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Heimadæmi 2
Tölvunarfræði 2

1.

Skipun	Gildi	Tag	x	ip	fp	y
int x = 0;	0	int	0			
int* ip = &x;	1000	int*		1000		
*ip += 1;	1	int	1			
float *fp = (float*)ip;	1000	float*			1000	
*fp = 1.0;	1.0	float	1065353216			
int y = *ip;	1065353216	int				1065353216

2.

```c
#include <stdio.h>
#include <stdlib.h>

char** split(const char* s, int *n) {
  int i = 0;
  int ord = 1;
  int stafir = 0;
  int maxst = 0;
  while (s[i] != '\0') {
    if (s[i] == ' ' || s[i] == '\t') {
      ord++;
      stafir = 0;
    }
    else {
      stafir++;
      if (stafir > maxst) maxst = stafir;
    }
    i++;
  }
  char** skil = (char**)malloc(ord*sizeof(char*));
  int stadur = 0;
  for (int i=0; i<ord; i++) {
    skil[i] = (char*)malloc(maxst*sizeof(char));
    int l = 0;
    while (s[stadur] != ' ' && s[stadur] != '\t' && s[stadur] != '\0') {
      skil[i][l] = s[stadur];
      stadur++;
      l++;
    }
    skil[i][l] = '\0';
    stadur++;
  }
  *n = ord;
  return skil;
}
int main() {
  char *s = "Frábær dagur";
  int n;
  char** split_s = split(s, &n);
  for(int i = 0; i < n; i++) {
    printf("%s", split_s[i]);
    free(split_s[i]);
  }
  free(split_s);
  printf("\n");
}
```

3.

```c
#include <stdlib.h>
#include <stdio.h>
#include <string.h>

double** array_init(int n, int m) {
  double** arr = (double**)malloc(sizeof(double*)*n);
  for (int i=0; i<n; i++) {
    arr[i] = malloc(sizeof(double)*m);
  }
  for (int i=0; i<n; i++) {
    for (int j=0; j<m; j++) {
      arr[i][j] = 0.0;
    }
  }
  return arr;
}

void array_free(double** arr, int n) {
  for (int i=0; i<n; i++) {
    free(arr[i]);
  }
  free(arr);
}
```