

CSE 541

Matlab Introduction

Starting Matlab on Unix:

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1. Login to stdsun;
2. Enter “matlab &”.

Arithmetic operations

Arithmetic operations: +, -, *, /, ^

Example:

```
>> 1+(2+3)^4/(6-1)
```

```
ans =
```

```
126
```

```
>> x=1+(2+3)^4/(6-1)
```

```
x =
```

```
126
```

```
>> y=x+2;
```

```
>> y
```

```
y =
```

```
128
```

Builtin Arithmetic Functions

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Some useful builtin arithmetic functions:

cos

sin

pi

exp

log

log10

log2

abs

factorial

sqrt

Builtin Arithmetic Functions: Example

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Example:

```
>> pi
```

```
ans =
```

```
3.1416
```

```
>> format long
```

```
>> pi
```

```
ans =
```

```
3.14159265358979
```

```
>> sin(pi/4)
```

```
ans =
```

```
0.70710678118655
```

```
>> cos(pi/4)
```

```
ans =
```

```
0.70710678118655
```

```
>> 1/sqrt(2)
```

```
ans =
```

```
0.70710678118655
```

```
function [result] = f(arg1, arg2, ...)
```

Example:

```
function [result] = fplus(x1, x2)
% return x1+x2 (comment)
```

```
result = x1 + x2;
```

Function `fplus` is stored in file `fplus.m`.

Click on `File-->New-->M-file` to create a new `.m` file.

```
>> fplus(2,3)
```

```
ans =
```

```
    5
```

Control Statements

```
for ... end
```

```
while ... end
```

```
if ... then ... else ... end
```

Example:

```
sum = 0.0;
```

```
for i = 1:1:10
```

```
    sum = sum + i;
```

```
end
```