Vending Machine (TVM). The summaries are statistics all data and survey before we start to develop the TVM, including the price and material. TVM are going to develop to change automatic service, combine the new technology with the basic features to improve practicability. The coin acceptor provides 8VDC, 1A to function, The Arduino with servo motor 6VDC, 1.5A to function. The casing we plan use wood to design. Our project cheaper reason is use cheaper and good quality material. Our team will try to use lower budget to create a high quality.

# CHAPTER 3

# Software requirement



***Microsoft Office Project 2003***

Microsoft Project is a project management software product, developed and sold by Microsoft. It is designed to assist a project manager in developing a plan, assigning resources to tasks, tracking progress, managing the budget and analyzing workloads.

Microsoft Project was the company’s third Microsoft Windows-based application and within a couple of years of its introduction it became the dominant PC-based project management software.

It is part of the Microsoft Office family but has never been included in any of the Office suites. It is available currently in two editions, Standard and Professional. Microsoft Project’s proprietary file format is mpp.

Microsoft Project and Microsoft Project Server are the cornerstones of the Microsoft Office enterprise project management (EPM) product.



***Microsoft Office Power Point 2007***

Microsoft PowerPoint is a presentation program created by Robert Gaskins and Dennis Austinat a software company named Forethought, Inc. It was released on April 20, 1987, initially for Macintosh computer. Microsoft acquired PowerPoint for $14 million three months after it appeared. This was Microsoft’s first significant acquisition and Microsoft set up new business unit for PowerPoint in Silicon Valley where Forethought had been located.

PowerPoint became a component of the Microsoft Office suite, first offered in 1989 for Macintosh in 1990 for Window which bundled several Microsoft apps. Beginning with PowerPoint 4.0 (1994), PowerPoint was integrated into Microsoft Office development and adopted shared common components and a converged user interface.

PowerPoint’s market share was very small at first, prior to introducing a version for Microsoft Window but grew rapidly with the growth of Window Office.

(pp402-404) Since the late 1990s, PowerPoint’s worldwide market share of presentation software has been estimated at 95 percent.

PowerPoint was originally designed to provide visuals for group presentation within business organization but has come to be very widely used in many other communication situation both in business and beyond. The impact of this much wider use of PowerPoint has been experienced as a powerful change throughout society with strong reaction including advice that it should be used less should be used differently or should be used better.

The first PowerPoint version (Macintosh 1987) was used to produce overhead transparencies the second (Macintosh 1988, Windows 1990) could produce color 35mm slides. The third version (Windows and Macintosh 1992) introduced video output of virtual slideshow to digital projectors which would over time completely replace physical transparencies and slides. A dozen major version since then have added many additional features and modes of operation and have made PowerPoint available beyong Apple Macintosh and Microsoft Windows adding version for ios, Android and web access.



***Microsoft Office Word 2013***

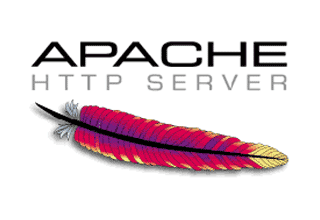
Microsoft Word is a word processor developed by Microsoft. It was first released on October 25, 1983 under the the name Multi-Tool Word for Xenix system. Subsequent version were later written for several other platform including IBM PCs running DOS (1983), Apple Macintosh running Classic Mac OS (1985), AT&T Unix PC (1985), Atari ST (1988), OS/2 (1989), Microsoft Windows (1989), SCO Unix (1994) and macOS (2001). Commercial version of Word are licensed as a standalone product or as a component of Microsoft Office, Windows RT or the discontinued Microsoft Work suite. Microsoft Word Viewer and Office Online are freeware edition of Word with limited features.



***MySQL Server***

MySQL (Officially pronounced as /maɪ ˌɛskjuːˈɛl/ "My S-Q-L",) is an open-source relational database management system (RDBMS). Its name is a combination of “My” the name of co-founder Michael Widenius’s daughter and “SQL” the abbreviation for Structured Query Language. The MySQL development project has made its source code available under the terms of the GNU General Public License as well as under a variety of proprietary agreement. MySQL AB now owned by Oracle Corporation.[9] For proprietary use, several paid edition are available and offer additional functionality.

MySQL is a central component of the LAMP open-source web application software stack (and other “AMP” stack). LAMP is an acronym for “Linux, Apache, MySQL, Perl/PHP/Python”. Application use the MySQL database include: TYPO3, MODx, Joomla, WordPress, Simple Machines Forum, phpBB, MyBB and Drupal. MySQL used in many high-profile, large-scale website including Google (though not for searches), Facebook, Twitter, Flickr and Youtube.



***Apache HTTP Server***

The Apache HTTP Server, colloquially called Apache is free and open-source cross-platform web server software, released under the terms of Apache License 2.0. Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation.

The Apache HTTP Server is cross-platform as of 1 June 2017 92% of Apache HTTPS Server copies run on Linux distribution. Version 2.0 improved support for non-Unix operating system such as Windows and OS/2. Old version of Apache were ported to run on OpenVMSand NetWare.

Originally based on the NCSA HTTPd server, development of Apache began in early 1995 after work on the NCSA code stalled. Apache played a key role in the initial growth of the World Wide Web.[8] quickly overtaking NCSA HTTPd as the dominant HTTP server has remained most popular since April 1996. In 2009 it became the first web server software to serve more than 100 million website. As of July 2016, it was estimated to serve 46% of all active website and 43% of the top million website.



***Sublime Text***

Sublime Text is a shareware cross-platform source code editor with a Python application programming interface (API). It natively supports many programming languages and markup languages, and functions can be added by users with plugins, typically community-built and maintained under free-software licenses.

Sublime Text 2.0.2 was released on 8 July 2013. Changes from the first version of the software as promoted by Skinner on the official Sublime blog include Retina display support and "Quick Skip Next" functionality.

**2.2 HARDWARE USED AND COSTS**



***Laptop (HP Pavilion)***

A laptop, often called a notebook or "notebook computer", is a small, portable personal computer with a "clamshell" form factor, an alphanumeric keyboard on the lower part of the "clamshell" and a thin LCD or LED computer screen on the upper part, which is opened up to use the computer. Laptops are folded shut for transportation, and thus are suitable for mobile use.Although originally there was a distinction between laptops and notebooks, the former being bigger and heavier than the latter, as of 2014, there is often no longer any difference. Laptops are commonly used in a variety of settings, such as at work, in education, in playing games, Internet surfing, for personal multimedia and general home computer use.

A standard laptop combines the components, inputs, outputs, and capabilities of a desktop computer, including the display screen, small speakers, a keyboard, hard disk drive, optical disc drive pointing devices (such as a touchpad or trackpad), a processor, and memory into a single unit. Most modern laptops feature integrated webcams and built-in microphones, while many also have touchscreens. Laptops can be powered either from an internal battery or by an external power supply from an AC adapter. Hardware specifications, such as the processor speed and memory capacity, significantly vary between different types, makes, models and price points.

Design elements, form factor and construction can also vary significantly between models depending on intended use. Examples of specialized models of laptops include rugged notebooks for use in construction or military applications, as well as low production cost laptops such as those from the One Laptop per Child (OLPC) organization, which incorporate features like solar charging and semi-flexible components not found on most laptop computers. Portable computers, which later developed into modern laptops, were originally considered to be a small niche market, mostly for specialized field applications, such as in the military, for accountants, or for traveling sales representatives. As portable computers evolved into the modern laptop, they became widely used for a variety of purposes.



***Printer Brother MFC – J625DW***

In computing a printer is a peripheral device which makes a persistent human-readable representation of graphics or text on paper.The first computer printer design was a mechanically driven apparatus by Charles Babbage for his difference engine in the 19th century; his mechanical printer design was not built until 2000.The first electronic printer was the EP-101, invented by Japanese company Epson and released in 1968. The first commercial printers generally used mechanisms from electric typewriters and Teletype machines. The demand for higher speed led to the development of new systems specifically for computer use. In the 1980s were daisy wheel systems similar to typewriters, line printers that produced similar output but at much higher speed, and dot matrix systems that could mix text and graphics but produced relatively low-quality output. The plotter was used for those requiring high quality line art like blueprints.

The introduction of the low-cost laser printer in 1984 with the first HP LaserJet, and the addition of PostScript in next year's Apple LaserWriter, set off a revolution in printing known as desktop publishing. Laser printers using PostScript mixed text and graphics, like dot-matrix printers, but at quality levels formerly available only from commercial typesetting systems. By 1990, most simple printing tasks like fliers and brochures were now created on personal computers and then laser printed; expensive offset printing systems were being dumped as scrap. The HP Deskjet of 1988 offered the same advantages as laser printer in terms of flexibility, but produced somewhat lower quality output (depending on the paper) from much less expensive mechanisms. Inkjet systems rapidly displaced dot matrix and daisy wheel printers from the market. By the 2000s high-quality printers of this sort had fallen under the $100 price point and became commonplace.

The rapid update of internet email through the 1990s and into the 2000s has largely displaced the need for printing as a means of moving documents, and a wide variety of reliable storage systems means that a "physical backup" is of little benefit today. Even the desire for printed output for "offline reading" while on mass transit or aircraft has been displaced by e-book readers and tablet computers. Today, traditional printers are being used more for special purposes, like printing photographs or artwork, and are no longer a must-have peripheral.

Starting around 2010, 3D printing became an area of intense interest, allowing the creation of physical objects with the same sort of effort as an early laser printer required to produce a brochure. These devices are in their earliest stages of development and have not yet become commonplace.



***Thumb Drive***

A USB flash drive, also variously known as a thumb drive, pen drive, jump drive, disk key, disk on key, flash-drive, memory stick or USB memory,[a] is a data storage device that includes flash memory with an integrated USB interface. It is typically removable, rewritable and much smaller than an optical disc. Most weigh less than an ounce (approx. 30g). Since first appearing on the market in late 2000, as with virtually all other computer memory devices, storage capacities have risen while prices have dropped. As of March 2016, flash drives with anywhere from 8 to 256 GB are frequently sold; less frequent are 512 GB and 1 TB units. Storage capacities as large as 2 TB are planned, with steady improvements in size and price per capacity expected. Some allow up to 100,000 write/erase cycles, depending on the exact type of memory chip used, and are thought to last between 10 and 100 years under normal circumstances. shelf storage time.



***Logitech Mouse***

A computer mouse is a hand-held pointing device that detects two-dimensional motion relative to a surface. This motion is typically translated into the motion of a pointer on a display, which allows a smooth control of the graphical user interface. The first public demonstration of a mouse controlling a computer system was in 1968. Originally wired to a computer, modern mice are often cordless, relying on short-range radio communication with the connected system. Mice originally used a ball rolling on a surface to detect motion, but modern mice often have optical sensors that have no moving parts. In addition to moving a cursor, computer mice have one or more buttons to allow operations such as selection of a menu item on a display. Mice often also feature other elements, such as touch surfaces and "wheels", which enable additional control and dimensional input.

# CHAPTER 4

# SPECIPICATION LIST

**2.1 SOFTWARE USED AND COSTS**

|  |  |  |
| --- | --- | --- |
| **NO** | **SOFTWARE** | **COST** |
| **1.** | **Microsoft Office Word 2013** | **RM300.00** |
| **2.** | **Microsoft Office Project 2013** | **RM100.00** |
| **3.** | **Microsoft Office Power Point 2007** | **RM300.00** |
| **4.** | **Microsoft Office Visio 2003** | **RM300.00** |
| **5.** | **Apache HTTP Server** | **-** |
| **6.** | **MySQL Server** | **-** |

**Table 2.1**

|  |  |  |
| --- | --- | --- |
| **NO** | **HARDWARE** | **COST** |
| **1.** | **Laptop** | **RM2100.00** |
| **2.** | **Printer** | **RM480.00** |
| **3.** | **Logitech Mouse** | **RM60.00** |
| **4.** | **Pendrive** | **RM30.00** |

**Table 2.2**

|  |  |  |
| --- | --- | --- |
| **SOFTWARE COST** | **HARDWARE COST** | **TOTAL COST** |
| **RM1000** | **RM2670** | **RM3670** |

**Table 2.3**

# CHAPTER 5

# PROTOTYPE

## Software PROTOTYPING — Worth or Not? | by Khushaly Mekhîya | Content Writing | Medium

## 6.0 SYSTEM FUNCTION



Figures 7

# CHAPTER 7

# GANTT CHART

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No | Activity | July/October | | | | November | | | | December | | | | Jan | | | |
|
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 1 | Definition |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1.1 | Discussing Project |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1.2 | Marketing Research |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1.3 | Precedence Studies |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1.4 | Proposal |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Planning |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.1 | Design Treatment |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.2 | Target Audience |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | Implementation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.1 | Purchase Component |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.2 | Circuit Assemble |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.3 | Hardware Assemble |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.4 | Troubleshooting |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | Completion |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.1 | Technical Report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.2 | Submit Thesis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.3 | Presentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# CHAPTER 8

# CONCLUSION

I wish our project can be easy to use and make everyone convenience in life. This project can give us a chance to experience and learns what cannot be gain during lectures or tutorials.

We hope with this project can improved our knowledge and skills. Finally, this project helped understanding wonderful of electronic and mechanical, and giving us understanding about importance of teamwork. In overall, it was a great experience for us to make this project.

# CHAPTER 10

# REFERENCE

**Website:**

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[www.electronicschematic.com](http://www.electronicschematic.com)

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