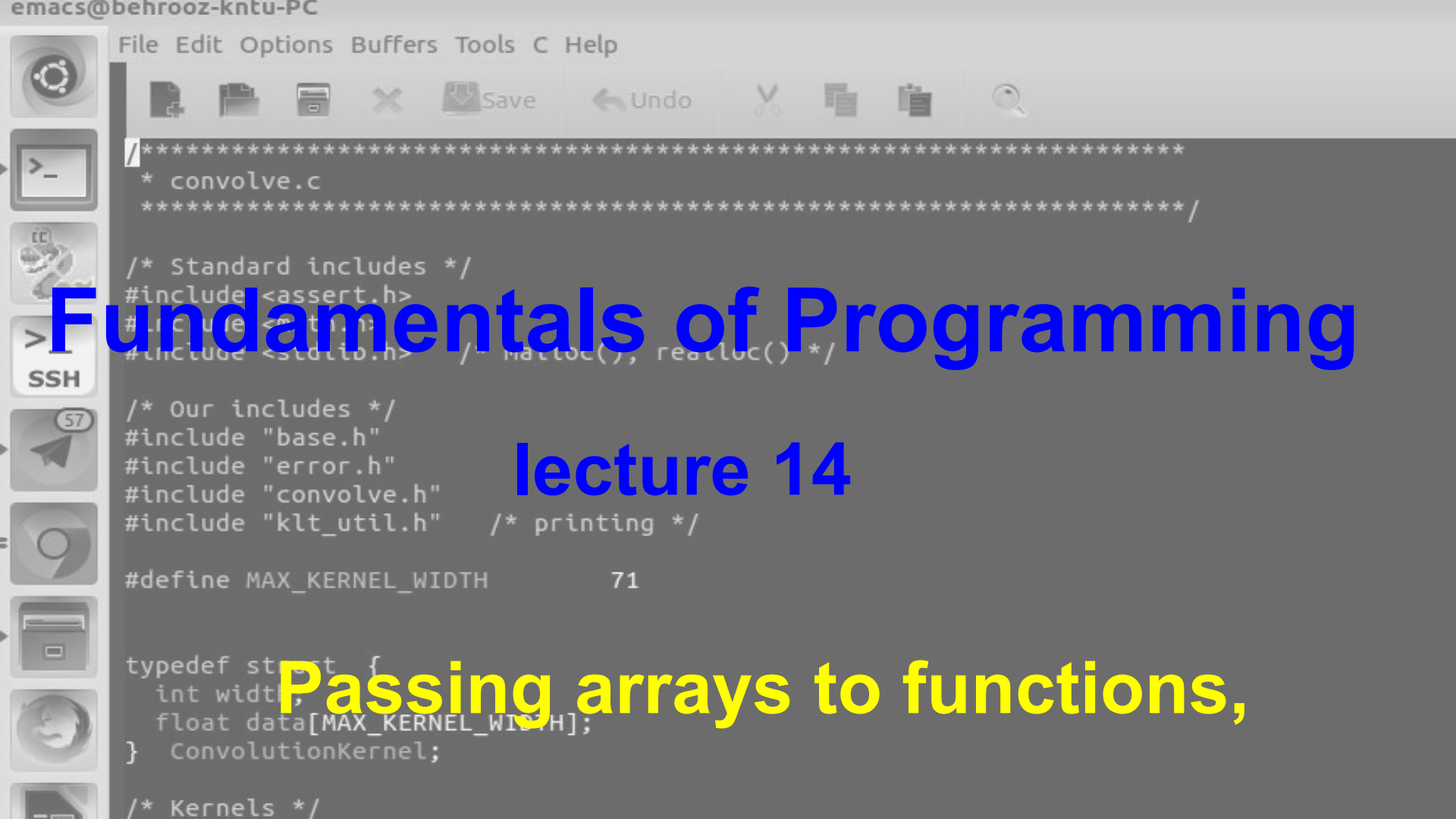
emacs@behrooz-kntu-PC
File Edit Options Buffers Tools C Help
Save
Undo
/* Standard includes */
#include <assert.h>
/* Our includes */
#include "base.h"
#include "error.h"
#include "convolve.h"
#include "klt_util.h" /* printing */
#define MAX_KERNEL_WIDTH 71
typedef struct {
int width;
float data[MAX_KERNEL_WIDTH];
} ConvolutionKernel;
/* Kernels */
SSH
Fundamentals of Programming
lecture 14
Passing arrays to functions,

Passing arrays to functions

```c
#include <stdio.h>

void myPuts(char[]);

int main() {
  char s[100] = "Salam Kako!!";

  myPuts(s);

  return 0;
}

void myPuts(char s[]) {

  for (int i = 0; s[i] != '\0'; i++)
    putchar(s[i]);

  putchar('\n');

}
```

arrayfunc.c

Passing arrays to functions

```c
void printArray(int a[], int n);

int main() {
  int a[] = {1,2,3,4,5,6};

  printArray(a, 6);

  return 0;
}

void printArray(int a[], int n) {
  for (int i = 0; i < n; i++)
    printf("%d, ", a[i]);

  putchar('\n');

}
```

arrayfunc2.c

Passing arrays to functions

```c
void printArray(int a[], int n);

int main() {
  int a[] = {1,2,3,4,5,6};

  printArray(a, 4);

  return 0;
}

void printArray(int a[], int n) {
  for (int i = 0; i < n; i++)
    printf("%d, ", a[i]);

  putchar('\n');

}
```

Passing arrays to functions

```c
void printArray(int a[], int n);

int main() {
  int a[] = {1,2,3,4,5,6};
  printArray(a, 8);

  return 0;
}

void printArray(int a[], int n) {
  for (int i = 0; i < n; i++)
    printf("%d, ", a[i]);

  putchar('\n');

}
```

Passing arrays to functions

```c
void printArray(int a[], int n);

int main() {
  int a[] = {1,2,3,4,5,6};

  printArray(a, 80000);

  return 0;
}

void printArray(int a[], int n) {
  for (int i = 0; i < n; i++)
    printf("%d, ", a[i]);

  putchar('\n');

}
```

Changing array elements inside function

```c
#include <stdio.h>

void printArray(int[], int);
void changeArray(int[]);

int main() {
  int a[] = {1,2,3,4,5,6};

  printArray(a, 6);

  changeArray(a);

  printArray(a, 6);

  return 0;
}

void changeArray(int a[]) {
  a[0] = 8;
}

void printArray(int a[], int n) {
  for (int i = 0; i < n; i++)
    printf("%d, ", a[i]);
  putchar('\n');
}
```

arrayfunc3.c

const

```c
#include <stdio.h>


int main() {
  const int a = 10;

  a += 10;

}
```

const.c

const

```c
#include <stdio.h>


int main() {
  const int a = 10;

  a += 10;

}
```

```
behrooz:code$ gcc const.c
const.c: In function ‘main’:
const.c:7:5: error: assignment of read-only variable ‘a’
   a += 10;
     ^
```

const.c

const for arrays (principle of least privilege)

```c
#include <stdio.h>

void printArray(const int[], int);
void changeArray(int[]);

int main() {
  int a[] = {1,2,3,4,5,6};

  printArray(a, 6);

  changeArray(a);

  printArray(a, 6);

  return 0;
}

void changeArray(int a[]) {
  a[0] = 8;
}

void printArray(const int a[], int n) {
  for (int i = 0; i < n; i++)
    printf("%d, ", a[i]);
  putchar('\n');
}
```

arrayfunc4.c

const for arrays (principle of least privilege)

```c
#include <stdio.h>

void printArray(const int[], int);
void changeArray(const int[]);

int main() {
  int a[] = {1,2,3,4,5,6};

  printArray(a, 6);

  changeArray(a);

  printArray(a, 6);

  return 0;
}

void changeArray(const int a[]) {
  a[0] = 8;
}

void printArray(const int a[], int n) {
  for (int i = 0; i < n; i++)
    printf("%d, ", a[i]);
  putchar('\n');
}
```

arrayfunc5.c

const for arrays (principle of least privilege)

```c
#include <stdio.h>

void printArray(const int[], int);
void changeArray(const int[]);

int main() {
  int a[] = {1,2,3,4,5,6};

  printArray(a, 6);

  changeArray(a);

  printArray(a, 6);

  return 0;
}

void changeArray(const int a[]) {
  a[0] = 8;
}

void printArray(const int a[], int n) {
  for (int i = 0; i < n; i++)
    printf("%d, ", a[i]);
  putchar('\n');
}
```

arrayfunc5.c

const for arrays (principle of least privilege)

```c
#include <stdio.h>

void printArray(const int[], int);
void changeArray(const int[]);

int main() {
  int a[] = {1,2,3,4,5,6};

  printArray(a, 6);

  changeArray(a);

  printArray(a, 6);

  return 0;
}

void changeArray(const int a[]) {
  a[0] = 8;
}

void printArray(const int a[], int n) {
  for (int i = 0; i < n; i++)
    printf("%d, ", a[i]);
  putchar('\n');
}
```

```
behrooz:code$ gcc arrayfunc5.c
arrayfunc5.c: In function ‘changeArray’:
arrayfunc5.c:19:8: error: assignment of read-only location ‘*a’
   a[0] = 8;
        ^
```

arrayfunc5.c