Teach the Children IT

Course Document

The IT Race
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Administrative Matter

Objective of workshop:
To give the participants an experience of the IT spectrum.

Activities coverage:

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<tr>
<th>Hardware</th>
<th>Software</th>
<th>Soft Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making of Cables</td>
<td>Adobe PhotoShop</td>
<td>Microsoft PowerPoint</td>
</tr>
</tbody>
</table>

Workshop Agenda:

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0900</td>
<td>Registration SIS NSR Big Step</td>
</tr>
<tr>
<td>0930</td>
<td>Introduction</td>
</tr>
<tr>
<td>0940</td>
<td>Station 1 begins</td>
</tr>
<tr>
<td>1040</td>
<td>Station 2 begins</td>
</tr>
<tr>
<td>1140</td>
<td>Station 3 begins</td>
</tr>
<tr>
<td>1215</td>
<td>Prize Giving</td>
</tr>
<tr>
<td>1230</td>
<td>Lunch SIS Concourse</td>
</tr>
<tr>
<td>1330</td>
<td>Closing SIS Concourse</td>
</tr>
</tbody>
</table>

List of Instructors & Background

<table>
<thead>
<tr>
<th>Instructors</th>
<th>Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miss Agnes Ang</td>
<td>Holding the Diploma of Business IT, Miss Agnes graduated from Singapore Polytechnic. She is experience in MS PowerPoint and has used it from various presentations during her poly years and as an SMU under-grad. Being an under-grad in SMU, Miss Agnes is concern of thinking out of box using MS PowerPoint.</td>
</tr>
<tr>
<td>Miss Shelly G</td>
<td>Holding the Diploma of Business Computing, Miss Shelly graduated from Republic Polytechnic. Miss Shelly is keen in designing work and has spent much time designing her Final Year Project during the last year of her poly time. Despite of being a busy under-grad, Miss Shelly still spends time working on her design work.</td>
</tr>
<tr>
<td>Miss Ye</td>
<td>Holding the Diploma of Business Computing, Miss Ye graduated from Republic Polytechnic. Miss Ye, a former Networking Interest Group member back in her poly years is interested to impart IT knowledge to those who share the same interest as her. As a SMU under-grad, Miss Ye enjoys working with people in the IT-field.</td>
</tr>
</tbody>
</table>
Station 1

Objective:
To allow student to learn more about one of the fundamental IT element; cables. In this station, students will learn some basic knowledge of cables. To make learning more realistic, there will be a hand-on experiment for participants.

Description:
The following tasks will be performed at station 1.

Part 1: Theory
(a) Straight cable
(b) Crossover cable
(c) The difference between straight and crossover cables
(d) The purpose of different type of cables
(e) Color code standard (Diagram)
(f) Name of tools

Part 2: Hand-on
(a) Making of straight cable

Instructor:
Miss Ye
Scenario 1

Chavy is a new student in SMU. Being a student, Chavy brings his laptop to school everyday to his research, check his mails and chat with his friends.

On night, while he was preparing for his final exam in school, he found that he could not connect to the school wireless. He was very worry as he still has a lot of research to do. The first thing that he thought of is to seek help from CIT. However, the CIT has already closed.

Being despair, Chavy decided to make his own cable to connect to the LAN point.

Can you use the tools provided to help Chavy?
Part 1: Theory

Straight Cable

Straight Cables are used when you want to connect your computer/ laptop to a LAN point.

Crossover Cable

Crossover cables are used when you want to connect a PC to another PC.

Different between the two cables

<table>
<thead>
<tr>
<th>Usage</th>
<th>Straight Cable</th>
<th>Crossover Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usage</td>
<td>PC to LAN point</td>
<td>PC to PC</td>
</tr>
<tr>
<td></td>
<td>PC to Hub</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC to Switch</td>
<td></td>
</tr>
</tbody>
</table>

In the cable:

- **PC** - TX+1, TX-2, RX+3, RX-6
- **HUB** - 1 RX+, 2 RX-, 3 TX+, 6 TX-
- **1 RX+** - 1 RX+, 2 RX-, 3 TX+, 6 TX-
- **CROSSOVER** - 1 TX+, 2 TX-, 3 RX+, 6 RX-
- **PC** - 4, 5, 7, 8
- **1 TX+** - 4, 5, 7, 8
- **2 TX-** - 4, 5, 7, 8
- **3 RX+** - 4, 5, 7, 8
- **6 RX-** - 4, 5, 7, 8
- **6 RX+** - 4, 5, 7, 8
- **7** - 4, 5, 7, 8
- **8** - 4, 5, 7, 8
**Color code standard**

<table>
<thead>
<tr>
<th>Straight Through Cable</th>
<th>Color Code</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin 1</td>
<td>white orange</td>
<td></td>
</tr>
<tr>
<td>Pin 2</td>
<td>orange</td>
<td></td>
</tr>
<tr>
<td>Pin 3</td>
<td>white green</td>
<td></td>
</tr>
<tr>
<td>Pin 4</td>
<td>blue</td>
<td></td>
</tr>
<tr>
<td>Pin 5</td>
<td>white blue</td>
<td></td>
</tr>
<tr>
<td>Pin 6</td>
<td>green</td>
<td></td>
</tr>
<tr>
<td>Pin 7</td>
<td>white brown</td>
<td></td>
</tr>
<tr>
<td>Pin 8</td>
<td>brown</td>
<td></td>
</tr>
</tbody>
</table>

Please note that Pin 1 is always on the left of the hook.

**Name of Tools**

1. Connectors – Registered Jack, RJ 45

2. Stripper - A tool to strip the ends off the wires. There are several specialized tools, which can be used to strip the jackets off of cabling. If you do not have access to one of these tools, cautious use of a razor blade or knife should work just fine - but keep in mind if you go the razor blade / knife route, extra special care must be used as to not damage the wires inside the jacket.

3. Crimper – A crimping tool.

4. Cutters - You need a pair of cutters that will allow you to cut a group of cables in a straight line. It is very important that all the wires are the same lengths, and without proper cutters, this can be a difficult task.
Part 2: Hand-On

Making of Cable- Step by step

1) - Start by stripping off about 2 inches of the plastic jacket off the end of the cable. Be very careful at this point, as to not nick or cut into the wires, which are inside. Doing so could alter the characteristics of your cable, or even worse render it useless. Check the wires, one more time for nicks or cuts. If there are any, just whack the whole end off, and start over.

![Figure 2](image2.png)

2) - Spread the wires apart, but be sure to hold onto the base of the jacket with your other hand. You do not want the wires to become untwisted down inside the jacket. Category 5 cable must only have 1/2 of an inch of 'untwisted' wire at the end; otherwise it will be 'out of spec'. At this point, you obviously have ALOT more than 1/2 of an inch of un-twisted wire, but don't worry - well take care of that soon enough.

![Figure 3](image3.png)

3) – Get ready your color standard for straight cable.
Begin to untwist the twisted exposed wires on your cable. Use caution so that you do not untwist them down inside the jacket. Once you get all the wired arranged in the proper order, make sure your wire cutters are within reach then grasp them right at the point where they enter the jacket. Make sure you keep them in the proper order! Grab your cutters now. Line them up along your prepared wires about 1/2 inch above the jacket. Be sure at this point that you are both 1/2 inch above the jacket, and that your cutters are aligned straight across the wires. You want to make a clean cut here - also make sure you don't let go of that jacket / wires!

<table>
<thead>
<tr>
<th>Straight Through Cable</th>
<th>Color Code</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin 1</td>
<td>white orange</td>
<td><img src="image1" alt="Color" /></td>
</tr>
<tr>
<td>Pin 2</td>
<td>orange</td>
<td><img src="image2" alt="Color" /></td>
</tr>
<tr>
<td>Pin 3</td>
<td>white green</td>
<td><img src="image3" alt="Color" /></td>
</tr>
<tr>
<td>Pin 4</td>
<td>blue</td>
<td><img src="image4" alt="Color" /></td>
</tr>
<tr>
<td>Pin 5</td>
<td>white blue</td>
<td><img src="image5" alt="Color" /></td>
</tr>
<tr>
<td>Pin 6</td>
<td>green</td>
<td><img src="image6" alt="Color" /></td>
</tr>
<tr>
<td>Pin 7</td>
<td>white brown</td>
<td><img src="image7" alt="Color" /></td>
</tr>
<tr>
<td>Pin 8</td>
<td>brown</td>
<td><img src="image8" alt="Color" /></td>
</tr>
</tbody>
</table>

4) - Don't worry. From this point forward things get a lot easier. Grab your jack, and begin to slide the wires into the jack. Once you get to the point where the jacket begins to enter the jack things might get a little tough, but just have some patience and hold onto those wires. It will fit in there just fine. Once it is in as far as it will go the wires should extend almost to the front of the jack, and about 3/8 of an inch of the jacket will be inside the jack. Like the pictures below.
5) - Grab those crimpers - because not all crimpers are exactly the same your pictures may not match exactly what you see below. Be sure to keep a good grip on that jack and the cable. Insert the jack into the crimper. It should only go in one way, so you don't have a whole lot to worry about inserting it. Begin to compress those crimpers. You will more than likely hear a clicking sound. Keep squeezing. If you try to let go too early, nothing will happen. They will not release. Keep going until they stop clicking / stop moving all together. At this point, you should be able to let go of the jack, and the crimpers. The crimpers should release now leaving you with a crimped jack.

6) - It's time to examine what we have done. If you look at the end of the jack (distal), you should see that the copper connectors should not be pressed down into the wires. Toward the back of the jack (where the jacket meets the jack) it should be crimped securely holding the jacket / cable in the jack.

If something has gone wrong, don't worry, its not the end of the world. Grab those cutters, and cut the whole jack off and start back at step1. If everything is cool, you are done.
Figure 6
Station 2

**Software:**
Adobe Photoshop CS (30 days Trial)

**Objective:**
To enable the student polish the picture they have in order to give more effect out of the simple picture. At the end of the workshop, the student will know how to start Photoshop, use basic editing tools, to save images in different formats and a simple effect to the image.

**Description:**
Adobe Photoshop is a powerful tool to perform many different image processing techniques.

Part 1: Starting Photoshop
1. Understanding the Work Area
2. Using the Tools
3. Reviewing the Help Features

Part 2: Working with Image Files
1. Opening an Existing File
2. Saving to Another Format (e.g. jpeg to gif)
Part 3: Making Basic Edits
1. Duplicating an Image
2. Cropping the Image
3. Stepping Backwards
4. Changing the Image Size
5. Changing the Canvas Size
6. Trimming the Canvas
7. Simple effect

Instructor:
Miss Shelly

Scenario 2

Chavy has successfully made his cables. In order to prevent his friends from experiencing the same scenario, Chavy made more cables. He gave some to his friends and has many more extra.

He has an idea to ‘get rid’ of the extra cables. That is to sell them all away to his schoolmate.

To sell, Chavy needs to take pictures of these cables. And of course, he can’t just post up ‘unpolish’ pictures. Editing of these pictures is essential.

Can you help Chavy to take the picture of the cables and edit it?
Part 1: Starting Photoshop

Opening Photoshop
There are two ways to open Photoshop:

1. Click on the Photoshop Icon on the desktop.

OR

2. Click on the Start Menu; Select All Programs; and Click on Adobe Photoshop CS.

Understanding the Work Area
Once you are in Photoshop, you will see that the menu bar is located at the top of the page and that the vertical toolbar is located on the left side of your screen. Refer to Figure 7 below

![Figure 7](image)

Using the Tools
The toolbox is located on the left side of the screen in Figure 1 above. These tools are like an artist’s paint brush. They will allow you to draw, erase, crop and to do several other magical events. There are four major categories of tools:

1. **Selection tools** - These are tools that enable you to select the areas that you want to manipulate. Some important selection tools are the marquee tool, lasso tool, crop tool. We will learn about these in more detail later.
2. **Painting tools** - The painting tools allows you to add color to your pictures. There are three kinds of paint tools: a paintbrush, pencil, and rubber stamp.

3. **Type and shape tools** - These tools allow you to add text and shapes to your image. We will be using these tools later.

4. **Viewing tools** - There are two types of viewing tools: the hand tool and zoom tool. The hand tool is a hand. It enables you to drag or move your image. The zoom tool is a magnifying glass. It allows you to increase or decrease your image viewing size.

**Reviewing the Help Features**

If you get lost in Photoshop, there is a lot of information in the Help section of Photoshop. The Help section is the last item on the Menu Bar. When you click on Help, you can see that there is information about updates, registration, and general Photoshop help.

To find information on a specific topic:

1. Click on Photoshop Help.
2. From here you can browse the table of contents, index, or conduct a search. (See Figure 8).

![Figure 8](image-url)
Part 2: Working with Image Files

Opening an Existing File
To open an existing file:
1. Click on File on the menu bar.
2. Select Open as seen in Figure 9.

4. Click on the Practice Folder at the desktop.
5. Select “lovesmu”.
6. Double-click on the icon of the image or click the open button.
7. The “lovesmu” picture will open in Photoshop. See Figure 10.
Saving a File to Another Format

To save the file:

1. Click on File on the menu bar.
2. Select Save As from the Drop down menu.
3. Click on the down arrow next to the “Save In” field.
4. Select Desktop.
5. Click on the Practice Folder.
6. Rename the file “lovesmu2”
7. Click on the down arrow next to the “Format” field located below the “File name” field.
8. Select the CompuServeGIF (*GIF) format from the menu. (See Figure 11).
9. Click Save.
10. Click OK.
11. Click OK.

Figure 11
Part 3: Making Basic Edits

Rotating an Image

To rotate the image:
1. Select Image from the menu bar. (See Figure 12)
2. Scroll down to Rotate Canvas.
3. Click on 180 degrees.
4. Your image should appear upside down.
5. Now, repeating steps 1 and 2 rotate the canvas 90 degrees Clock Wise. (You can try other rotation too)
6. The sky will be on the left and the sand will be on the right.
7. Rotate the canvas 90 degrees Clock Wise again.
8. The image should appear as it originally was.

Duplicating an Image

To duplicate the image:
1. Click on the image.
2. Then click Image in the menu bar.
3. Select Duplicate.
4. Click OK in the “Duplicate Image” pop-up window as “lovesmu copy”. (See Figure 13)
5. A copy of the image will appear in the work area next to the original image. (See Figure 14)
To crop the image, complete the following steps:

1. Close the duplicate copy by clicking on the “X” in the duplicate copy window.
2. Click on the original copy.
3. Select the cropping tool. (See Figure 15)
4. Use the tool to highlight the section that you want to keep in the photo. Keep the words SMU, but leave out the rest. A square figure will appear
over this section, and the rest of the picture will appear dark. (See Figure 16)
5. Press enter. Your cropped image will appear.

![Figure 16](image)

**Stepping Backwards**

If you cropped too much or too little in your picture, then you can step backwards. To step backwards, complete the following steps (See Figures 17 and 18):

1. Select Edit on the Menu Bar.
2. Click Step Backwards.
3. Your original image will appear.

![Figure 17](image) ![Figure 18](image)
Changing the Image Size

To change the image size:
1. Select Image from the menu bar.
2. Select Image Size from the drop down menu. (See Figure 19)
3. Type in 400 in the width dimensions box. The other numbers will adjust automatically. (See Figure 20)
4. Press OK.
5. The image will appear larger.

*(If you didn’t get it right the first time, remember that you can always step backwards and try again.)*

Changing the Canvas Size

Changing the canvas size is similar to changing the image size. To do this,
1. Select Image from the menu bar.
2. Select Canvas Size from the drop down menu. (See Figure 21)
3. Type in 7 in the width. The other numbers will adjust automatically. (See Figure 22)

4. Press OK.
5. Your image will appear on a canvas with blank space. (See Figure 23)

(If you didn’t get it right the first time, remember that you can always step backwards and try again.)

Trimming the Canvas

To trim the canvas, complete the following steps:
1. Select Image from the menu bar.
2. Select Trim from the drop down menu. (See Figure 24)
3. Select the areas that you want to trim by clicking the boxes in the Trim Away area. In our image, we want to trim the left and right. Make sure that those boxes are checked and uncheck the top and bottom boxes.

4. Click on OK. (See Figure 25)

5. Your image will appear trimmed. (See Figure 26)

*(If you didn’t get it right the first time, remember that you can always step backwards and try again.)*

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**Simple Effect**

To have a simple effect, complete the following steps:

1. Select window from the menu bar.
2. Select layer from the drop down menu. (See Figure 27)
3. Double click on background
4. Click OK in the “New Layer” pop-up window as “Layer 0”. (See Figure 28)

5. Select filter from the menu bar.
6. Select Artistic, Rough Pastel from the drop down menu. (See Figure 29)
7. Click OK. (You can choose other effect if you like, just repeat from the step 5).
8. Your image will appear you gave the effect. (See Figure 30)

HAVE FUN! ☺
Station 3

Objective
Student should be able to do up simple Power Point presentation given a limited time.

Description
MS Power Point is an essential skill to acquire. By mastering the skill, student can convey their message clearly to the respective audience. Various skills will be taught in this station.

Part 1: Designing an impressive computer presentation
1.) Using Template at your advantage
2.) Working with color
3.) Building Bullet Point
4.) Adding Multimedia and Effects

Instructor:
Miss Agnes
Scenario 3

A week after Chavy’s posting, SMU Bazzar Club has notices about Chavy’s brilliant business plan and has invited him to give its club member some insights of his business plan.

As an IT student, Chavy knows that he is going to use MS Power Point to give the presentation. However, being new to MS Power Point, Chavy does not have much idea how he should design and/or arrange his slides.

Can you help him to put all his idea into MS Power Point?
Part 1: Designing an impressive computer presentation

1.) Using Template at your advantage
The purpose of using a template is to look professional and have certain consistency in your presentation.

Templates also provide guidance in laying out each slide.

*Tip: Visual Professionalism means simplicity, not cuteness or busyness*

2.) Working with color
Develop a color palette of five or fewer color
Use warm color – reds, oranges and yellow to highlight important elements
Use same color for like elements. For example, all slide titles should be the same color.
Use dark text on a light background for presentations in bright room
Use light text on a dark background for presentations in darkened rooms.
3.) Building Bullet Points
To convert long text to bullet points, one can start with a title then list the main ideas that are related to that title. Bullet points should be concise. They should be key words and not sentences.

Advantages of IT
- Increase efficiency
- Reduce cost of production

GOOD

Advantages of IT
- Increase efficiency because tasks are performed at a faster rate.
- Reduce cost of production as we hire less workers but producing more goods.

BAD

4.) Adding Multimedia and Effects
Adding multimedia features enhance your content. These include sound, animation, and video elements. For example, you could use sound effect to ‘reward’ correct answers from your audience.

Add a Explosion sound effect when mouse over a image
Right click on the image> Choose Action Settings> Go to Mouse Over tab> Checked the Play sound checkbox
Figure 34

Slides Transition
Right Click on the Slides> choose Slide Transition...

Figure 35

Hyperlink in MS Power Point
Right click on the word> choose HyperLink> choose Place in This Document on the left panel> Select a place in this document> click OK
Figure 36

Have Fun 😊