

## Panel 1

Last time:

fields vs. local variables

Decimal Format

Interest program

Today: Encrypt and Decrypt text

About "text": a bunch of characters, i.e.

char

1

## Panel 2

How does computer store "char" ?

int x = 3 stored as 00000011

char c = 'b' is first converted to an  
integer called its ASCII code !

'A' = 65

'B' = 66

⋮

'Z' = 91 ?

Write a program

to show ASCII

codes of letters:

'a' = ? 92 ?

⋮

'z' =

2

Panel 3

```

public static void main(String args[])
{
    char c = 'A';
    int code = (int)c;
    System.out.println(c + " = " + code);
}

```

*type-casting!*

what char is 91?

A = 65	91 = '['
;	
Z = 90	92 = ']'
	:
a = 97	96
;	
z = 122	97 = 'a'

3

Panel 4

New Data type: String

A String is a list of characters of flexible length. The characters are counted starting at position 0.

Ex: String s = "Bert";

has 4 characters, 0<sup>th</sup> = 'B', 1<sup>st</sup> = 'e', 3<sup>rd</sup> = 't'

A String is a 'smart' type, i.e. it comes with its own "Methods"!

4

Panel 5

Ex: Two build-in methods of a String are:  
length() and charAt(int pos).

→ String s = "Bert";  
System.out.println(s.length()); ⇒ 4

Ex: Write a program to

- a) print out a string in reverse
- b) create a new string = that's the old string in reverse

5

Panel 6

```
public static void main(String args[])
{
    System.out.print("Enter string to reverse: ");
    String s = Console.readString();
    for (int i = s.length()-1; i >= 0; i--)
        System.out.print(s.charAt(i));
    System.out.println();

    String reversi = "";
    for (int i = s.length()-1; i >= 0; i--)
        reversi += s.charAt(i);
    System.out.println(s + " or " + reversi);
}
```

6

Panel 7

Write a program to check if an input string is a palindrome or not!

Idea 1: a) reverse string  
b) check if reversed is equal to original

Idea 2:

7

Panel 8

A String is not basic data type but an Object!

Pros: It's smart, i.e. has build-in methods

Cons: It's tricky to handle; for example

== does not work for Strings !!!!!!!!

What works? => see our home page

- click on "java API"
- select "java.lang" package
- select "String" class
- > see all methods

8

Panel 9

Important:

int length()

char charAt(int pos)

boolean equals(String s)

boolean equalsIgnoreCase(String s)

int indexOf(String s)

String substring(int begin, int end)

String toLowerCase()

String toUpperCase()

String trim()

checks if given string is equal to input string s; we instead of ==

9

Panel 10

HW: a) Read Java API for important String methods

b) Write code to strip a string of leading spaces.

I.e. " \_ \_ \_ best" → "best"

c) How would you write "toUpperCase"?

Do privately, don't turn it in!

10