

C Strings



Systems Programming

Strings

- **Strings versus Single characters**
- **Pointers versus Arrays**
- **Accessing Array of Strings with Pointers**

Strings

- Strings are arrays of characters terminated by `'\0'` (null).
- The `\0` occupies one char in the array of characters.



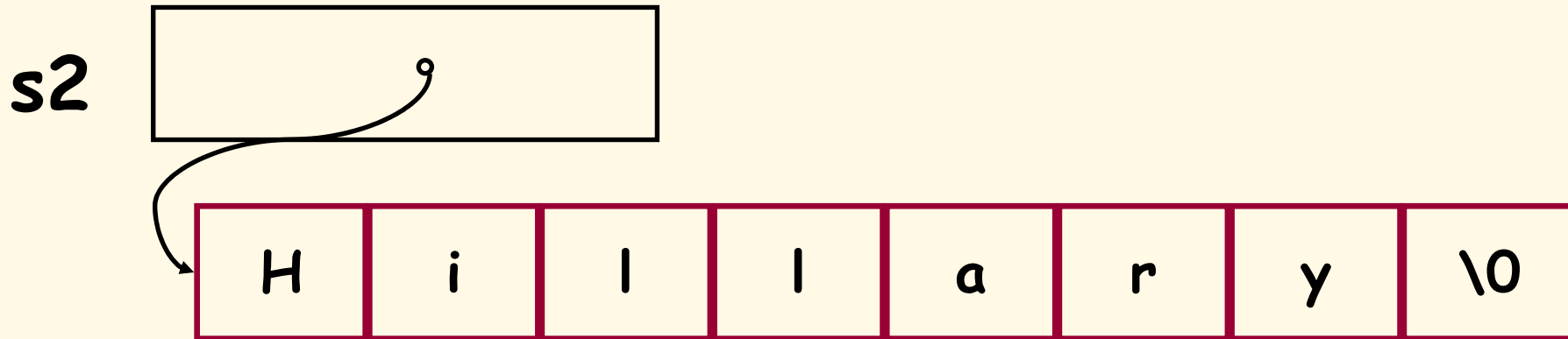
Character Strings

```
char c = 'W';
```



```
char *s = "George Bush"
```

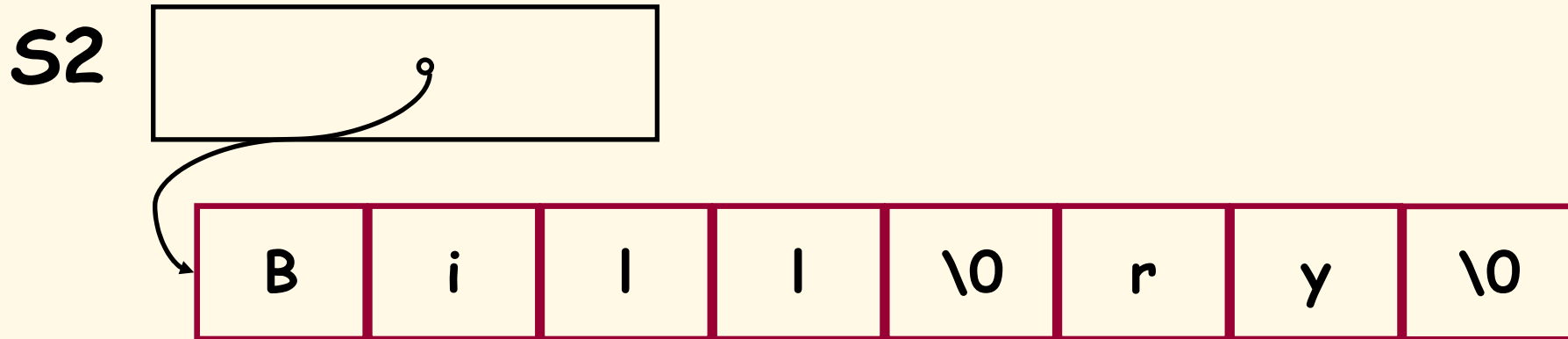
```
char s2[] = "Hillary"
```



Character Strings

```
s2[0] = 'B';
```

```
s2[4] = '\0';
```



```
printf("%s\n", s2);
```

An Array of Strings Example

```
/* An Example of an Array of Strings accessed using a string pointer */
int main ()
{
  int i,j;
  char let = 'A';
  char cray [3][10];
  char *cptr[3];
  for (j=0; j<3; j++)
    cptr[j] = &cray [j][0];
  for (j=0; j<3; j++)
  { let = let +1;
    for (i=0; i<9; i++)
      cray [j][i] = let + i;
    cray [j][9] = '\0';
  }
  for (j=0; j<3; j++)
    printf("j = %d, char = %s\n", j, cptr[j]);
  return 0;
}
```

```
./charray
j = 0, char = BCDEFGHIJ
j = 1, char = CDEFGHIJK
j = 2, char = DEFGHIJKL
```