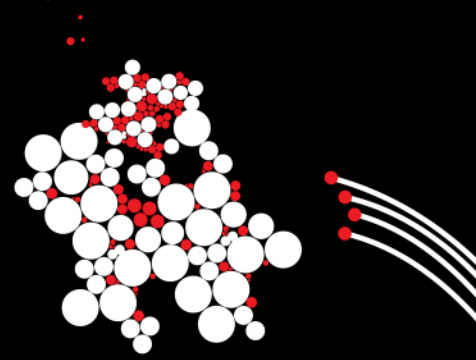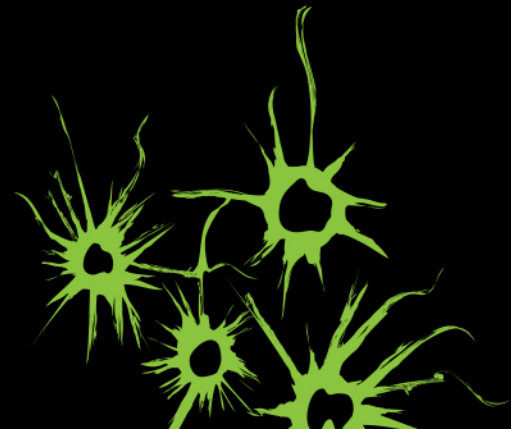# PROGRAMMING: CONDITIONAL STATEMENTS

FAIZAN AHMED

CONTROL FLOW

- In general a statement is an instruction to do something

  - We have seen so far assignments, print statements, etc.

- Statements are executed in top to bottom order

  - The order is broken by certain statements

    - Decision making, looping, branching

- **Block**: to group a sequence of statements into a single statement.

```
{
    statements
}
```

CONDITIONAL STATEMENT

- Conditional statement: do something depending on boolean condition

```java
double grade=5.5;

if(grade>=5.5) {
    System.out.println("Congratulation: You passed");
}
```

Simple (no else)

```java
double grade=5.5;

if(grade>=5.5) {
    System.out.println("Congratulation: You passed");
}
else {
    System.out.println("You Failed");
}
```

With else

Always use {}

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CONDITIONAL STATEMENT

- Definite assignment

```java
int y;
if (x < 0) {
    y = 1;
}
else {
    y = 2;
}
System.out.println(y);
```

```java
int y;
if (x < 0) {
    y = 1;
}
if (x>=0) {
    y = 2;
}
System.out.println(y);
```

Variable 'y' might not have been initialized

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CONDITIONAL STATEMENT

If-else Blocks

```java
int x=-1;
if(x<0){
    x=1;
}
else{
    x=2;
}
System.out.println("x is: "+x);
```

```
x is: 1
```

Consecutive if statements

```java
int x=-1;
if(x<0){
    x=1;
}
if (x>=0) {
    x=2;
}
System.out.println("x is: "+x);
```

```
x is: 2
```

CONTROL FLOW

```java
// Some Statements

double grade=7;

// Do the student have sufficient?
if(grade>=5.5 && grade<8) {
    System.out.println("Sufficient");
}
else {
    System.out.println("In-Sufficeint");
}
// More statements coming here.
```