Лекция 4

- Системный вызов fork() (продолжение).
- Прекращение выполнения процесса. Zombie.

```c
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>

int main(){
 pid_t child_pid;

 child_pid=fork();
```

```c
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>
#include <wait.h>

int main(){
 pid_t child_pid;
 int  child_status;

 child_pid=fork();
```

```
if( child_pid!=0)
  pause();

return 0;
}
```

```
if( child_pid!=0){
  wait(&child_status);
  pause();
}

return 0;
}
```

```
~> ps -e -o pid,ppid,pgid,sid,state,command  | grep 3294
```
```
 3294  3224  3294  3294 S /bin/bash
 4743  3294  4743  3294 S ./pz
 4744  4743  4743  3294 Z [pz] <defunct>
```

```
~> kill 4744
~> ps -e -o pid,command | grep pz
```
```
4743 ./pz
 4744 [pz] <defunct>
```

```c
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>
#include <wait.h>

int main(){
 pid_t child_pid;
 int child_status;

 child_pid=fork();
```

```
if( child_pid==0){
    fprintf(stdout, "%d\n", getpid());
    fprintf(stdout, "%d\n", getppid());
    fprintf(stdout, "%d\n", getpgid(getpid()));
    fprintf(stdout, "%d\n", getsid(getpid()));
 }
```

```
else if( child_pid!=0){
  wait(&child_status);
  fprintf(stdout, "\n\n%d\n", getpid());
  fprintf(stdout, "%d\n", getppid());
  fprintf(stdout, "%d\n", getpgid(getpid()));
  fprintf(stdout, "%d\n", getsid(getpid()));
 }
 return 0;
}
```

```
~>./pw
8599    8598    8598    3294
8598    3294    8598    3294
```

```c
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>
#include <signal.h>

void oldman(){
  fprintf(stdout, "I'm not yet dead! ID is %i\n", (int) getpid());
}
void recreation(){
  fprintf(stdout, "Who I am? ID is %i\n", (int) getpid());
}
```

```
int main(){
  pid_t child_pid, parent_pid;
  int i=0;


  parent_pid=(int) getpid();


  child_pid=fork();
```

```
while(i++<5)
 if(child_pid!=0){
   oldman();
   usleep(100);
   if(i==3) kill(child_pid,SIGTERM);
 }
 else{
  recreation();
  usleep(100);
}
```

```
  if(child_pid!=0) pause();
  return 0;
}
```

I'm not yet dead! My ID is 11625
Who I am? My ID is 11626
I'm not yet dead! My ID is 11625
I'm not yet dead! My ID is 11625
Who I am? My ID is 11626
I'm not yet dead! My ID is 11625
I'm not yet dead! My ID is 11625

I'm not yet dead! My ID is 11639
Who I am? My ID is 11640
I'm not yet dead! My ID is 11639
Who I am? My ID is 11640
I'm not yet dead! My ID is 11639
Who I am? My ID is 11640
I'm not yet dead! My ID is 11639
I'm not yet dead! My ID is 11639

```
~> ./pk
I'm not yet dead! ID is 4429
Who I am? ID is 4430
I'm not yet dead! ID is 4429
I'm not yet dead! ID is 4429
Who I am? ID is 4430
I'm not yet dead! ID is 4429
I'm not yet dead! ID is 4429
|
```

```
~> ps -e -o pid,ppid,pgid,sid,state,command | grep pk
 4429  3241  4429  3241 S ./pk
 4430  4429  4429  3241 Z [pk] <defunct>
```