



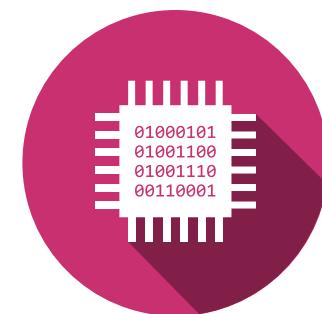
Digitales Design (DiD)

Einführung

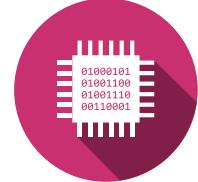
IND

Studiengang Systemtechnik
Studiengang Energie und Umwelttechnik
Studiengang Informatik und Kommunikationssysteme

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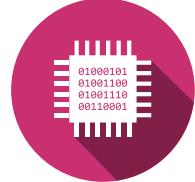
Module 1. Jahr



<https://www.hevs.ch/de/hochschule/hochschule-fur-ingenieurwissenschaften/systemtechnik/plan-etude-plein-temps/>

- Allgemeine Grundlage (BaG)
 - Deutsch / Français (La2)
- Fachspezifische Grundlagen (BaM)
 - Elektrotechnik (ElE)
 - Analoge Elektrotechnik (ElA)
 - **Numerische Elektrotechnik (ElN)**
 - Mechanik 1 (Mec1)
- Summerschool 1 (SS1)
 - Kart
- Wissenschaftliche Grundlagen (Bas)
 - Mathematik 1 (Mat1)
 - Informatik 1 (Inf1)
 - Physik 1 (Phy1)

Ziel des Modules

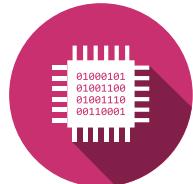


Interpretieren Sie die Spezifikationen eines einfachen digitalen Systems und entwerfen Sie die Schaltung, die diese Funktion erfüllt.

Dies bedeutet:

- Methodische Grundlagen: Semesterbeginn
- Einfaches System: Ende des Semesters

Inhalt des Kurses



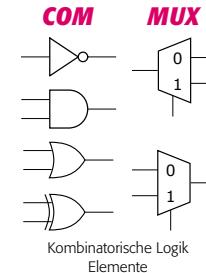
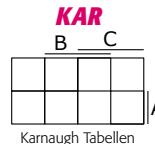
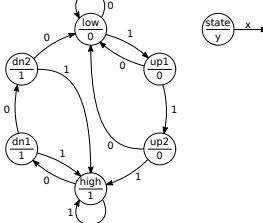
Pflichtenheft

MSb **NUM** LSb
11110101
Binary dig IT

a	b	y
0	0	0
0	1	1
1	0	1
1	1	0

Q_A	Q_B	Q_A^+	Q_B^+
0	0	1	0
0	1	0	0
1	0	1	0
1	1	0	1

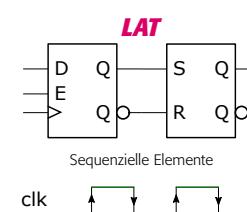
Zustandstabellen



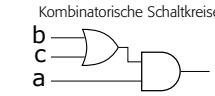
$$y = a(b + c) = ab + ac$$

Polynomiale Gleichungen

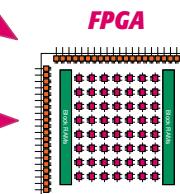
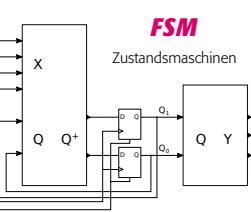
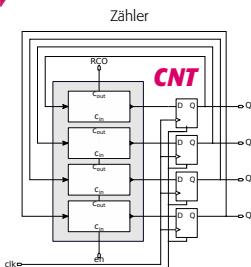
$$\begin{aligned} Q_0^+ &= \overline{Q_0} \\ Q_1^+ &= Q_0 \oplus Q_1 \end{aligned}$$



DiD IND



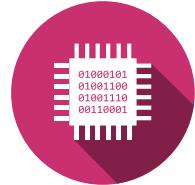
LST



FPGA

MET

Witz

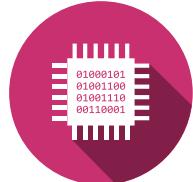


There are 10 types of people in this world. Those who understand binary and those who don't.

Es gibt 10 Arten von Menschen auf dieser Welt. Diejenigen, die das Binäre verstehen und diejenigen, die es nicht verstehen.

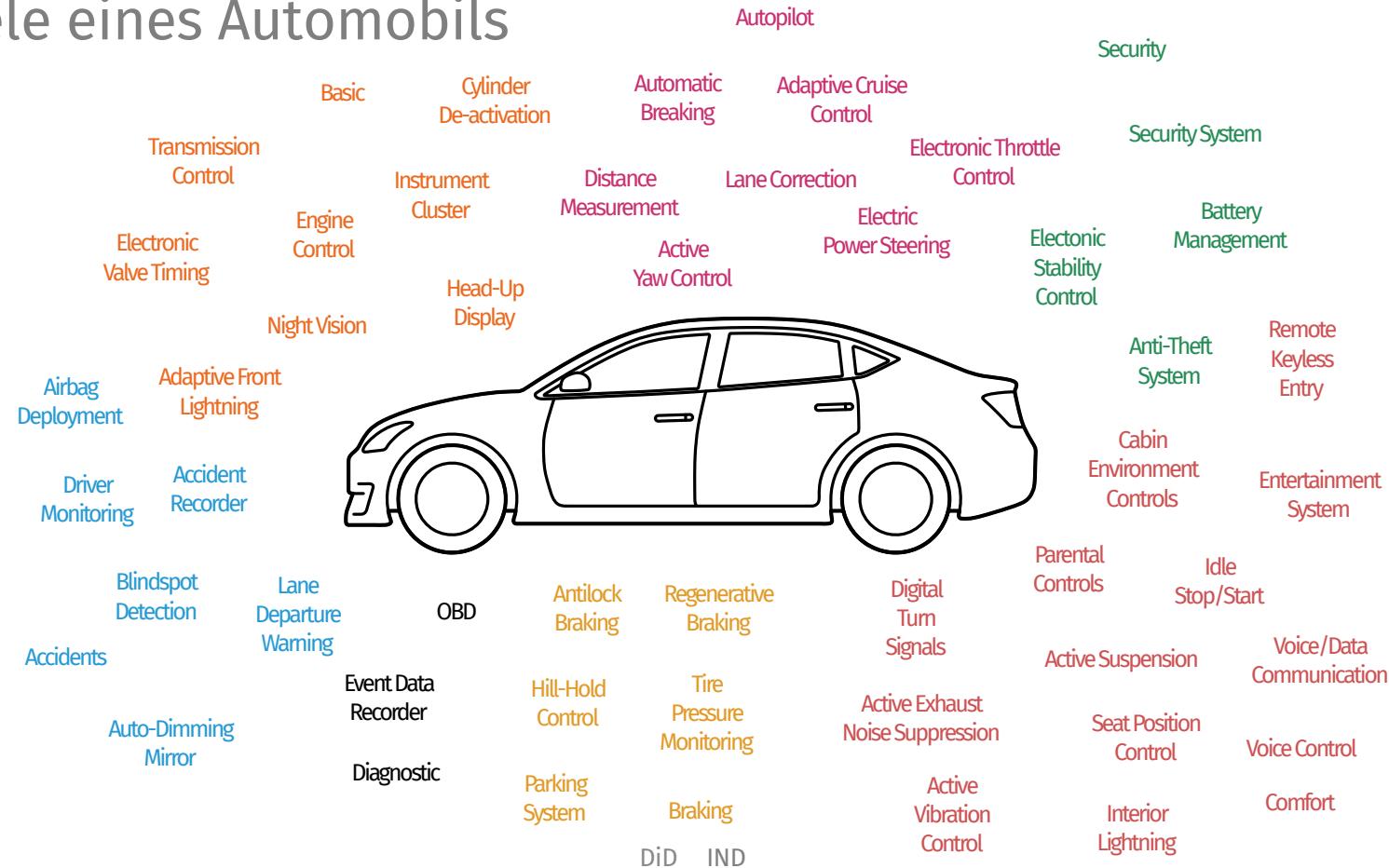
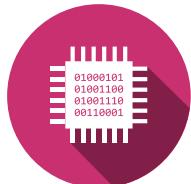
Numerische Elektrotechnik

Anwendungsbereiche



Numerische Elektrotechnik

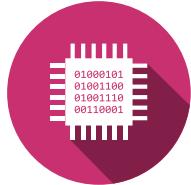
Beispiele eines Automobils



Numerische Elektrotechnik

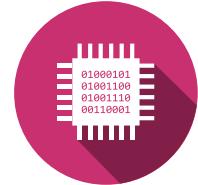
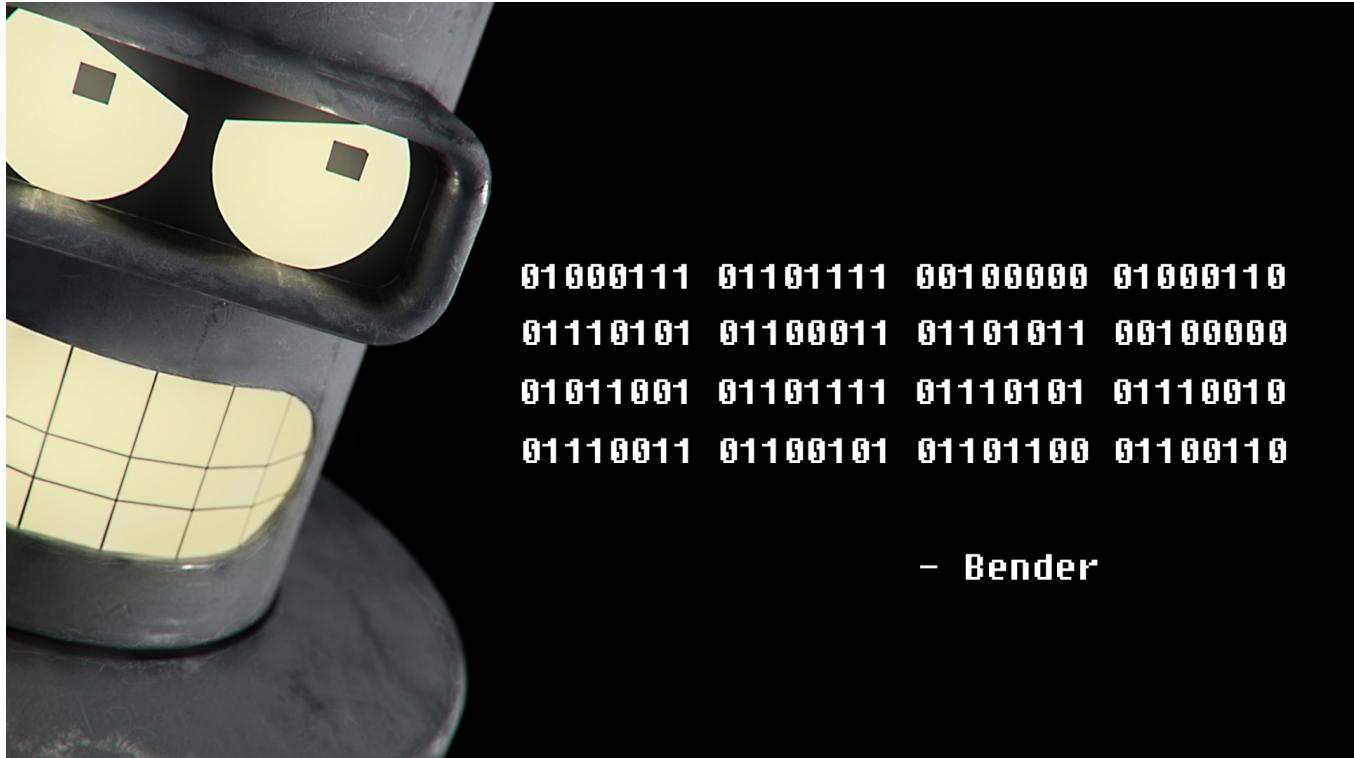
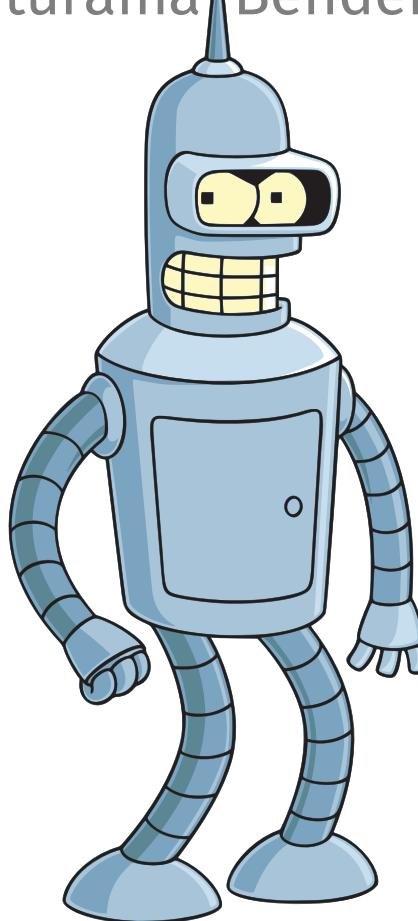
Ariane 5

https://youtu.be/PK_yguLapgA



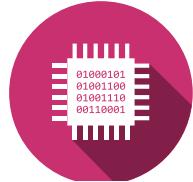
Numerische Elektrotechnik

Futurama Bender

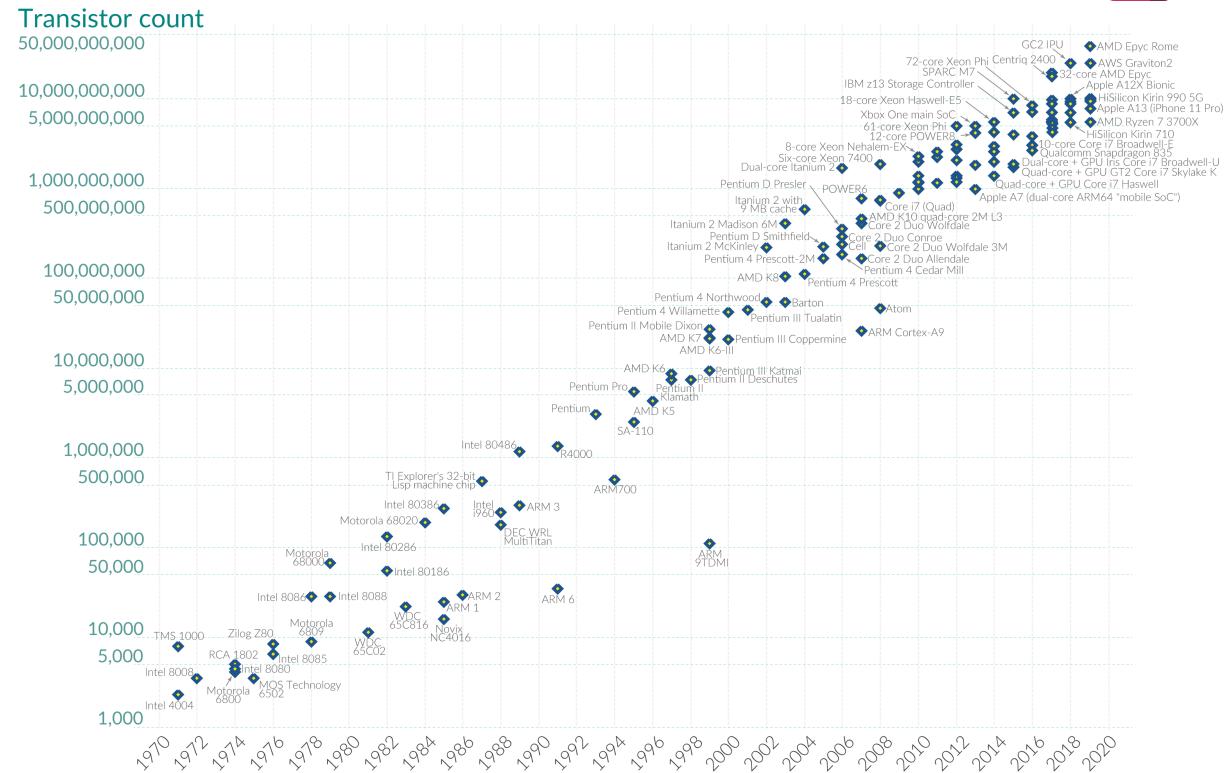


Numerische Elektrotechnik

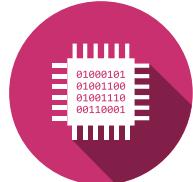
Moore's Law



*Number of transistors double
every two years
- Gordon Moore -*



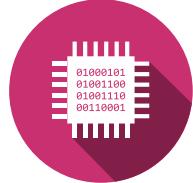
Organisation



- Kurs (4 *Stunden/Woche*)
- Labore (4 *Stunden/Woche*)
- Nachhilfe (2 *Stunden/Woche*)
- Projekt (Inverter $\approx 5 - 6$ Wochen)
- Prüfung
 - 31 Oktober – 4 November
 - 12 Dezember – 16 Dezember

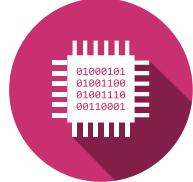
	Herbstsemester				Semester Prüfung	Frühlingsssemester	Analog Prüfung
Bewertung	Prüf 1	Prüf 2	Projekt	Prüf Sem	Siehe mit Analog Professor	Analog	
Koeffizient	0.3	0.3	0.4	1			
Note	1 (Durchschnitt)				1	1 (Durchschnitt)	1

Allgemeine Zusammenarbeit



- Kursteilnahme ist Obligatorisch
 - Nur Lehrer können eine Befreiung erteilen
 - Wenn die Absenzen zunehmen ⇒ informieren sie das HR
- Notizen sind unentbehrlich
- Übungen müssen zuhause erledigt werden
 - Die persönliche Arbeit ist sehr wichtig
- Pünktlichkeit
- Benutzung der Natel's
 - Verboten in der Klasse ⇒ benutzen Sie die Pausen
- Essen und Trinken
 - Verboten in der Klasse ⇒ benutzen Sie die Pausenzeiten

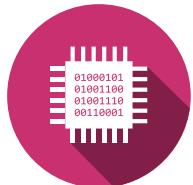
Nachhilfe



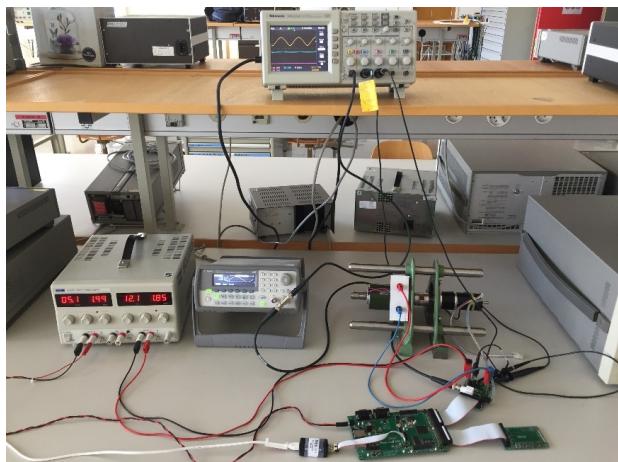
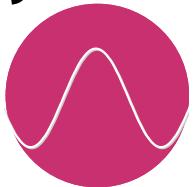
- Obligatorisch bis zur ersten Prüfung
- Danach optional je nach Leistung
- Eine ausgezeichnete Gelegenheit für die Übungen

Semesterprojekt

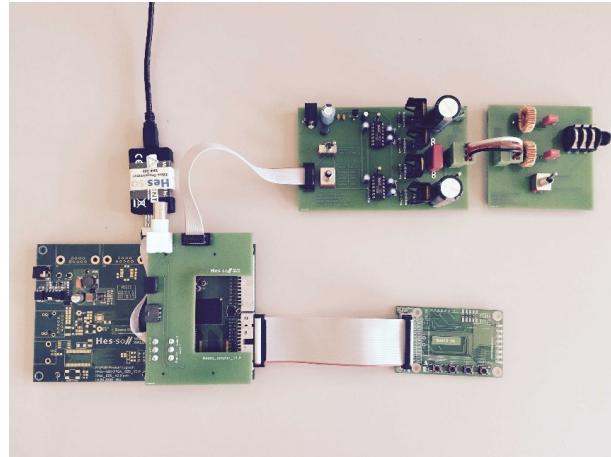
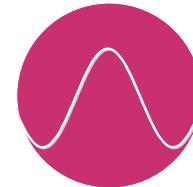
Energie und Umwelttechnik



Synchro



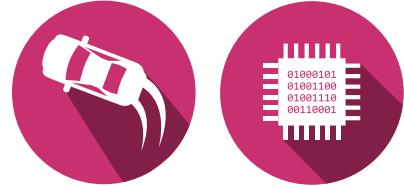
Inverter



Summerschool Kart

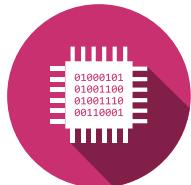
SS1 2017

<https://www.youtube.com/watch?v=g6lU2NDZub8>



Organisation

Professoren



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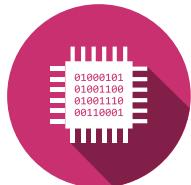
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Organisation

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Server und Dateien

Energie und Umwelttechnik

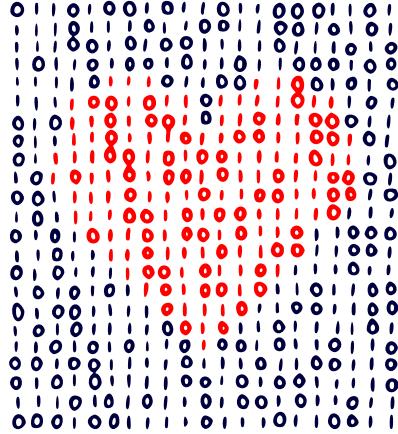
- **Moodle Cyberlearn**
 - <https://cyberlearn.hes-so.ch/course/view.php?id=21709>
 - 22_HES-SO-VS_8132_Electricité_1 / Elektrotechnik_1
 - Password: *welcome*
- **Microsoft Teams**
 - 22_eln_zas
 - Access Code: **bzyde19**
 - Channels
 - Announcements
Nachrichten der Modulleitung
 - General - Klassenchat

The image shows two screenshots side-by-side. On the left is a screenshot of a Moodle course page titled "20_HES-SO-VS_2131_ELECTRICITÉ / ELEKTROTECHNIK". It displays module information, including a circuit diagram and a microchip icon. On the right is a screenshot of the Microsoft Teams application interface, showing a list of teams and options to join or create a team.

WHY DO I SAY UH
WHY IS SEA SALT BETTER
WHY ARE THERE TREES IN THE MIDDLE OF FIELDS
WHY IS THERE NOT A POKEMON MMO
WHY IS THERE LAUGHING IN TV SHOWS
WHY ARE THERE DOORS ON THE FREEWAY
WHY ARE THERE SO MANY SVHOST-EXE RUNNING
WHY AREN'T ANY COUNTRIES IN ANTARCTICA
WHY ARE THERE SCARY SOUNDS IN MINECRAFT
WHY IS THERE KICKING IN MY STOMACH
WHY ARE THERE TWO SLASHES AFTER HTTP
WHY ARE THERE CELEBRITIES
DINOSAUR GHOSTS
WHY DO SNAKES EXIST
WHY DO OYSTERS HAVE PEARLS
WHY ARE DUCKS CALLED DUCKS
WHY DO THEY CALL IT THE CLAP
WHY ARE KYLE AND CARTMAN FRIENDS
WHY IS THERE AN ARROW ON AANG'S HEAD
WHY ARE TEXT MESSAGES BLUE
WHY ARE THERE MUSTACHES ON CLOTHES
WHY WUBA LUBBA DUB DUB MEANING
WHY IS THERE A WHALE AND A POT FALLING
WHY ARE THERE SO MANY BIRDS IN SWISS
WHY IS THERE SO LITTLE RAIN IN WALLIS
WHY IS WALLIS WEATHER FORECAST ALWAYS WRONG

WHY ARE THERE MALE AND FEMALE BIKES
WHY ARE THERE BRIDESMAIDS
WHY DO DYING PEOPLE REACH UP
HOW FAST IS LIGHTSPEED
WHY ARE OLD KLINGONS DIFFERENT
WHY ARE THERE SQUIRRELS
IS THERE HELL IF GL
WHY ARE THERE TINY SPIDERS IN MY HOUSE
WHY DO SPIDERS COME INSIDE
WHY ARE THERE HUGE SPIDERS IN MY HOUSE
WHY ARE THERE LOTS OF SPIDERS IN MY HOUSE
WHY ARE THERE SPIDERS IN MY ROOM
WHY ARE THERE SO MANY SPIDERS IN MY ROOM
WHY DO SPYDER BITES ITCH
WHY IS DYING SO SCARY
WHY IS THERE NO GPS IN LAPTOPS
WHY DO KNEES CLICK
WHY AREN'T THERE E GRADES
WHY 2*B / 2*B

WHY HAVE DINOSAURS NO FUR
WHY ARE SWISS AFRAID OF DRAGONS
WHY IS THERE A LINE THROUGH HTTPS
WHY IS THERE A RED LINE THROUGH HTTPS ON TWITTER
WHY IS HTTPS IMPORTANT
WHY ARE THERE WEEKS
WHY DO I FEEL DIZZY
WHY AREN'T MY ARMS GROWING
WHY ARE THERE SO MANY CROWS IN ROCHESTER
WHY IS TO BE OR NOT TO BE FUNNY
WHY DO CHILDREN GET CANCER
WHY IS POSEIDON ANGRY WITH ODYSSEUS
WHY IS THERE ICE IN SPACE
WHY ARE THERE ANTS IN MY LAPTOP
WHY IS EARTH TILTED
WHY IS SPACE BLACK
WHY IS OUTER SPACE SO COLD
WHY ARE THERE PYRAMIDS ON THE MOON
WHY IS NASA SHUTTING DOWN
WHY ARE THERE GHOSTS
WHY IS THERE AN OWL IN MY BACKYARD
WHY IS THERE AN OWL OUTSIDE MY WINDOW
WHY IS THERE AN OWL ON THE DOLLAR BILL
WHY DO OWLS ATTACK PEOPLE
WHY ARE FPGA's EVERYWHERE
WHY ARE THERE HELICOPTERS CIRCLING MY HOUSE
WHY ARE THERE GODS
WHY ARE THERE TWO SPOCKS
WHY ARE MY BOOBS ITCHY
WHY ARE CIGARETTES LEGAL
WHY ARE THERE DUCKS IN MY POOL
WHY IS JESUS WHITE
WHY IS THERE LIQUID IN MY EAR
WHY DO Q TIPS FEEL GOOD
WHY DO PEOPLE DIE
WHAT IS <https://xkcd.com/1256/>
WHY DO THEY SAY T-MINUS
WHY ARE THERE OBELISKS
WHY ARE WRESTLERS ALWAYS WET
WHY ARE OCEANS BECOMMING MORE ACIDIC
WHY AREN'T THERE GUNS IN HARRY POTTER



Hes·so // VALAIS
WALLIS



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Hochschule für Ingenieurwissenschaften

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