What do computers do?

A) They make software.

B) They perform the operations in programs, in the order the operations are written, modified by conditionals, loops, and method call/return.

C) They perform only the operations in programs that make sense, modified by user input.

D) They perform the operations in programs in some random order.
What do computers do?

A) They make software.

B) They perform the operations in programs, in the order the operations are written, modified by conditionals, loops, and method call/return.

C) They perform only the operations in programs that make sense, modified by user input.

D) They perform the operations in programs in some random order.
Which is NOT operations that you may include in your program?

A) `double rand = Math.random();` to make the random method of the Math class compute the next pseudo-random number, and store it in a variable.

B) Make a variable and give it a name.

C) Make a new object and copy its address into a variable.

D) Test if a loop will run forever, before running it.

E) Retrieve the number stored in a variable, multiply it by another number retrieved from another variable, and then, IGNORE the product!
Alan Turing

• In 1936, he invented an idealized model (Turing machine) of people (like the computing Rosie's of WWII) or machines doing computing. The chief idealization is that the Turing machine had access to an unlimited supply of blank paper.

• Turing proved that in his model, a program that always correctly tests if an arbitrary program will run forever, is IMPOSSIBLE.

• A comprehensive Turing website from an author
Which is NOT operations that you may include in your program?

A) `double rand = Math.random();` to make the random method of the Math class compute the next pseudo-random number, and store it in a variable.

B) Make a variable and give it a name.

C) Make a new object and copy its address into a variable.

D) Test if a loop will run forever, before running it.

E) Retrieve the number stored in a variable, multiply it by another number retrieved from another variable, and then, IGNORE the product!
What people say is a variable

• “A variable is a NAMED STORAGE LOCATION.”
A (Java) variable is named.

```java
int Joe;
// declares an variable
// named Joe.
```

A variable is a kind of storage.
and, a variable HAS a LOCATION.

Cargo Holds of the Queen Mary
What do computers do?

A) They make software.

B) They perform the operations in programs, in the order the operations are written, modified by conditionals, loops, and method call/return.

C) They perform only the operations in programs that make sense, modified by user input.

D) They perform the operations in programs in some random order.
What do computers do?

A) They make software.

B) They perform the operations in programs, in the order the operations are written, modified by conditionals, loops, and method call/return.

C) They perform only the operations in programs that make sense, modified by user input.

D) They perform the operations in programs in some random order.
Which is NOT operations that you may include in your program?

A) `double rand = Math.random();` to make the random method of the Math class compute the next pseudo-random number, and store it in a variable.

B) Make a variable and give it a name.

C) Make a new object and copy its address into a variable.

D) Test if a loop will run forever, before running it.

E) Retrieve the number stored in a variable, multiply it by another number retrieved from another variable, and then, IGNORE the product!
Alan Turing

• In 1936, he invented an idealized model (Turing machine) of people (like the computing Rosie of WWII) or machines doing computing. The chief idealization is that the Turing machine had access to an unlimited supply of blank paper.

• Turing proved that in his model, a program that always correctly tests if an arbitrary program will run forever, is IMPOSSIBLE.

• A comprehensive Turing website from an author
Which is NOT operations that you may include in your program?

A) `double rand = Math.random();` to make the random method of the Math class compute the next pseudo-random number, and store it in a variable.

B) Make a variable and give it a name.

C) Make a new object and copy its address into a variable.

D) Test if a loop will run forever, before running it.

E) Retrieve the number stored in a variable, multiply it by another number retrieved from another variable, and then, IGNORE the product!
What people say is a variable

• “A variable is a NAMED STORAGE LOCATION.”
A (Java) variable is named.

```java
int Joe;
//declares an variable
//named Joe.
```

A variable is a kind of storage.
and, a variable HAS a LOCATION.

Cargo Holds of the Queen Mary