Small home network –Packet tracer + real life implementation

1. Project criteria’s

The aim of this project is to create a plan a small home network using Packet tracer and then calculate the approximate cost of the Project.

Firstly, the following criteria were set:

- Full connection to a simulated wan (wide area network) network using a wireless router
- Connection to at least 3 wired devices and at least 1 wireless device
- Wireless connection secured via WPA2 personal
- The IP addresses of the connected devices had to be set using DHCP

2. Cisco packet tracer plan

The Home network was realized using an WRT300N router, 3 wired devices (Laptop, PC, Printer), and 1 wireless device (TabletPC). All wired devices are connected via TP copper network cables using Gigabit ethernet ports (speeds up to 1000mbps).

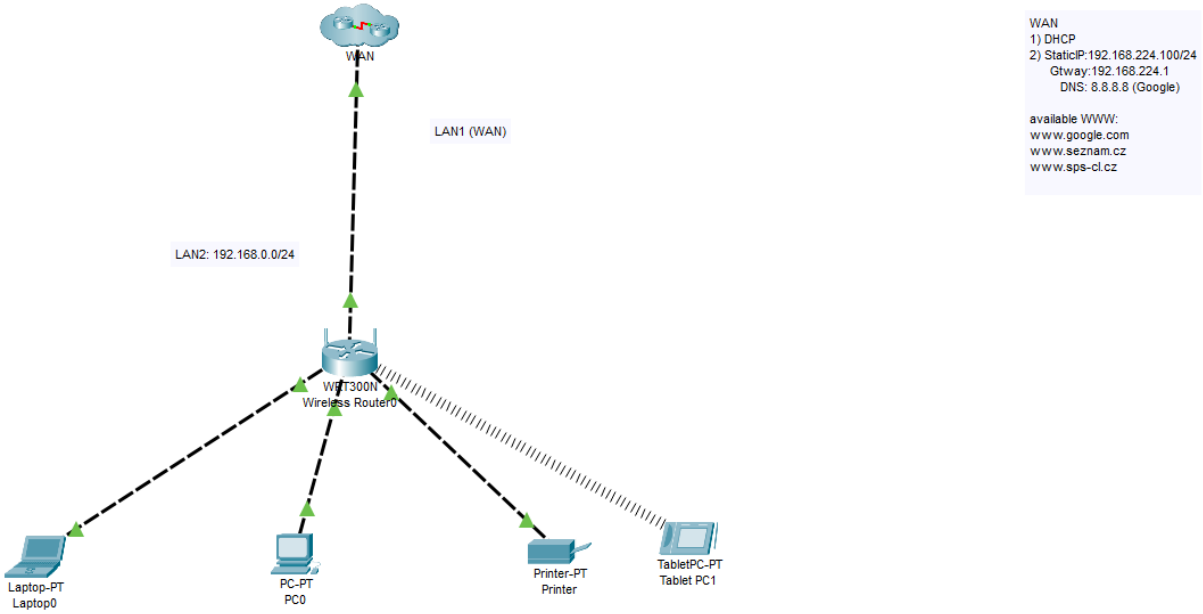

Figure 1:Home network plan in Cisco Packet tracer

Base IP address/Prefix	10.0.0.0/24	
Device name [1]	IP address	connection
Wireless router	10.3.5.100	wired
Laptop0	10.3.5.101	wired
PC0	10.3.5.103	wired
Printer	10.3.5.104	wired
TabletPC1	10.3.5.102	wireless

[1] All the devices serve only for purpose of simulation and do not represent the final realization of the project

3. Cost of real-life implementation

Since our wireless router acts as an AP as well as a router, we only need one network device. Then we only need the network cables for connecting the wired devices to the router.

A table of suitable network routers:

Device name	Cost	Speed	Features
TP-Link Archer AX50	120$	2402Mbps(5Ghz), 574 Mbps(2.4Ghz)	Wifi6, 4 Lan ports, WPA2
TP-Link Archer AX73	200$	4804Mbps(5Ghz) 574Mbps(2.4Ghz)	Wifi6, 4 Lan ports, WPA2

As to which we cable we should use, then the best one for our network is a UTP (unshielded twisted pair) Cat5e (speeds up to 1000Mbps). The price for this cable varies, but we should expect the price to be somewhere between 45$ and 100$, depending on the length and the manufacturer of the cable.

estimated final cost: **200$** (280$ if we use Archer AX73 instead of Archer AX50)