

Practice Problems on Fork()

1. Find outputs of the following code.

```
main(){
    fork();
    fork();
    printf("hi\n");
    fork();
    printf("hello\n");
    fork();
    printf("bye\n");
}
```

2. Find outputs of the following code.

```
main(){
    fork();
    fork();
    c=fork();
    if(c>0){
        printf("hi\n");
        fork();
    }
    fork();
    printf("bye\n");
}
```

3. Find outputs of the following code.

```
int main(){
    pid_t p;
    int a=3;
    int b=11;
    char s[20];
    p=fork();
    if(p<0){
        printf("fork failed\n");
    }
    else if(p==0){
        strcpy(s,"child");
        a=a*b;
        b=b/a;
    }
    else{
        wait();
        strcpy(s,"parent");
        a=a+b;
        b=b-a;
    }
    printf("%s is printing a= %d\n",s,a);
    printf("%s is printing b= %d\n",s,b);

    return 0;
}
```

4. Find outputs of the following code.

```
static int a=5;
static int b=3;
int main(){
    pid_t x, y;
    x=fork();
    if(x<0){
        printf("fork failed\n");
    }
    else if(x>0){
        a=a+5;
        b=b-5;
        wait();
        y=fork();
        if(y<0){
            printf("fork failed\n");
        }
        else if(y>0){
            wait();
            a=a-2;
            b=b+2;
        }
        else{
            a=a*2;
            b=b/3;
        }
    }
    else{
        a=a/2;
        b=b*3;
    }
    printf("a= %d\n",a);
    printf("b= %d\n",b);

    return 0;
}
```