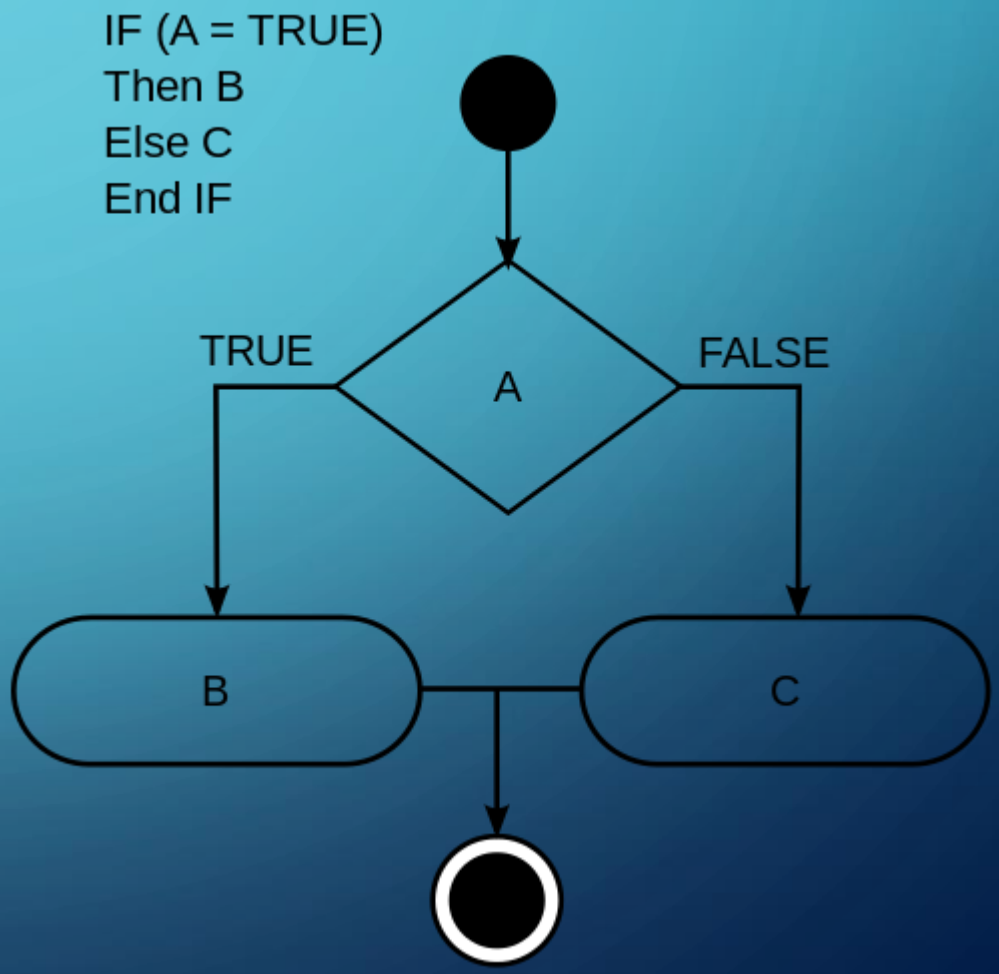
05. CONDITIONAL STATEMENTS

M2U5P5

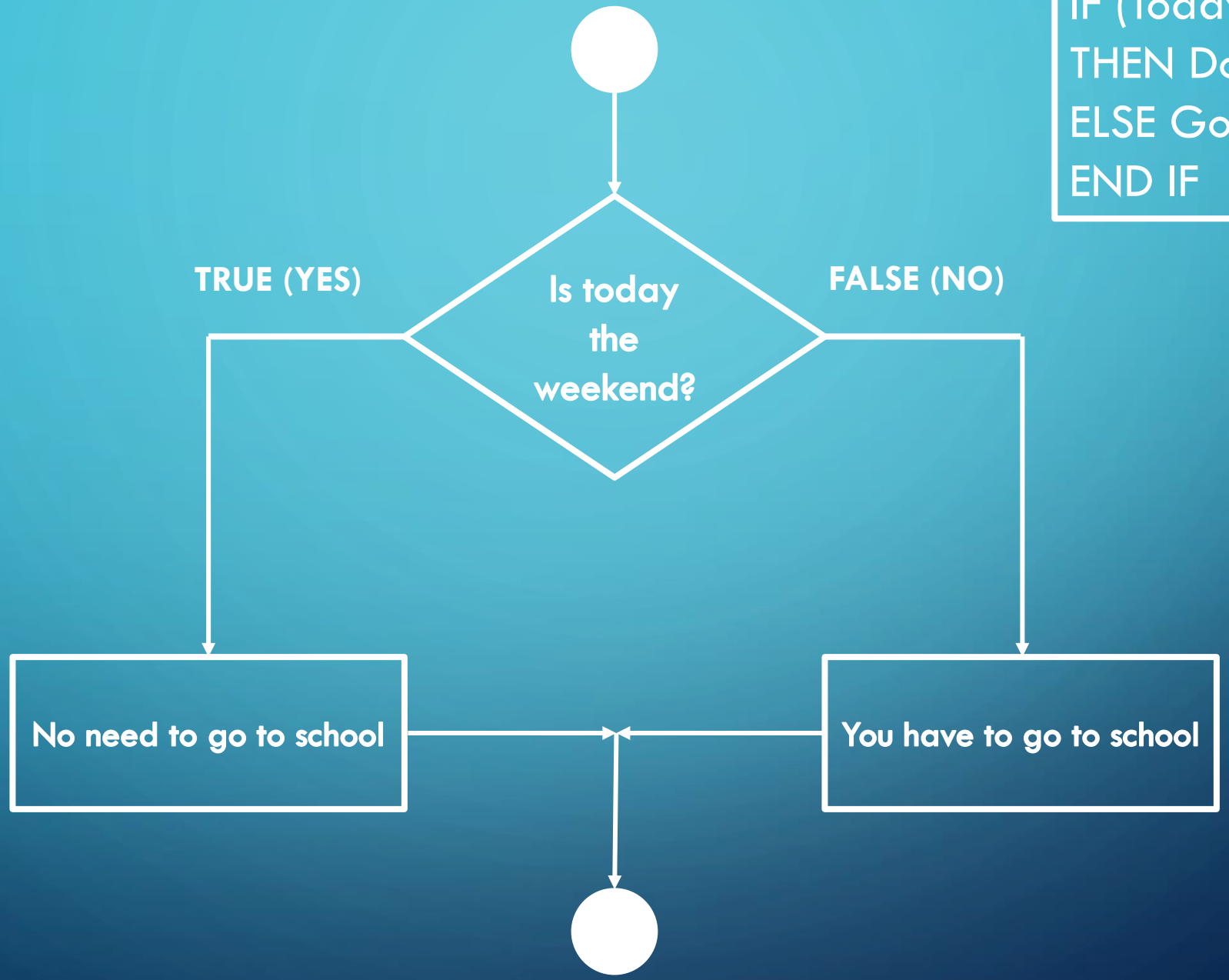
WHAT ARE CONDITIONAL STATEMENTS?

CONDITIONAL STATEMENTS

- A conditional statement is a feature of a programming language, which performs different actions depending on whether the specified condition is true or false



IF (Today is weekend)
THEN Don't go to school
ELSE Go to school
END IF



LOGICAL CONDITIONS

- Python supports the usual logical conditions from mathematics:
  - Equals: a == b
  - Not Equals: a != b
  - Less than: a < b
  - Less than or equal to: a <= b
  - Greater than: a > b
  - Greater than or equal to: a >= b
- These conditions can be used in several ways, most commonly in "if statements" and loops.

IF STATEMENTS

- **If statements** are used to check IF a condition is true or not, if it is true then we will do an action

```
1  a = 33
2  b = 200
3  if b > a:
4    print("b is greater than a")
```

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RESULT

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b is greater than a
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SPACE IS IMPORTANT

RESULT

```
b is greater than a
```

IF STATEMENTS

The indentation specifies which part belongs to the IF statement

```
1  a = 33
2  b = 200
3  if b > a:
4      print("b is greater than a")
5      print("This belongs to if statement")
6      print("This belongs to if statement")
7      print("This belongs to if statement")
8  print("This doesn't belong to if statement")
```

ELSE

- **ELSE** is used when our conditions are not correct and we still want to do something. **Has** to go with IF

```
1  a = 33
2  b = 200
3  if b < a:
4      print("b is less than a")
5  else:
6      print("b is greater than a")
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ELSE

- **ELSE** is used when our conditions are not correct and we still want to do something. **Has** to go with IF

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1  a = 33
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```

RESULT

```
b is greater than a
```

CAN WE HAVE MORE THAN ONE CONDITION?

WHAT IF WE HAVE MORE THAN ONE CONDITION?

ELIF (ELSE-IF)

- If we have more than one condition we have to use **ELIF**
- The **ELIF** keyword is pythons way of saying "if the previous conditions were not true, then try this condition"

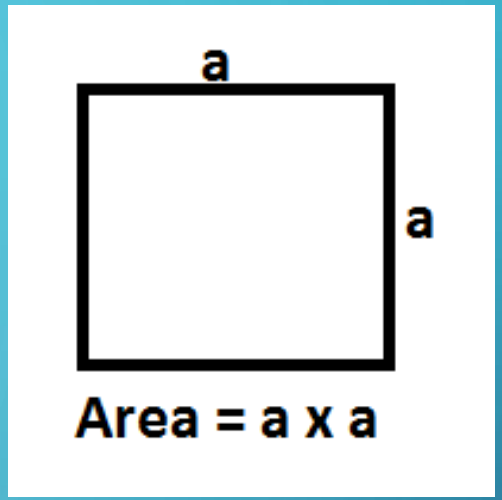
```
1  a = 33
2  b = 33
3  if b < a:
4      print("b is less than a")
5  elif b == a:
6      print("b is same as a")
7  else:
8      print("b is greater than a")
```

CLASSROOM WORK

TASK 1: SQUARE AREA

- Create a program that will calculate the area of a square
- Create a **variable a**
- Ask the user to give you the size of square
- Save the size in variable a
- Check if variable a is more than 0
- If it is calculate the area and show the area
- Else show an error message “Size is less than 0, can’t calculate!”

TASK 1: SQUARE AREA



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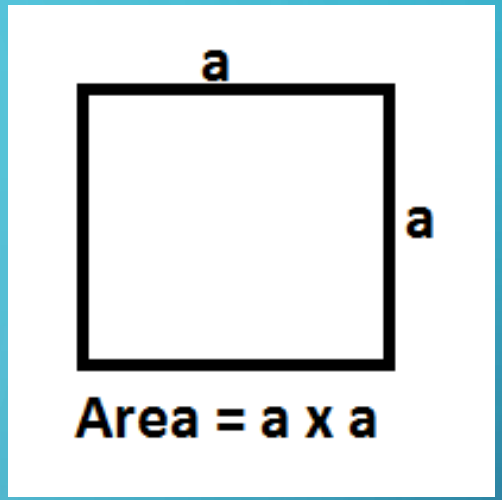

- Create a program that will calculate the area of a square
- Create a **variable a**
- Ask the user to give you the size of square and save in variable a
-
```
a = int(input("Enter the length of the side:"))
```
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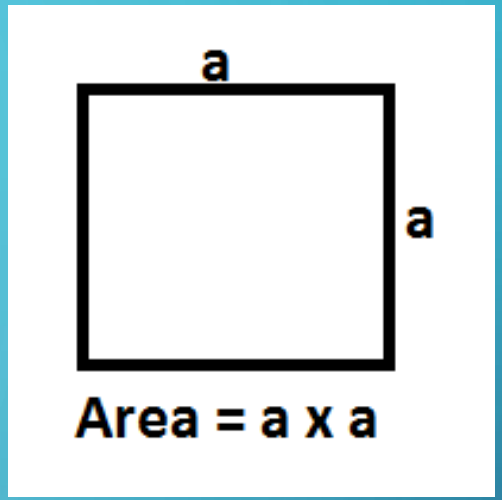

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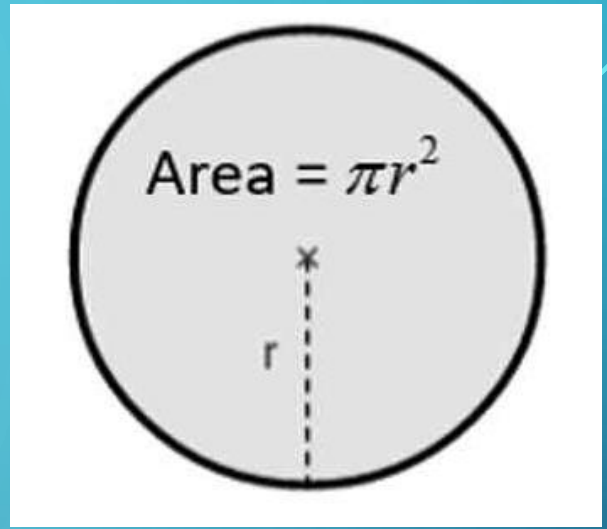
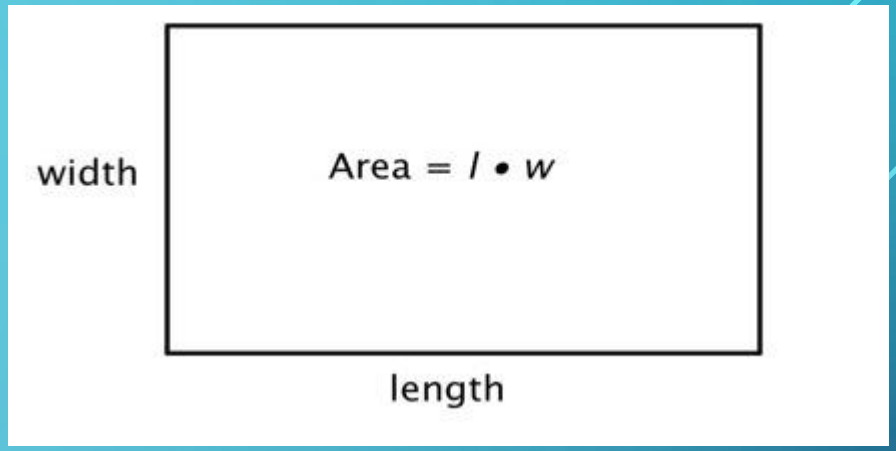
TASK 2: CIRCLE AREA



- Create a program that will calculate the area of a circle
- Create a **variable r**
- Ask the user to give you the radius of circle
- Save the size in variable r
- Check if variable r is more than 0
- If it is calculate the area and show the area
- Else show an error message “Radius is less than 0, can’t calculate!”

TASK 3: RECTANGLE AREA



- Create a program that will calculate the area of a rectangle
- Create a **variable w and l**
- Ask the user to give you the width and length of rectangle
- Save the size in variable w and l
- Check if variable w and l are more than 0
- If it is calculate the area and show the area
- Else show an error message “Width or length is less than 0, can’t calculate!”

TASK 4: AGE CHECKER

- Make a program that will ask a person his age. Save the age in a variable called "**age**" and then check if
  - Younger than 10
  - Between 10 and 20
  - Between 20 and 25
- If they are, show a result
  - "You are a Prathom student"
  - "You are a Mathayom student"
  - "You are a University student"

```
3  if :
4      print("")
5  elif :
6      print("")
7  elif :
8      print("")
9  else:
10     print("")
```

ANY QUESTIONS?

THE END