

PRIMO ISTITUTO SUPERIORE ARCHIMEDE ROSOLINI

CLIL IN DUBLIN 22- 28 MAY 2016

“ MY BEST TEACHING EXPERIENCES “

For a 20 students class,

Italian Technical Secondary School, 18 years old

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1. LEAD-IN ACTIVITY

1.1 PRATICE (4 minutes, in pairs, kahoot)

Working in groups of two state whether the following sentences are true or false

- When dividing a circle by eight parts, each of the angles measures 90 degrees

☐ true ☐ false

- A code is a way to represent an information in a unique mode trough appropriate symbols

☐ true ☐ false

TAXONOMY

1.2 VOCABULARY (30 minutes, in pairs)

1.2.1 Match the terms in the left column with definition on the right

1	basic unit of information which can have only one of two values,
2	there is one and only one
3	motion that proceeds in the opposite direction as a clock's hands
4	a region of a circle bounded by two radii
5	The figure formed by two rays sharing a common endpoint
6	at a greater distance from the centre of the inside
7	25% or 0.25
8	one of eight equal parts of a whole
9	motion that proceeds in the same direction as a clock's hands
10	located on the inside of something

A	Sector
B	Outer
C	Quarter
D	Eighth
E	Angle
F	Anticlockwise (ACW)
G	Inner
H	Clockwise (CW)
I	Unique
L	Bit

1.2.2 Assessment

REMEMBERING

2. LEAD-IN ACTIVITY: BRAINSTORMING SESSION (10 minutes, individual)

2.1 How can we convert an angle in a sequence of bits? Let's say black and white balls.

2.2 Assessment

3. CLOZE TEST (10 minutes, in pairs)

3.1 Read the text below, fill in the gaps with appropriate words, and complete the table

Binary

Angular

Anticlockwise







Rotary encoder

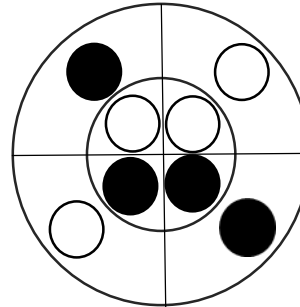
An absolute rotary encoder is an electro-mechanical device that converts an position to acode.

Below you can find: on the right a simplified rotary encoder with only 2 bits, corresponding respectively to the inner ring and outer ring. Zero degrees is on the right-hand side, with angle increasing As you can see 4 unique different codes codify 4 sectors.

CREATING

APPLYING

Inner ring	Outer ring	Angle
		0° to 90°
		90° to 180°
		180° to 270°
.....



4. Production (10 minutes, in pairs)

There are four ways (A-D) to complete the sentences below. Which ones are correct?

Absolute encoders ...

A measure the disc velocity

B code the disc position

C rotate according to a code

D provide analog signal

One 2-bit rotary encoder ...

A provides 4 sectors

B provides 2 sectors

C provides 4 circles

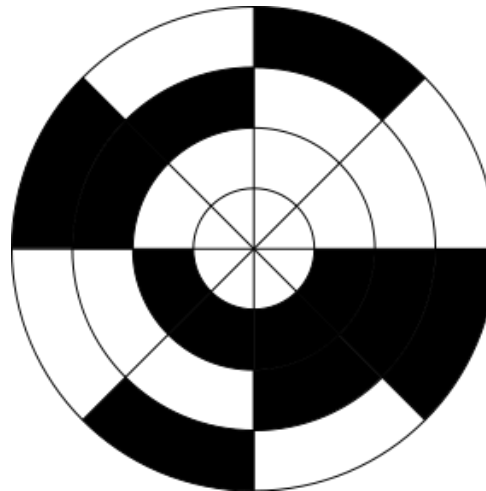
D provides 2 circles

UNDERSTANDING

5. PRODUCTION (20 minutes, in pairs)

Observe the encoder with 3 circles and fill table with black and whites balls and complete angles

Inner	Middle	Outer	Angle
			0° to 45°
			45° to 90°
			90° to 135°
			135° to 180°
			225° to 270°



APPLYING