

Průchod grafu do šířky



EVROPSKÁ UNIE



MINISTERSTVO ŠKOLSTVÍ,
MLÁDEŽE A TĚLOVÝCHOVY

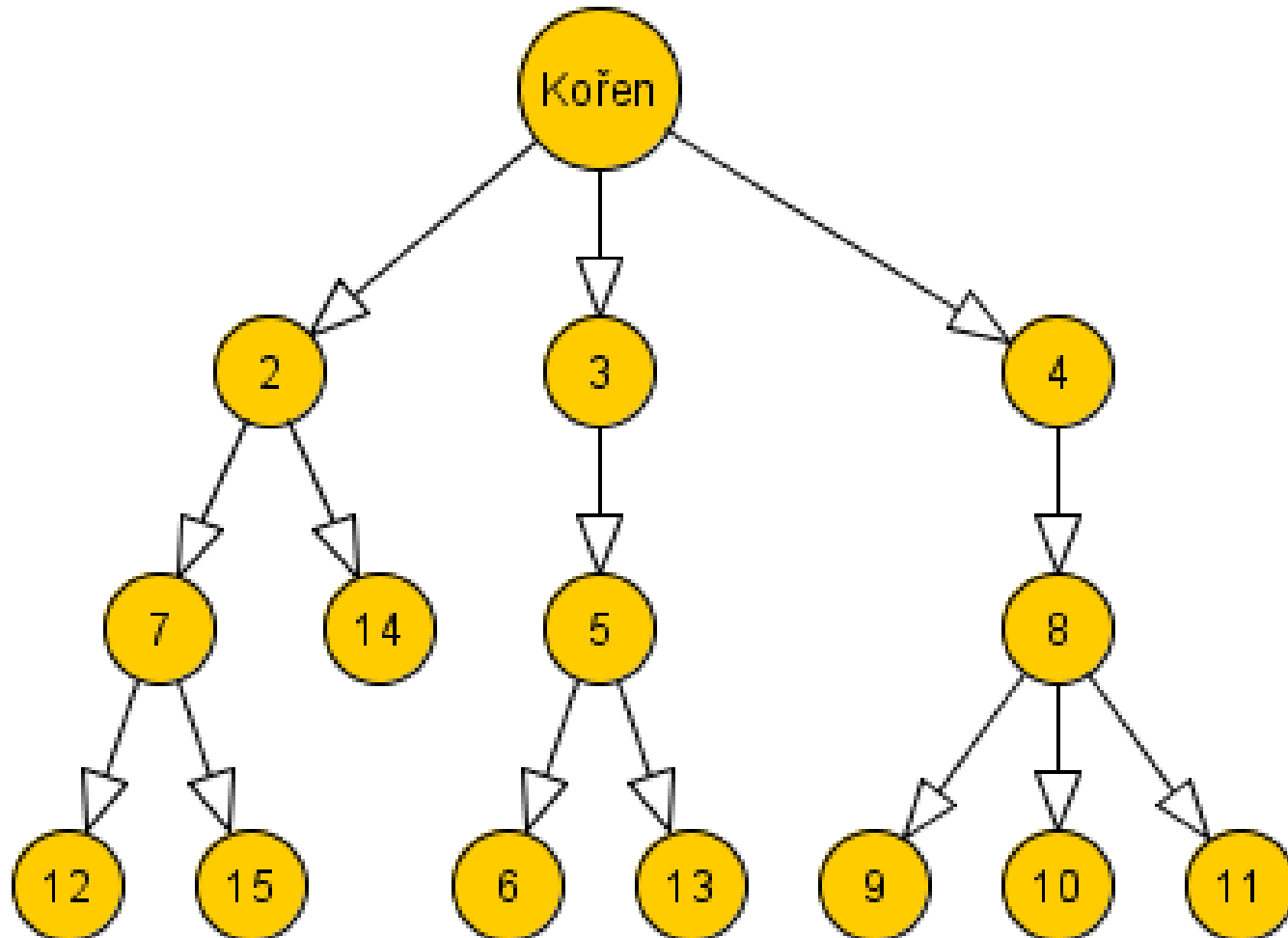


OP Vzdělávání
pro konkurenceschopnost



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

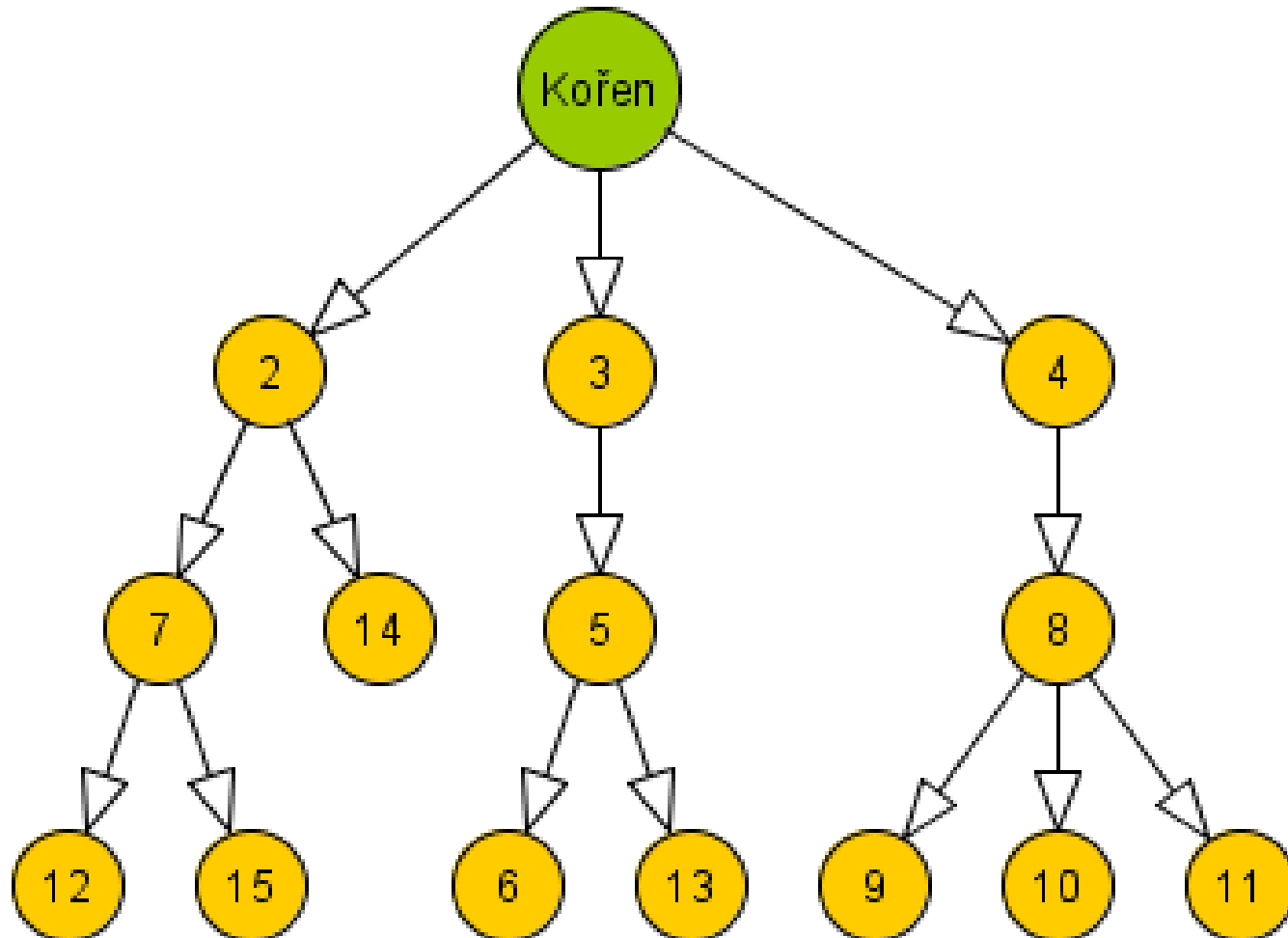
Průchod grafu do šířky



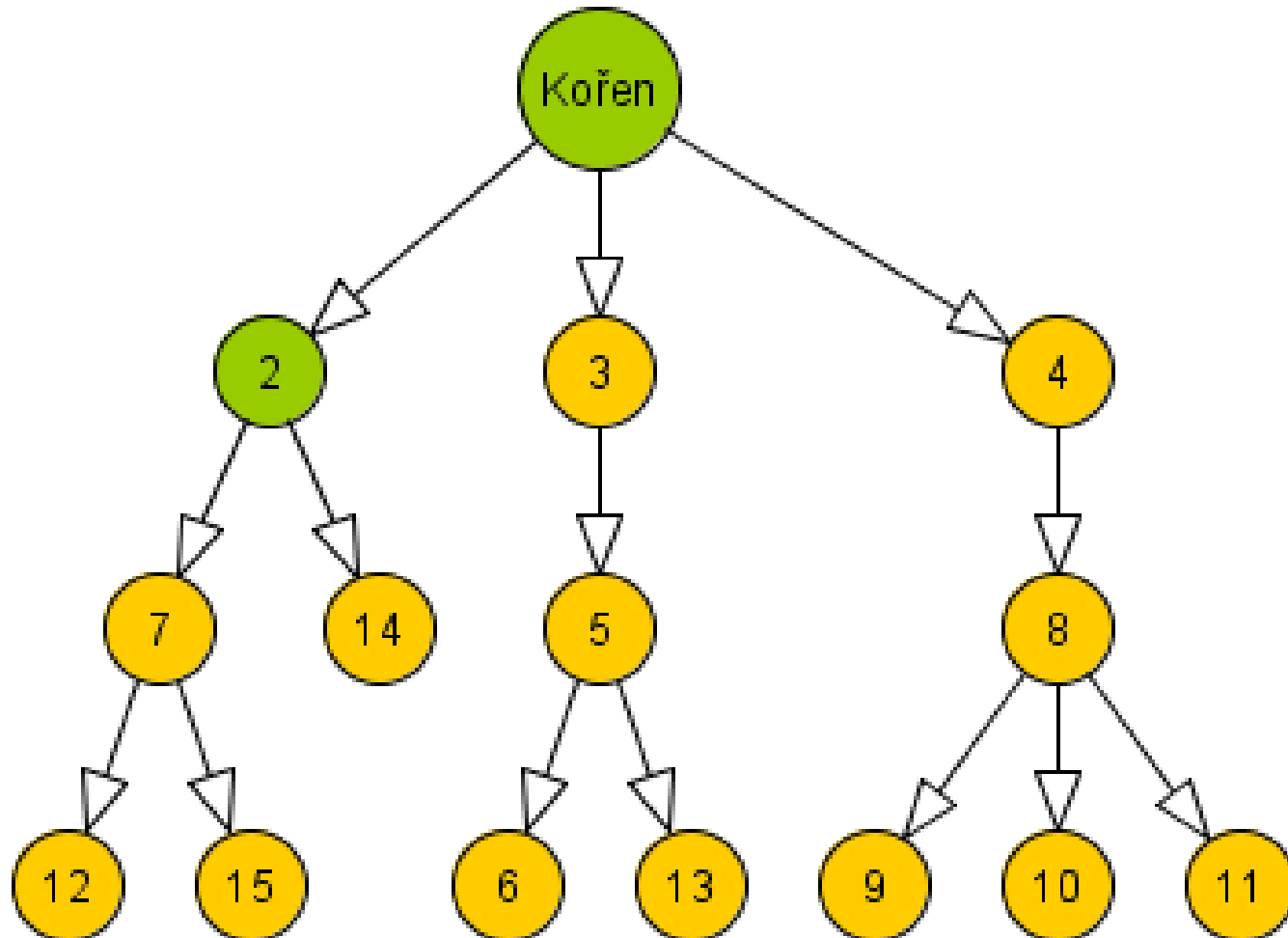
Průchod grafu do šířky

- Způsob jak projít grafem z vybraného vrcholu, abychom postupně navštívili všechny jeho vrcholy
- Procházíme zleva a „po patrech“ daného grafu
- Pro naprogramování používáme frontu

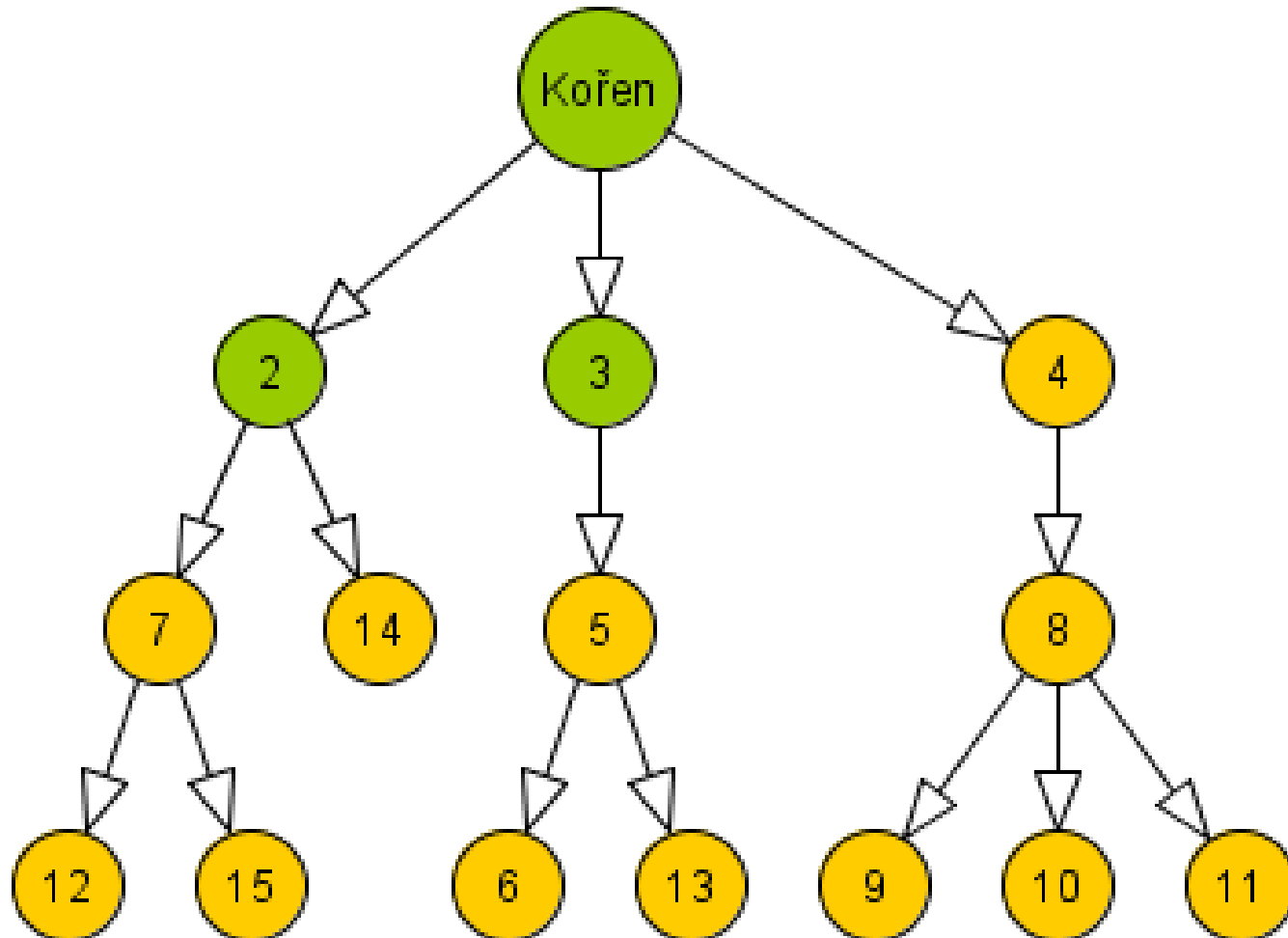
Průchod grafu do šířky



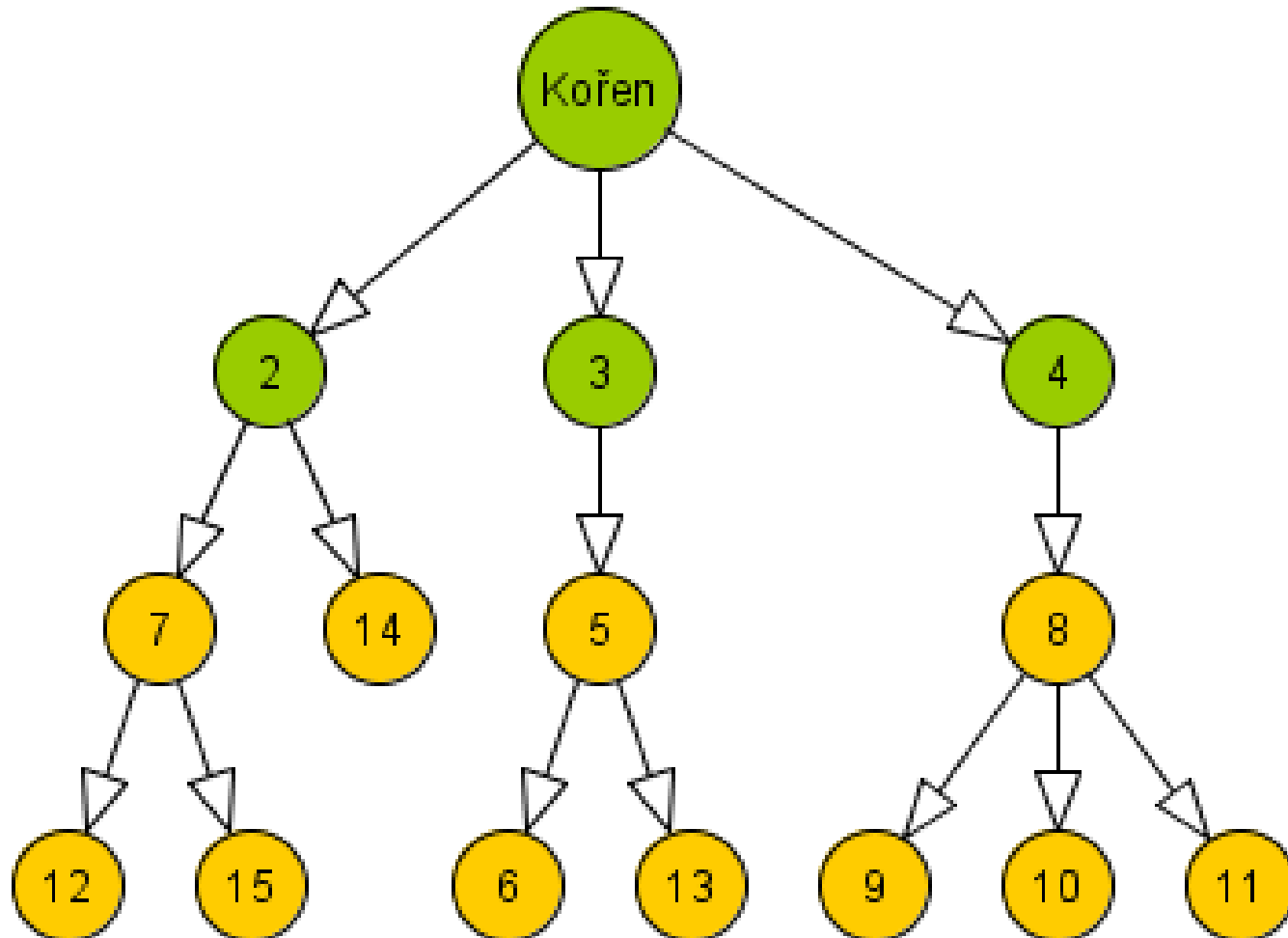
Průchod grafu do šířky



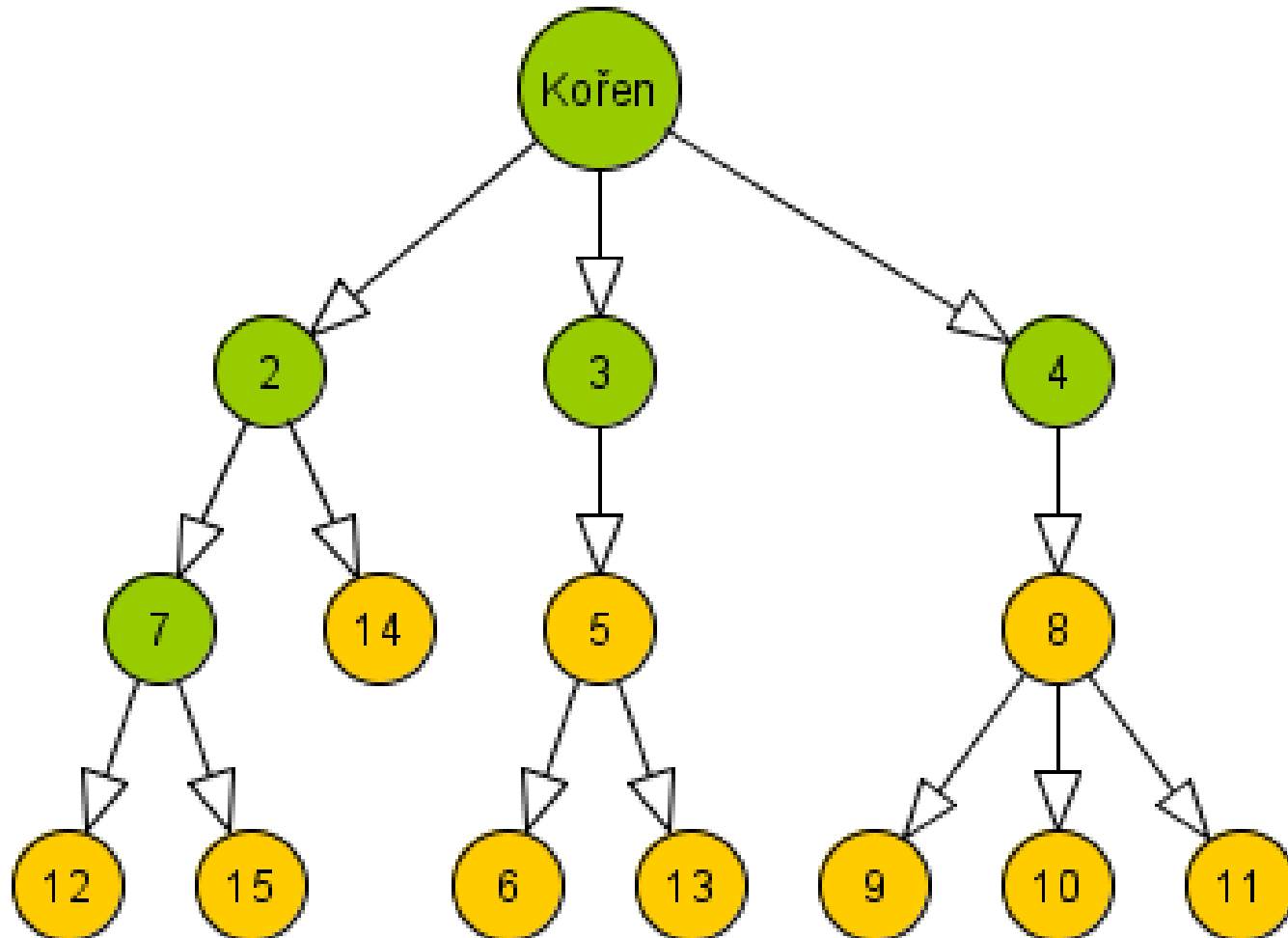
Průchod grafu do šířky



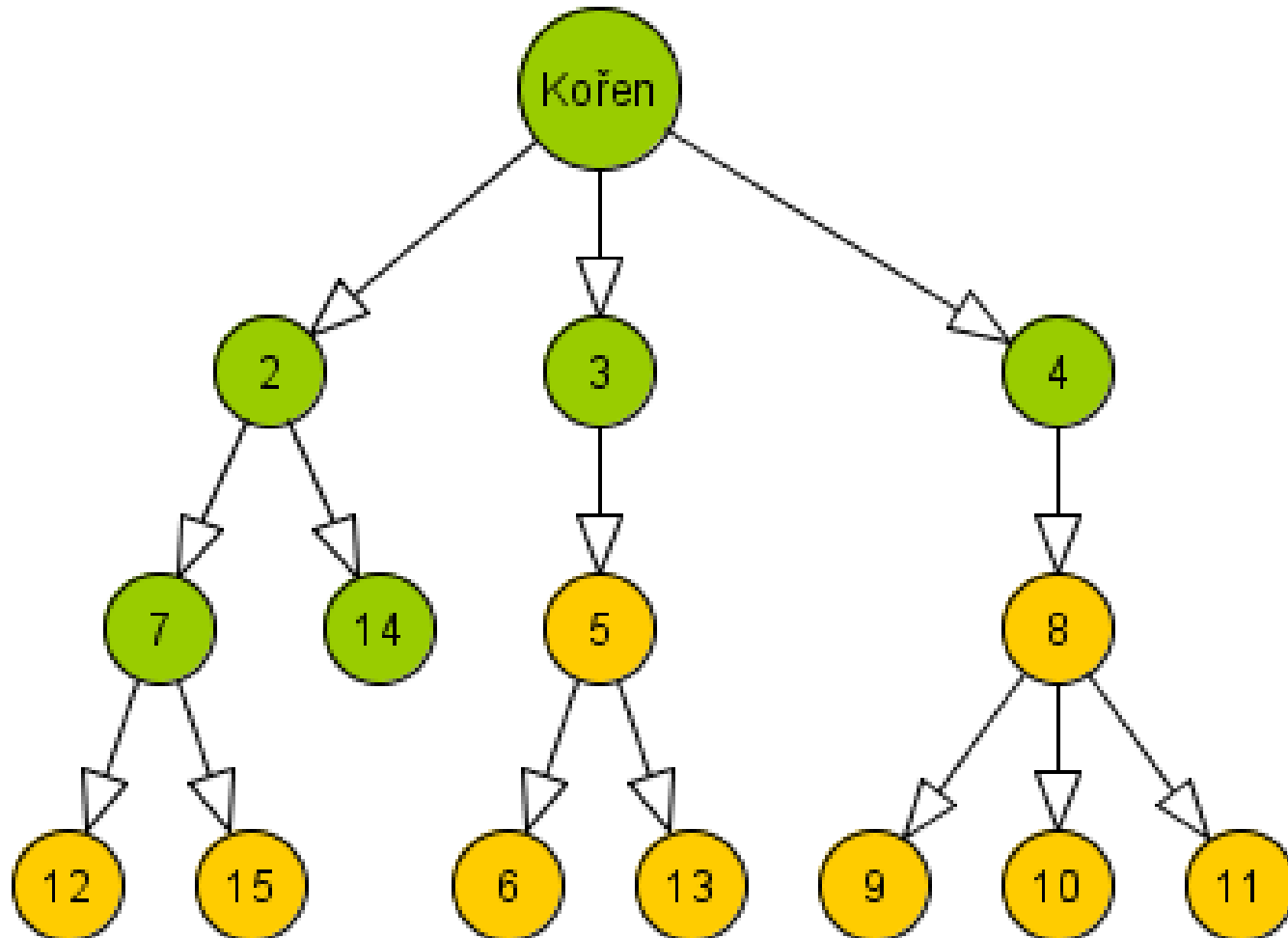
Průchod grafu do šířky



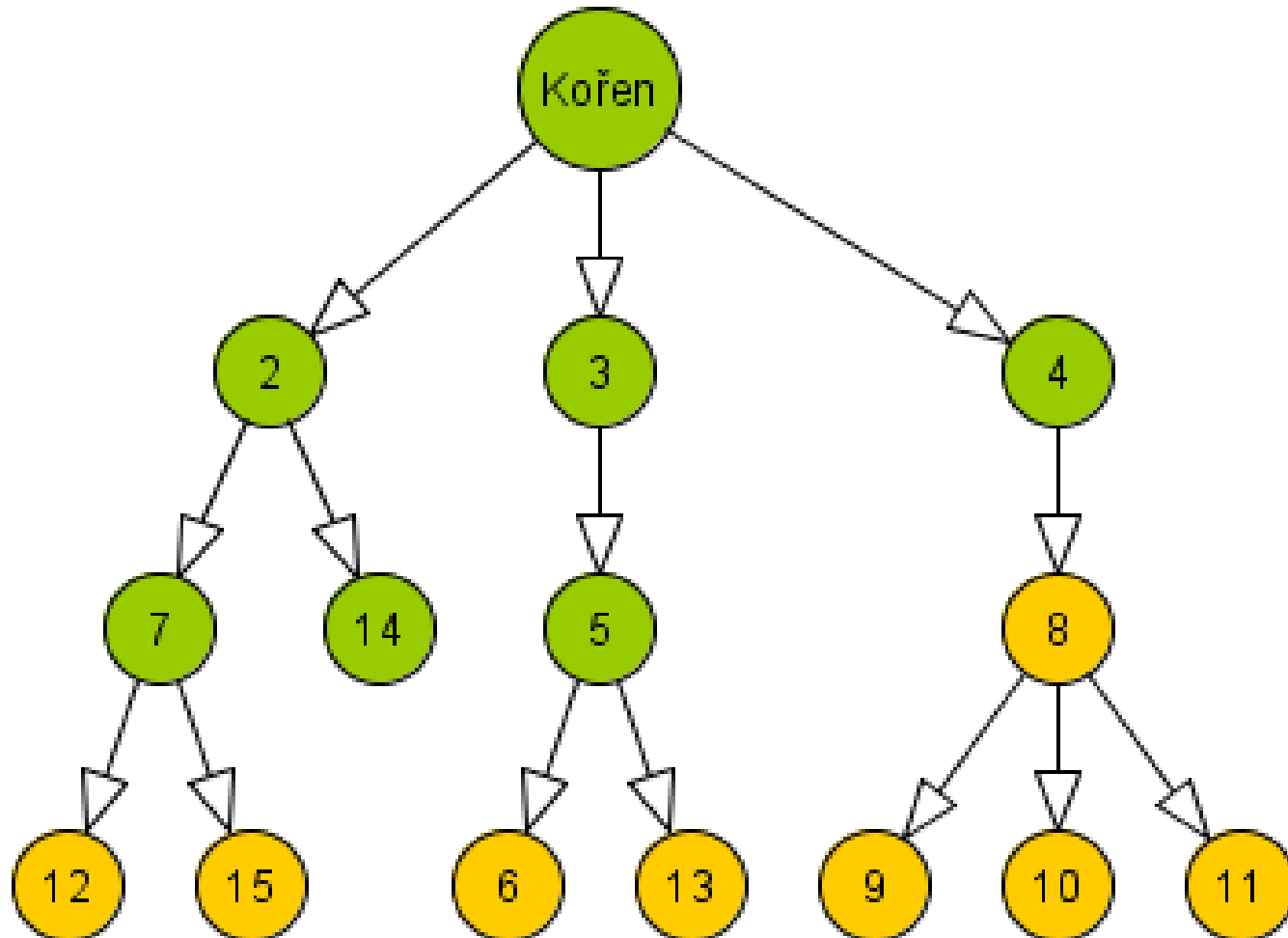
Průchod grafu do šířky



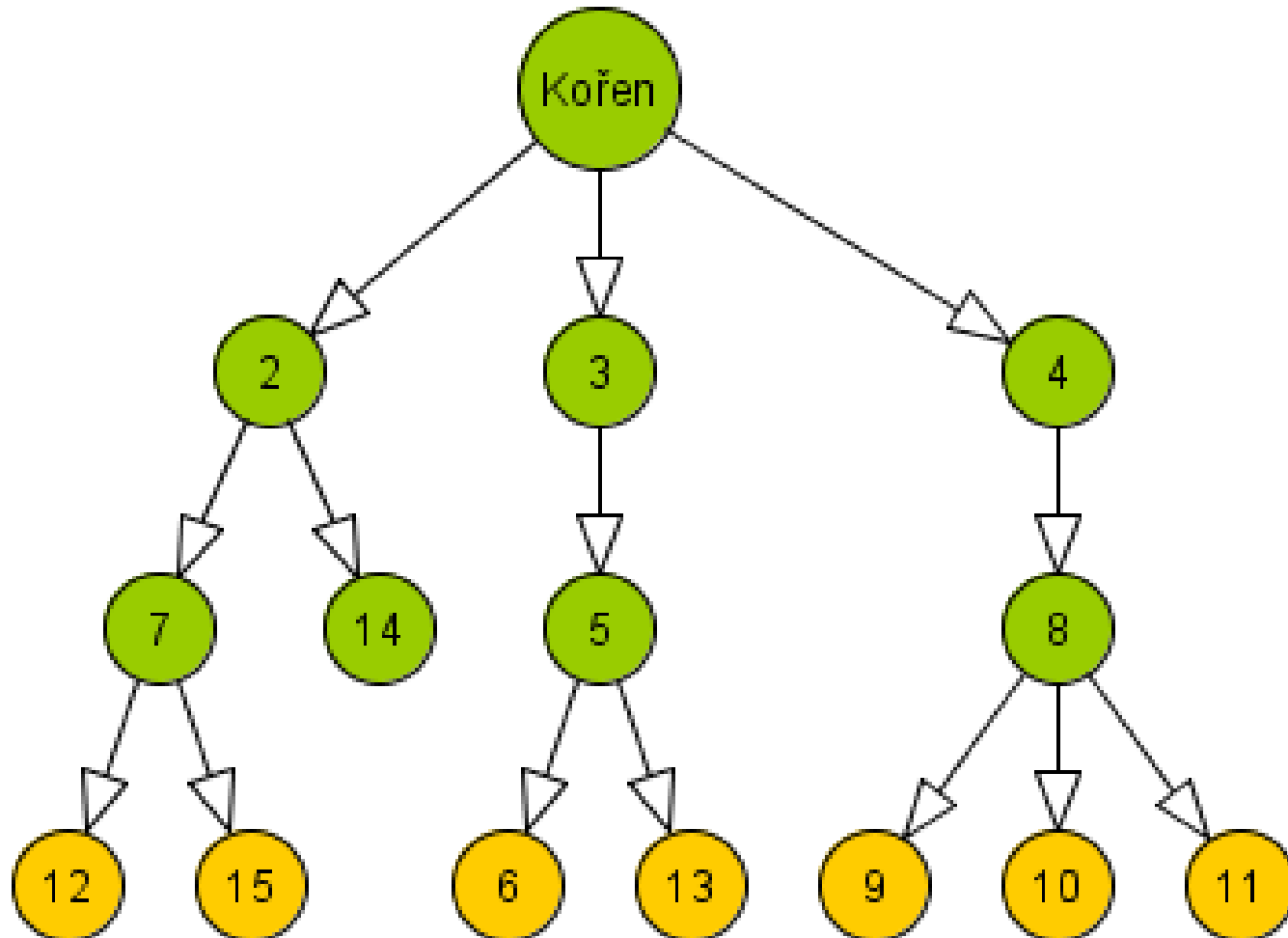
Průchod grafu do šířky



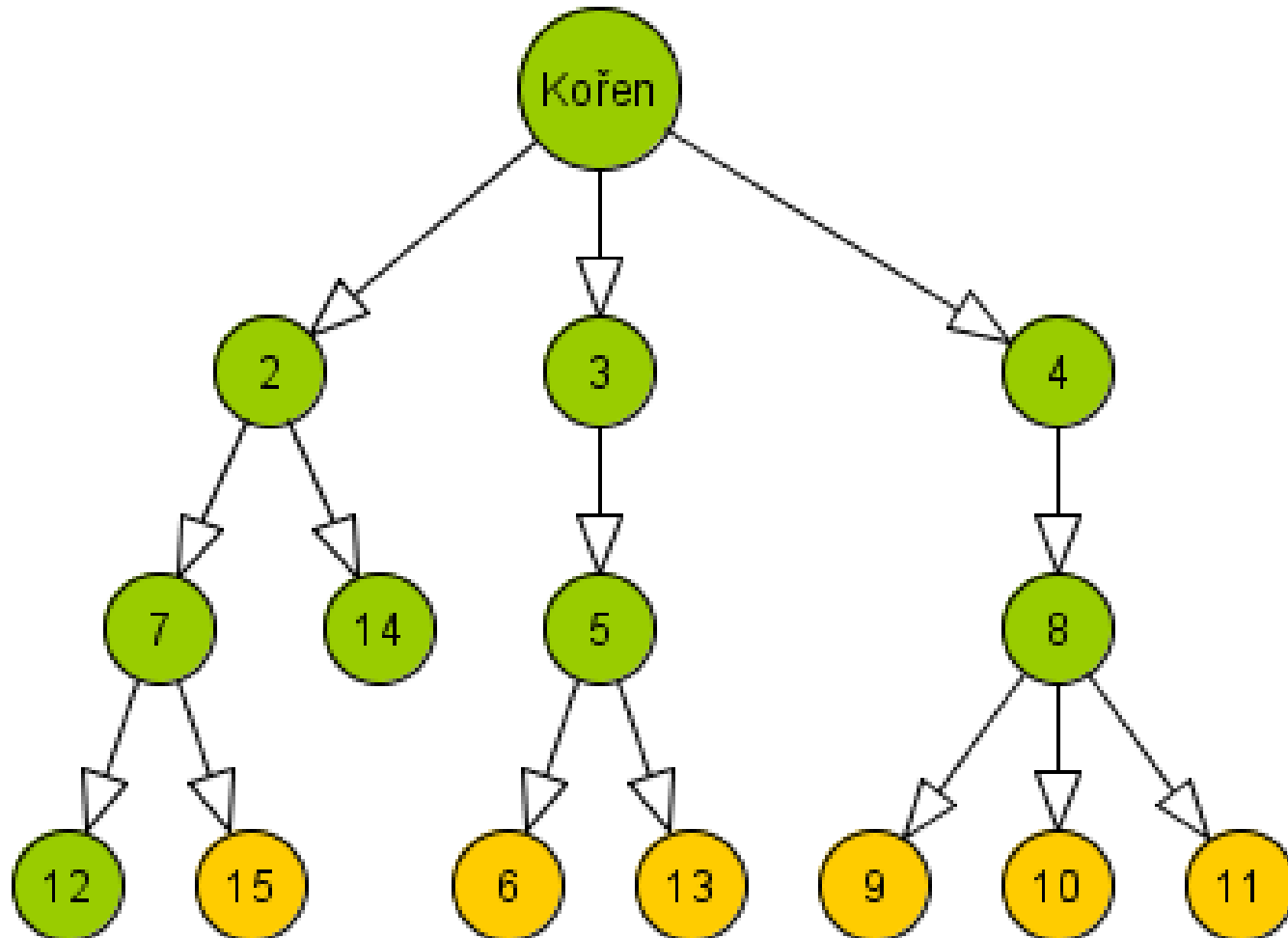
Průchod grafu do šířky



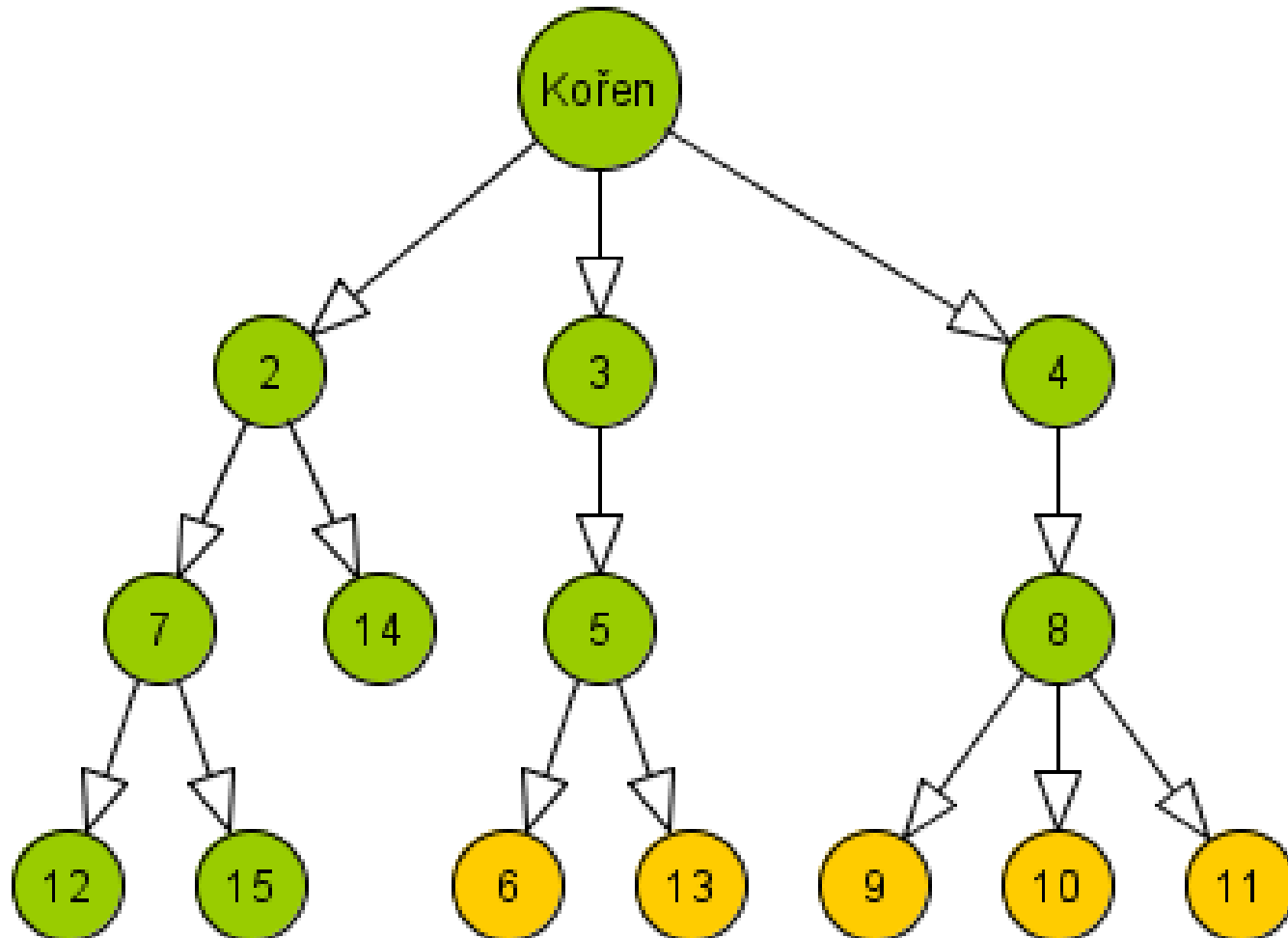
Průchod grafu do šířky



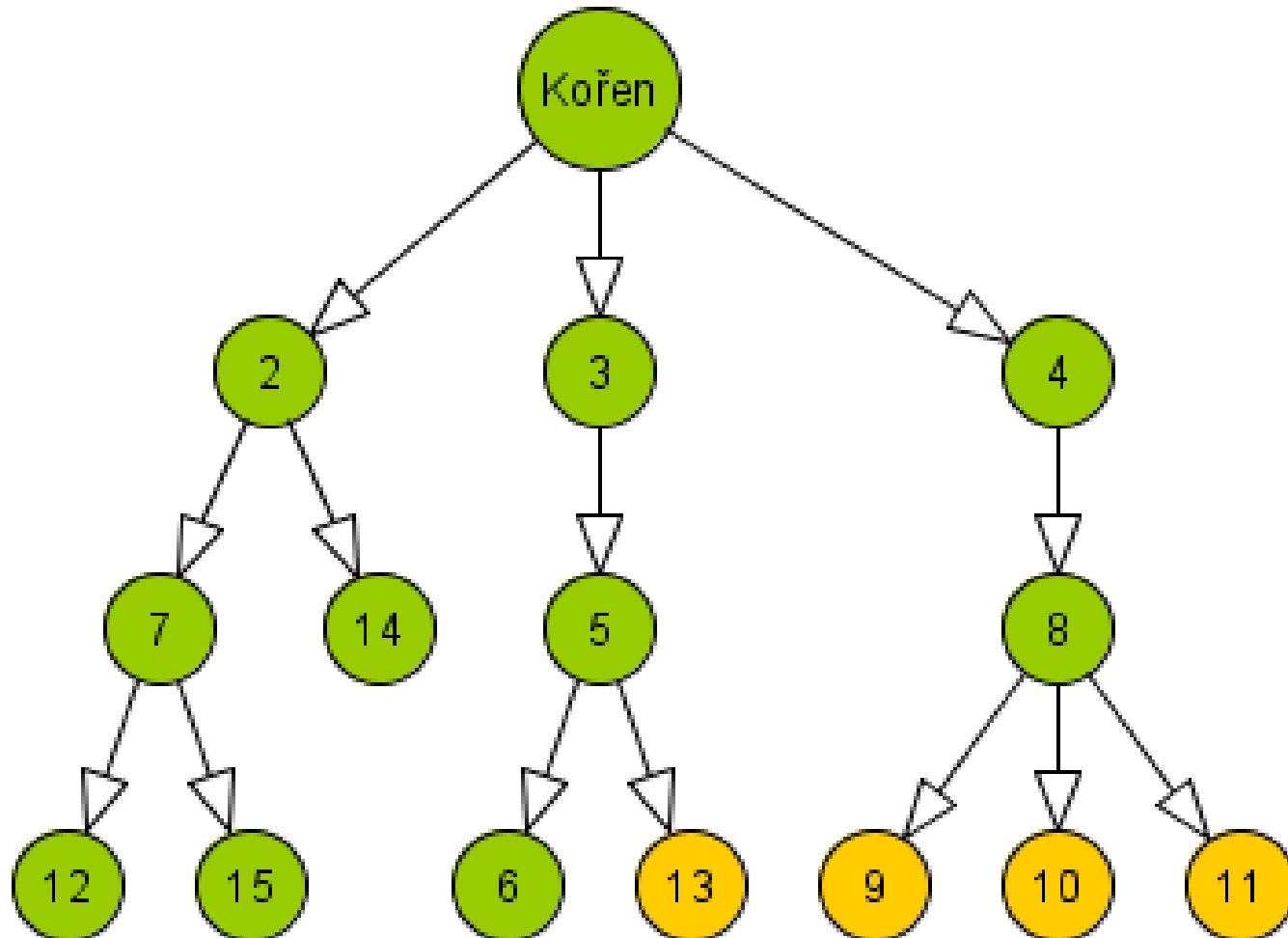
Průchod grafu do šířky



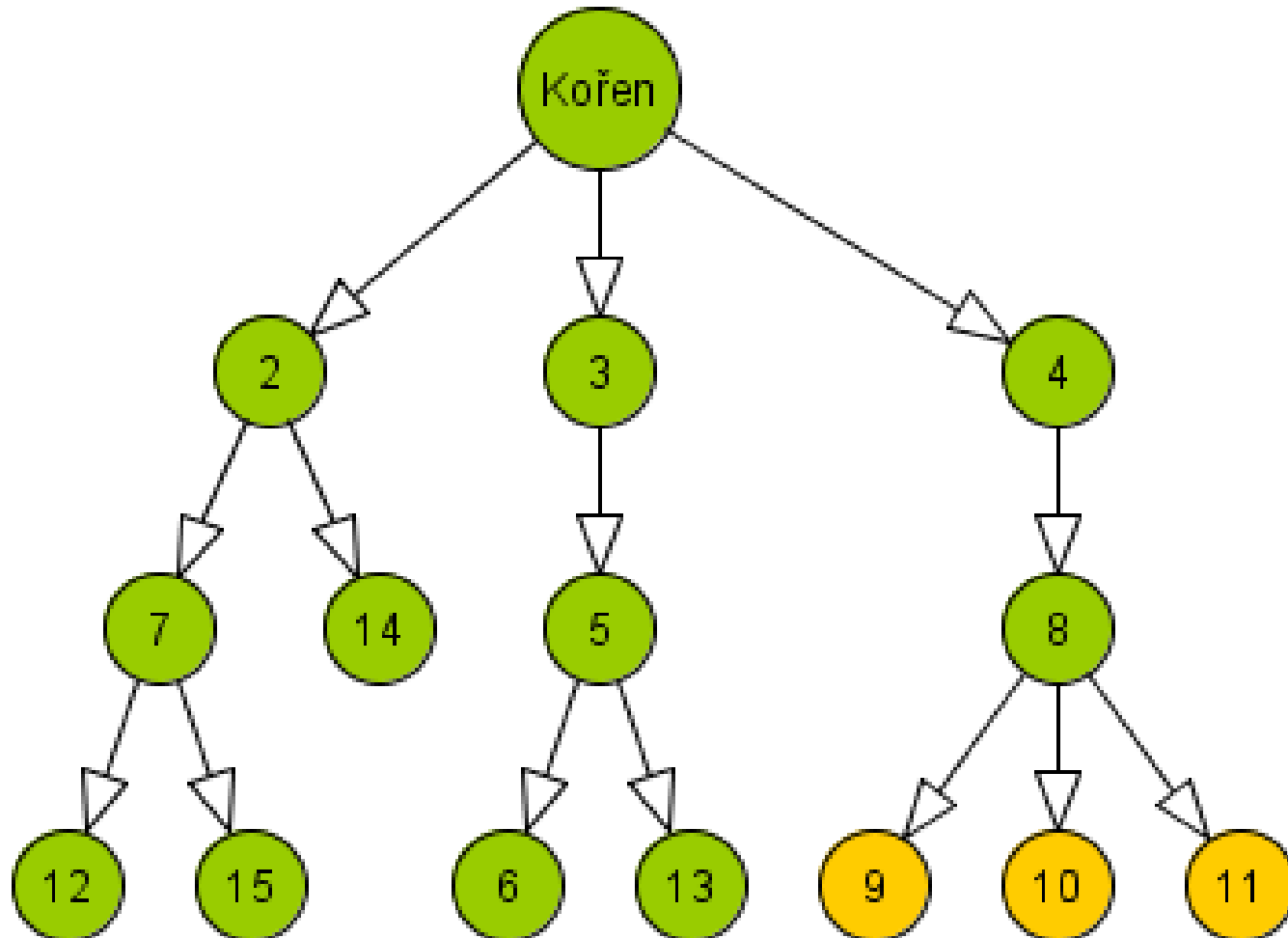
Průchod grafu do šířky



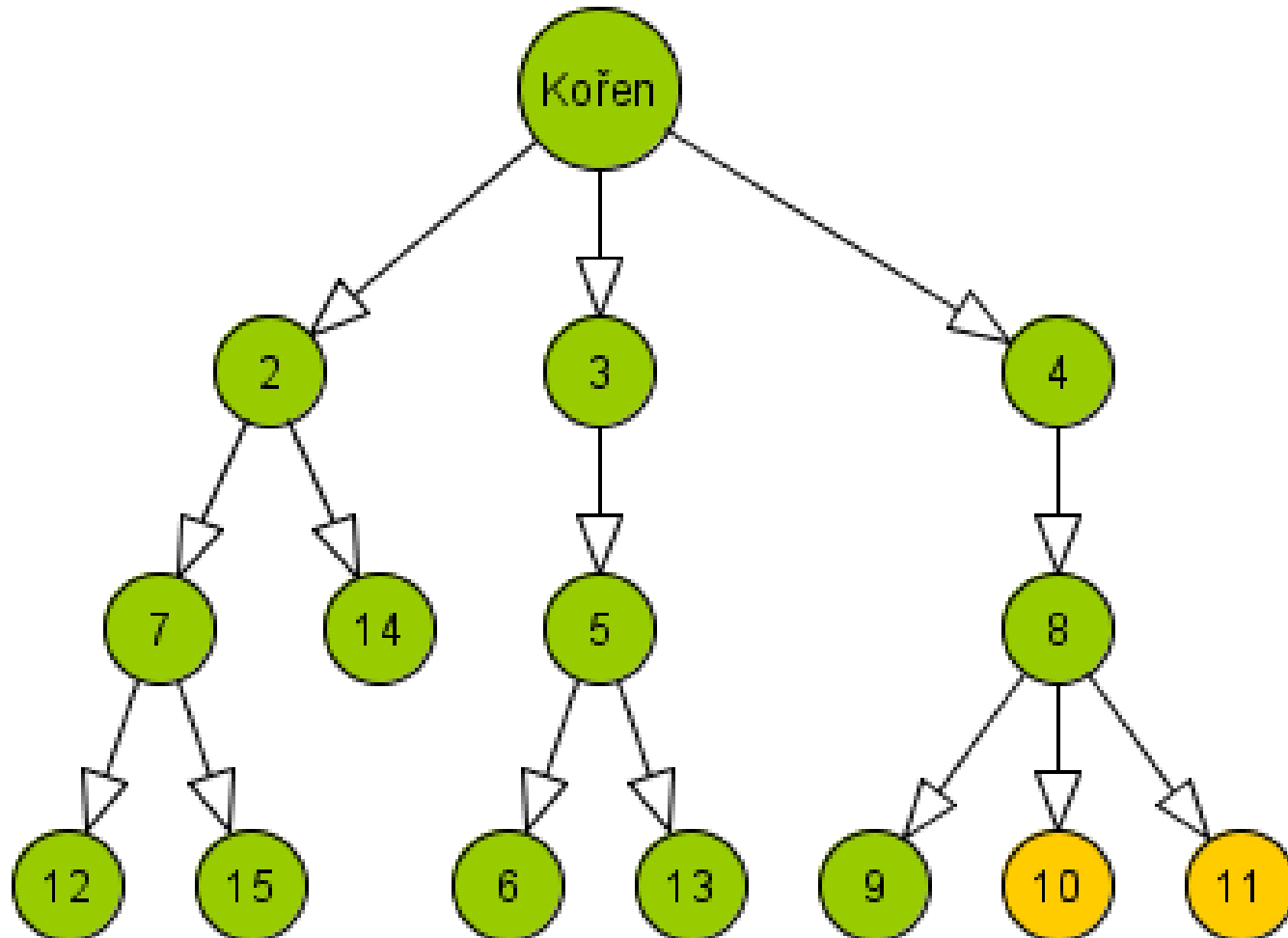
Průchod grafu do šířky



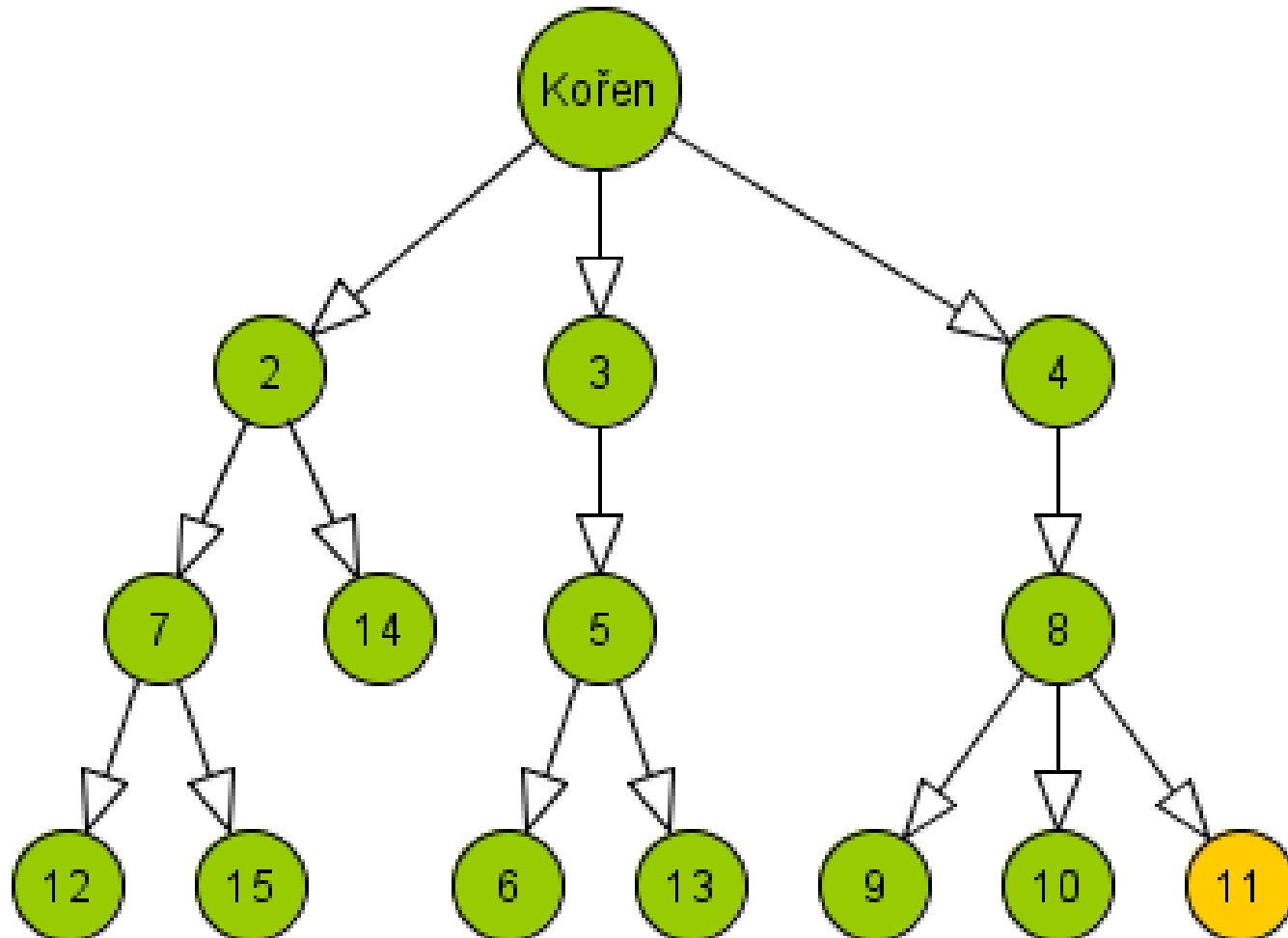
Průchod grafu do šířky



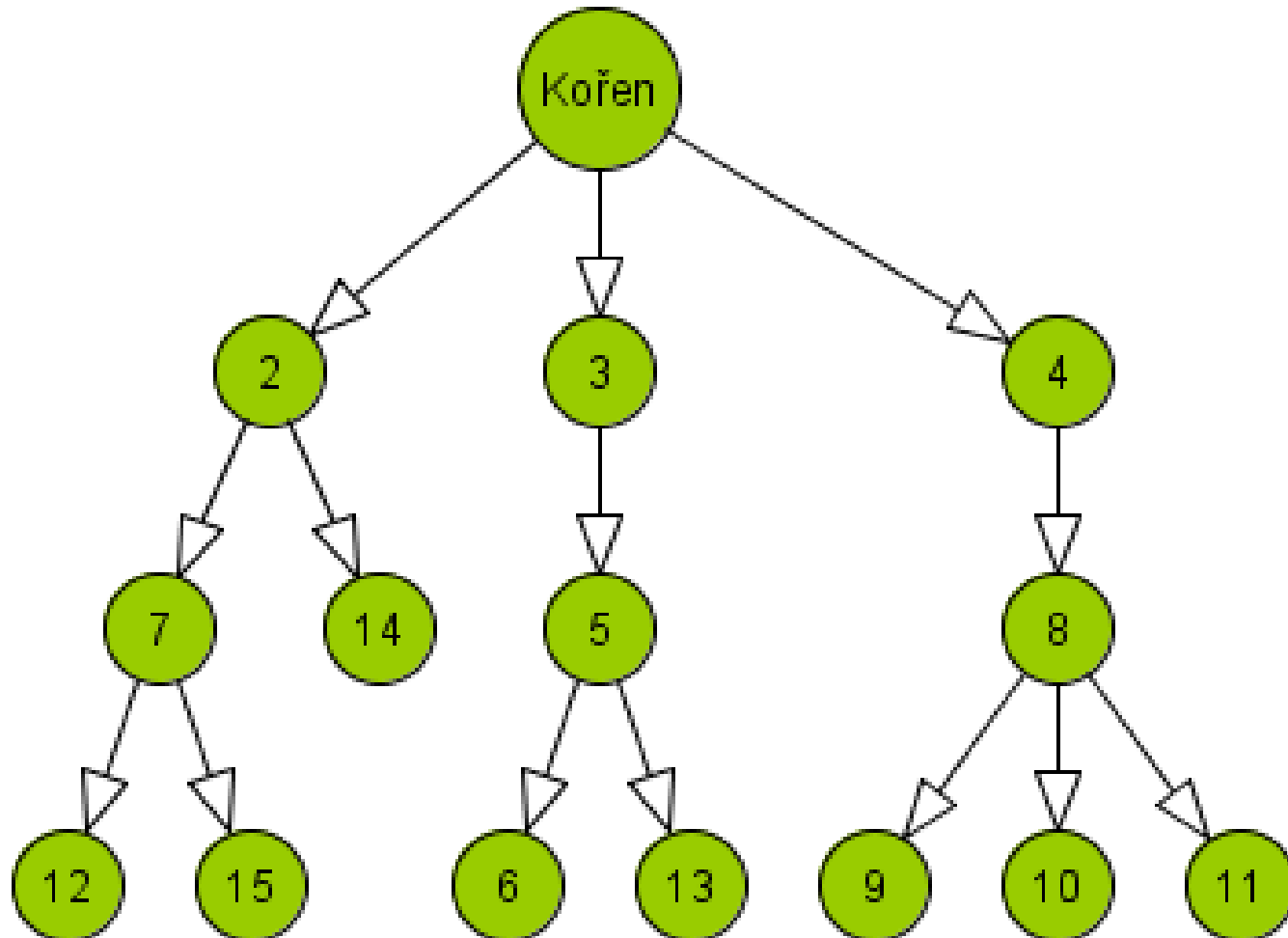
Průchod grafu do šířky



Průchod grafu do šířky



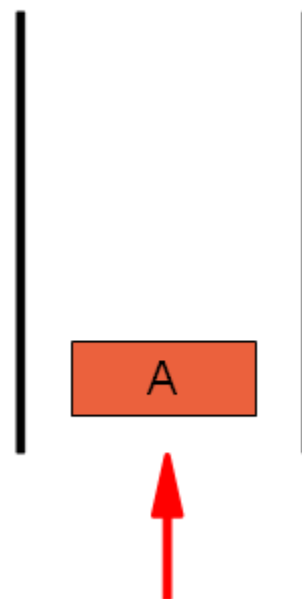
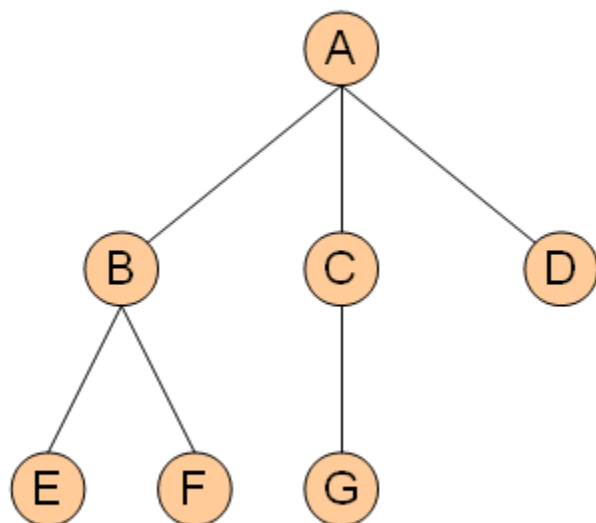
Průchod grafu do šířky



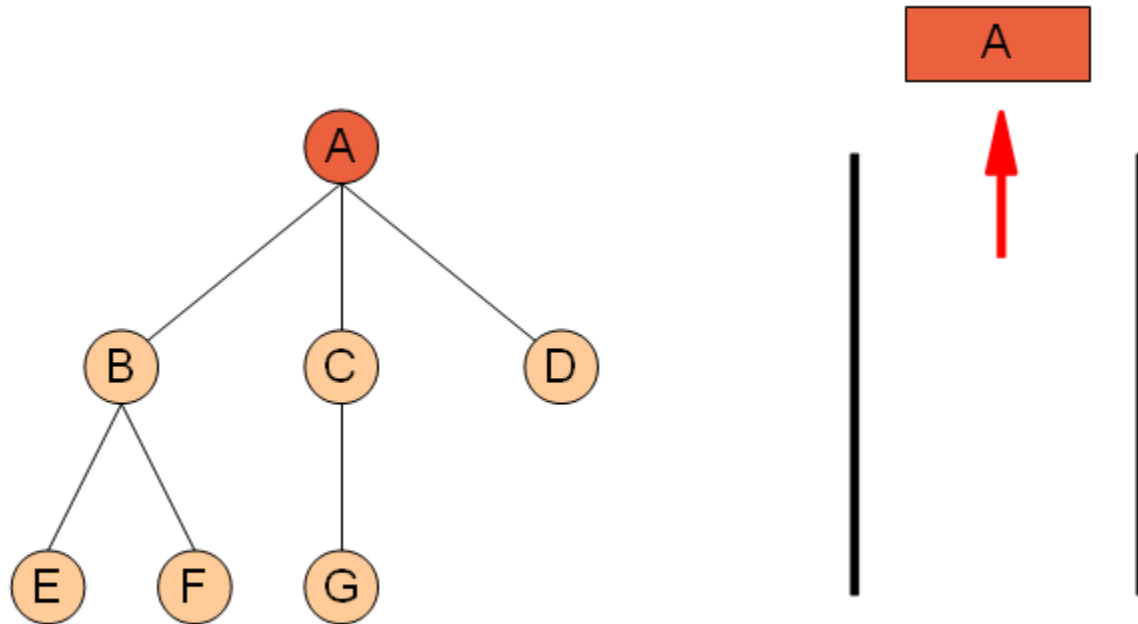
Fronta

- Využívá se pro průchod do šířky
- Má dvě základní funkce push a shift.
- Push – vloží prvek na konec fronty
- Shift – sejme prvek ze začátku fronty

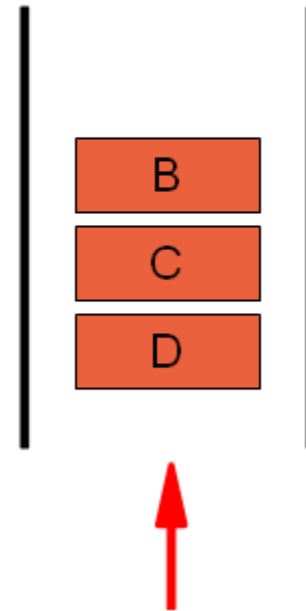
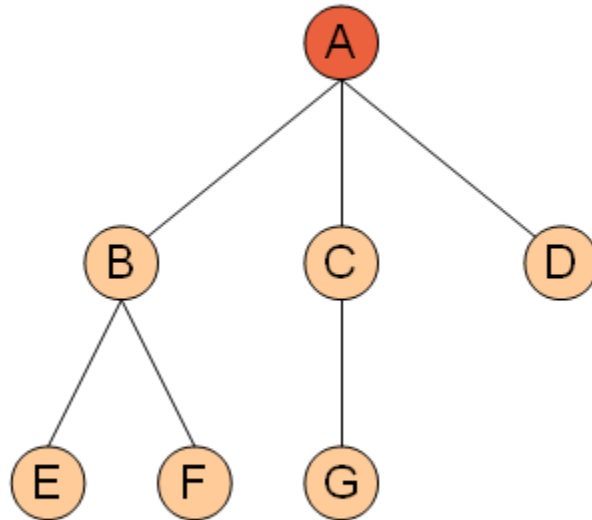
Push iniciálního prvku A do fronty



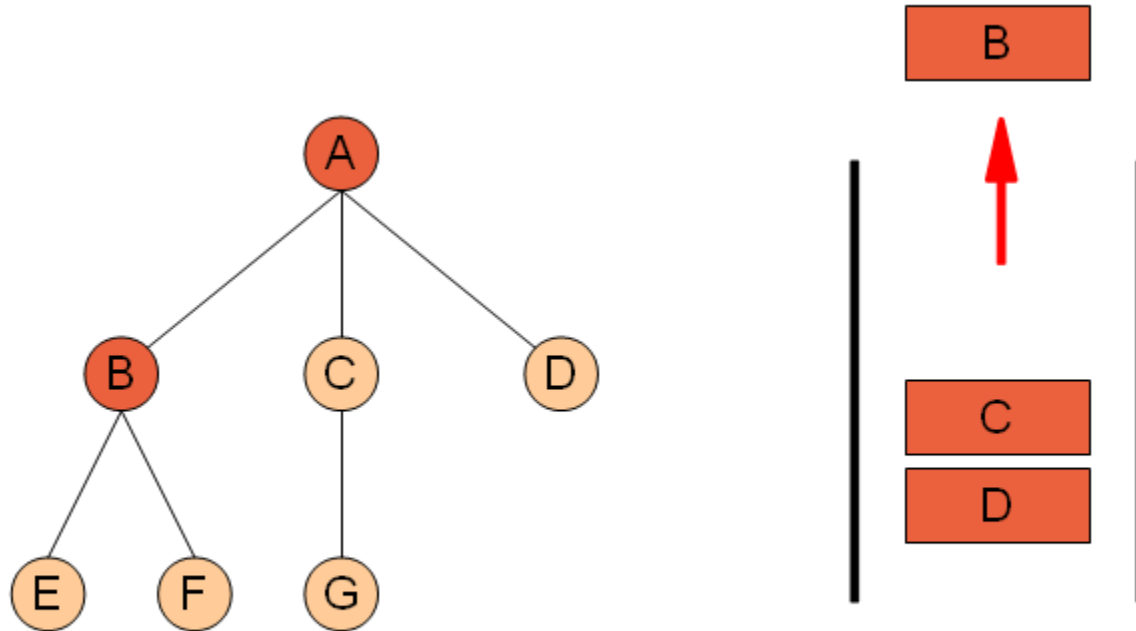
Shift horního prvku fronty



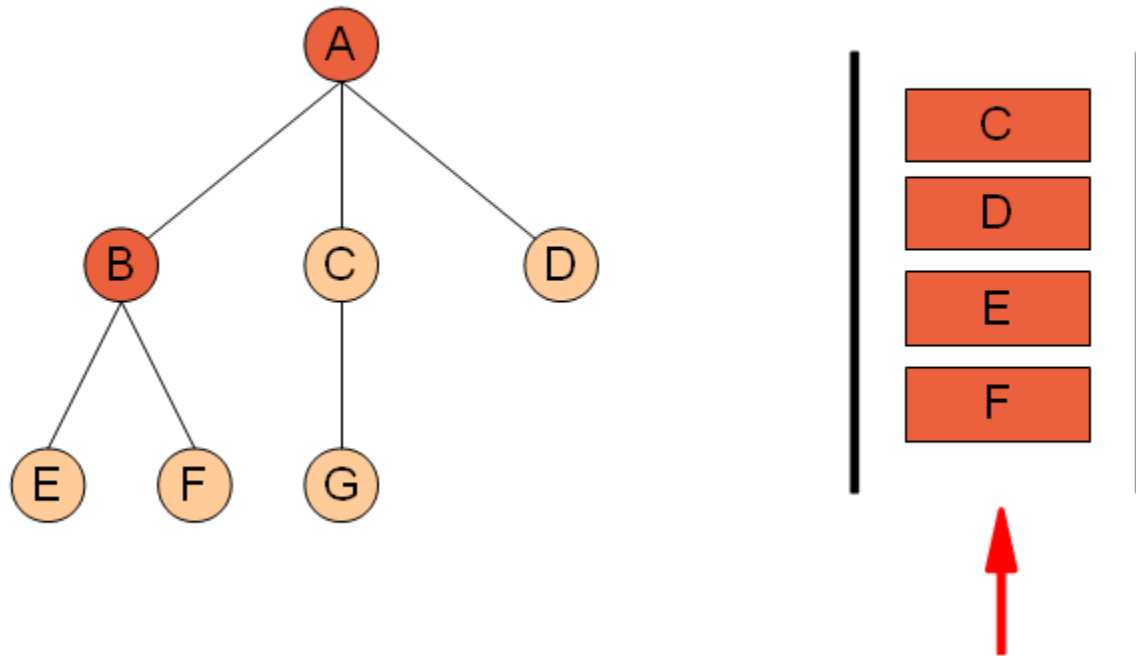
Push sousedů prvku A do fronty



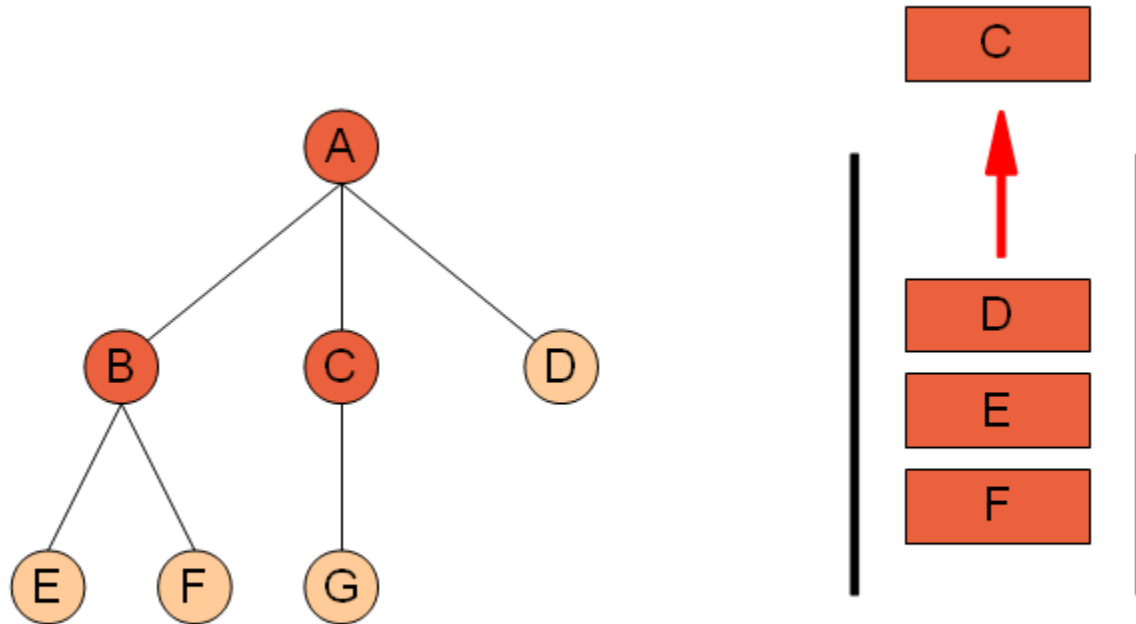
Shift horního prvku fronty



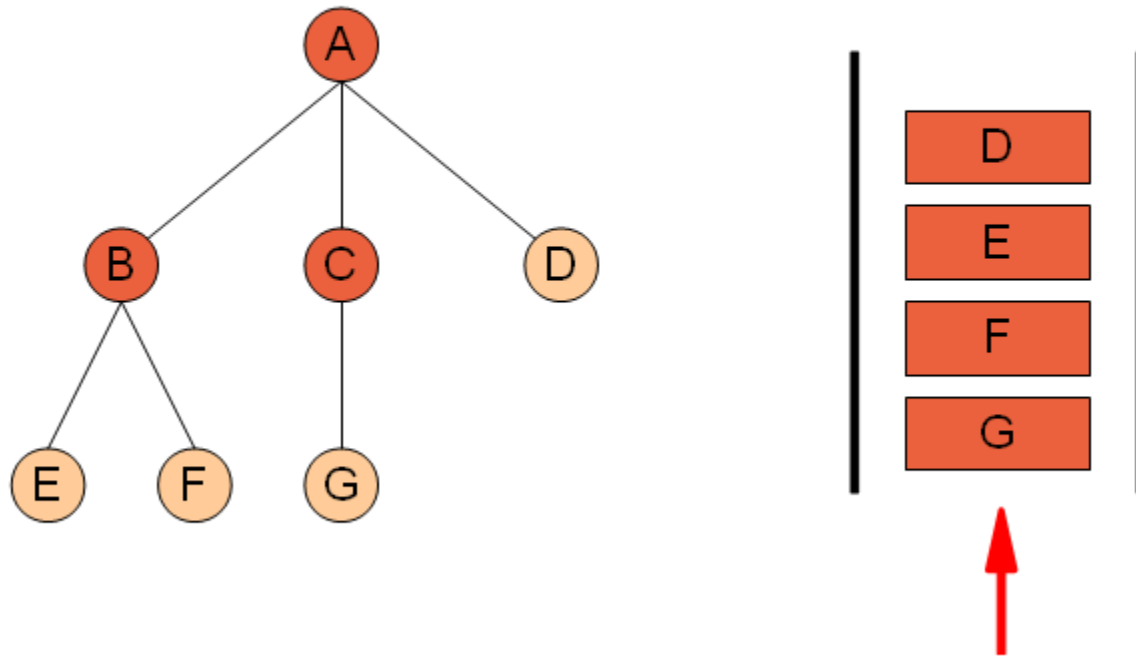
Push sousedů prvku B do fronty



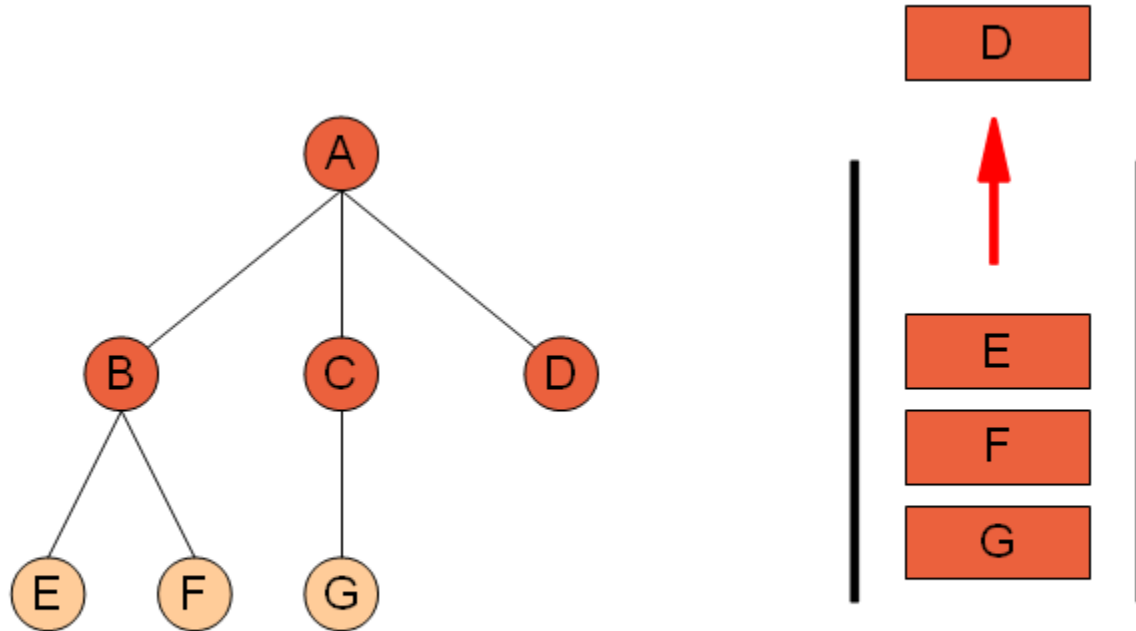
Shift horního prvku fronty



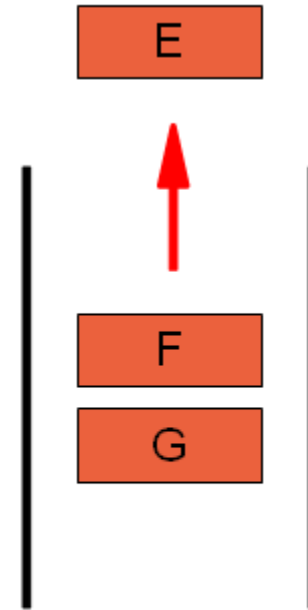
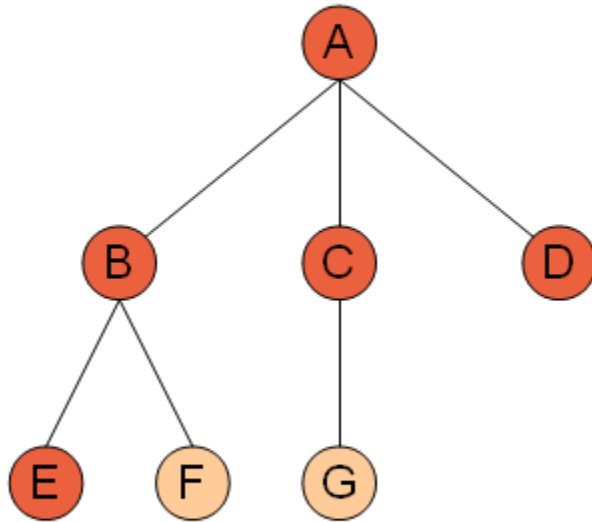
Push sousedů prvku C do fronty



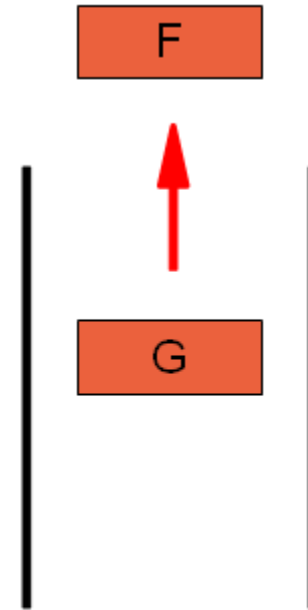
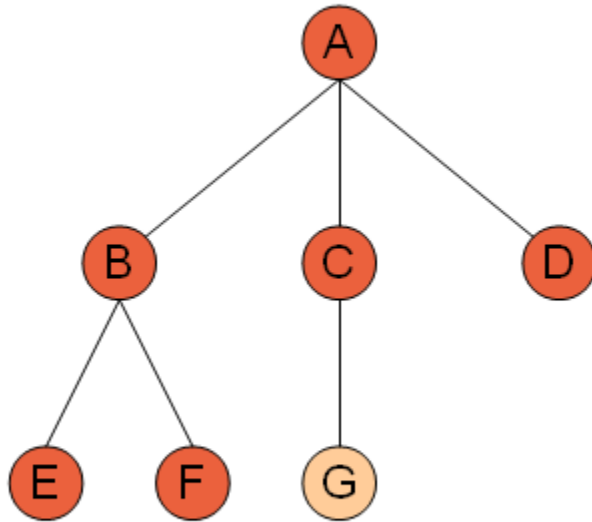
Shift horního prvku fronty



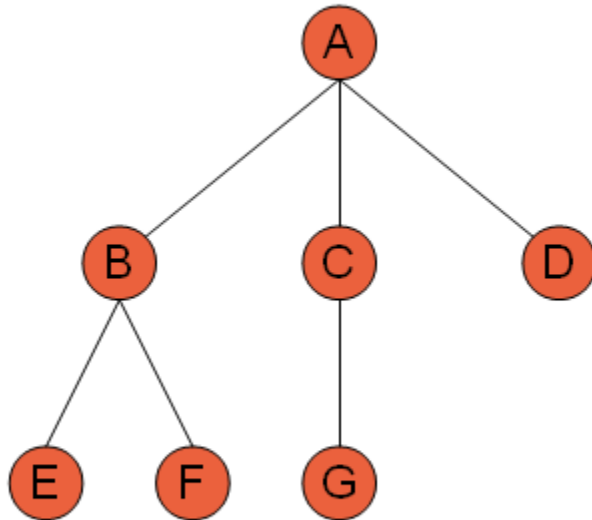
Shift horního prvku fronty



Shift horního prvku fronty



Shift horního prvku fronty



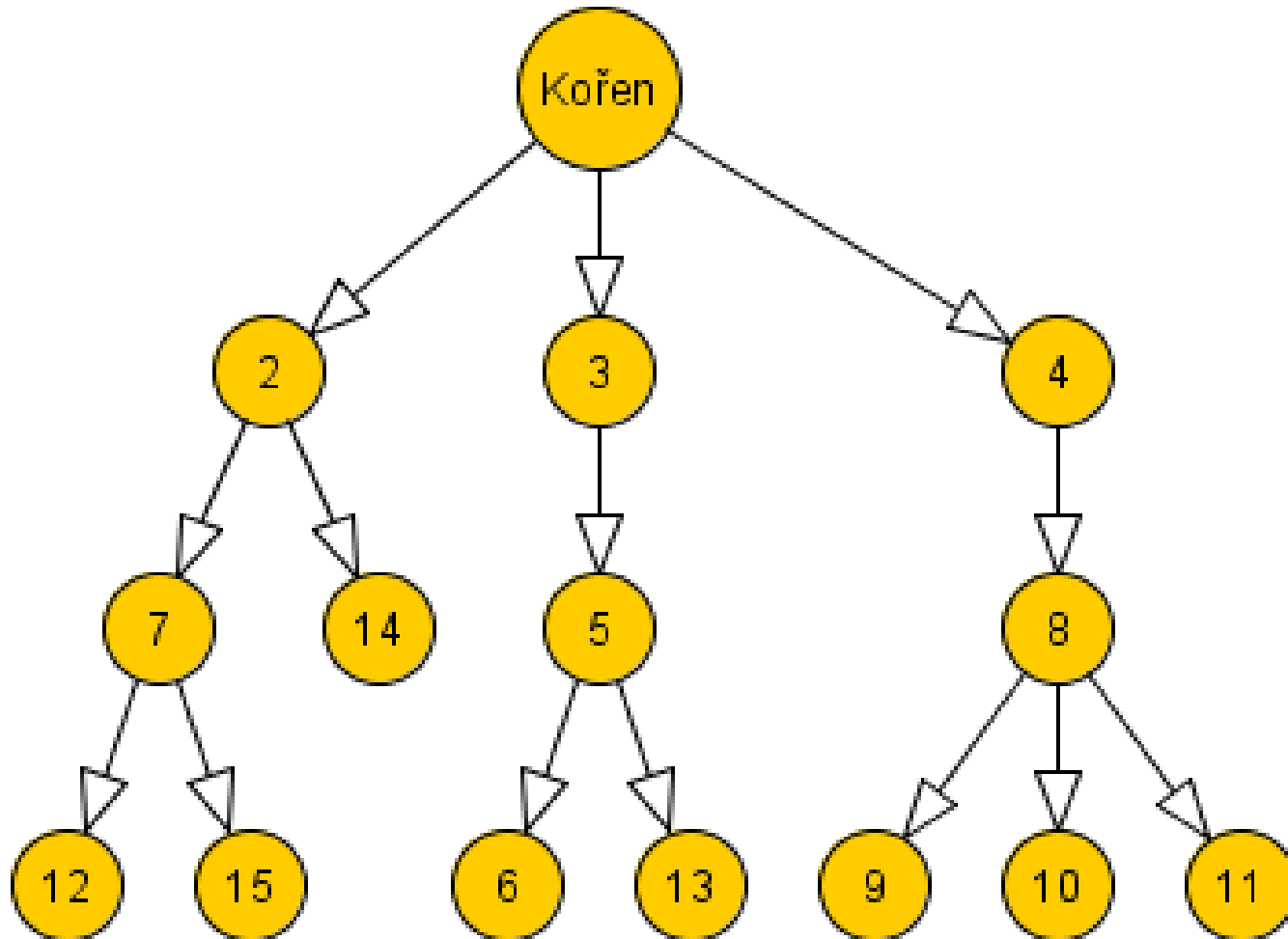
Na zamyšlenou

- Co se stane budou-li následníci uzlů propleteni mezi sebou?
- Jak implementovat frontu?
- Jak si hlídat navštívenost vrcholů?
- Kdy skončit prohledávání grafu?

Průchod grafu do hloubky

Projekt učitelé

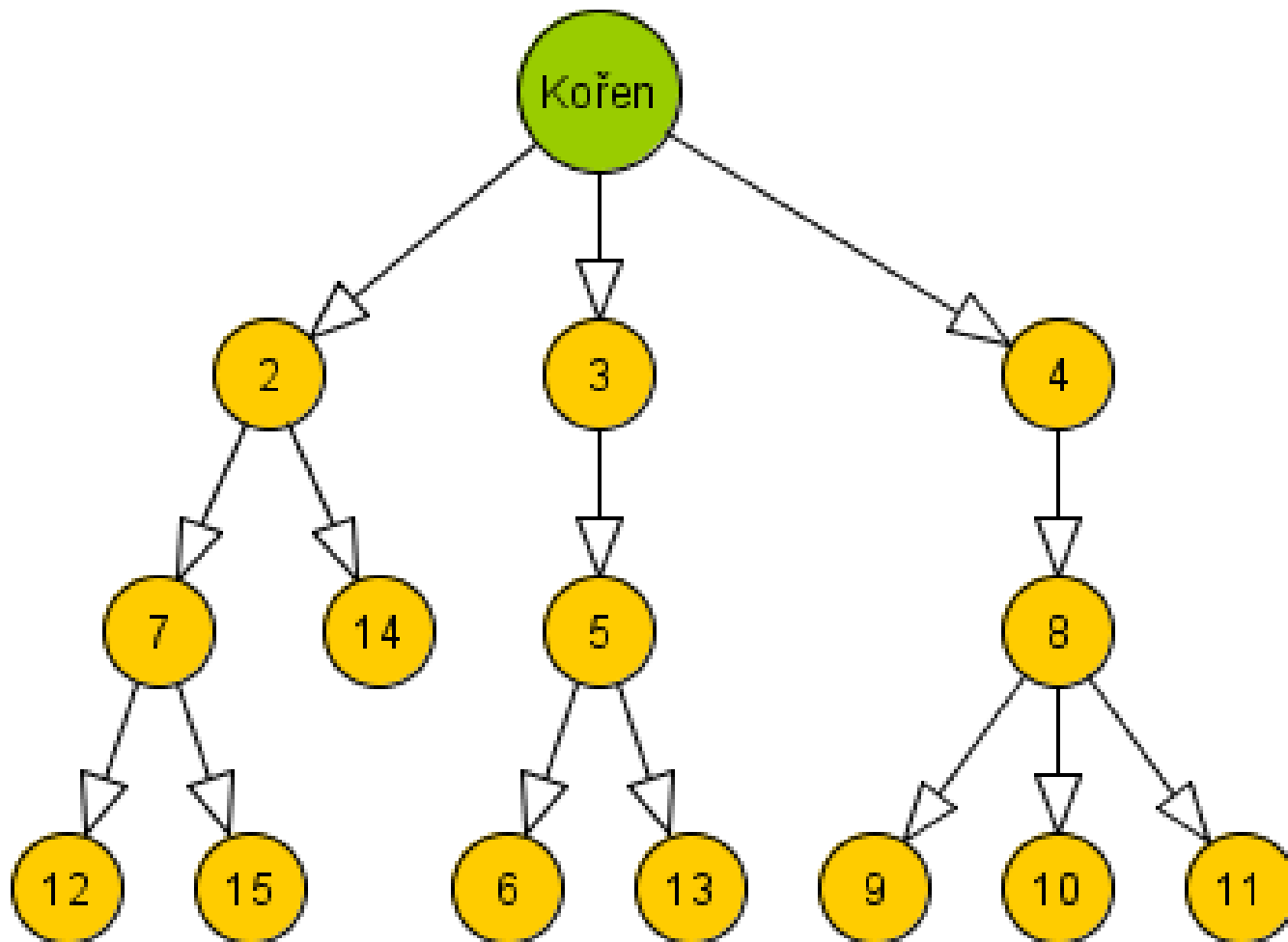
Průchod grafu do hloubky



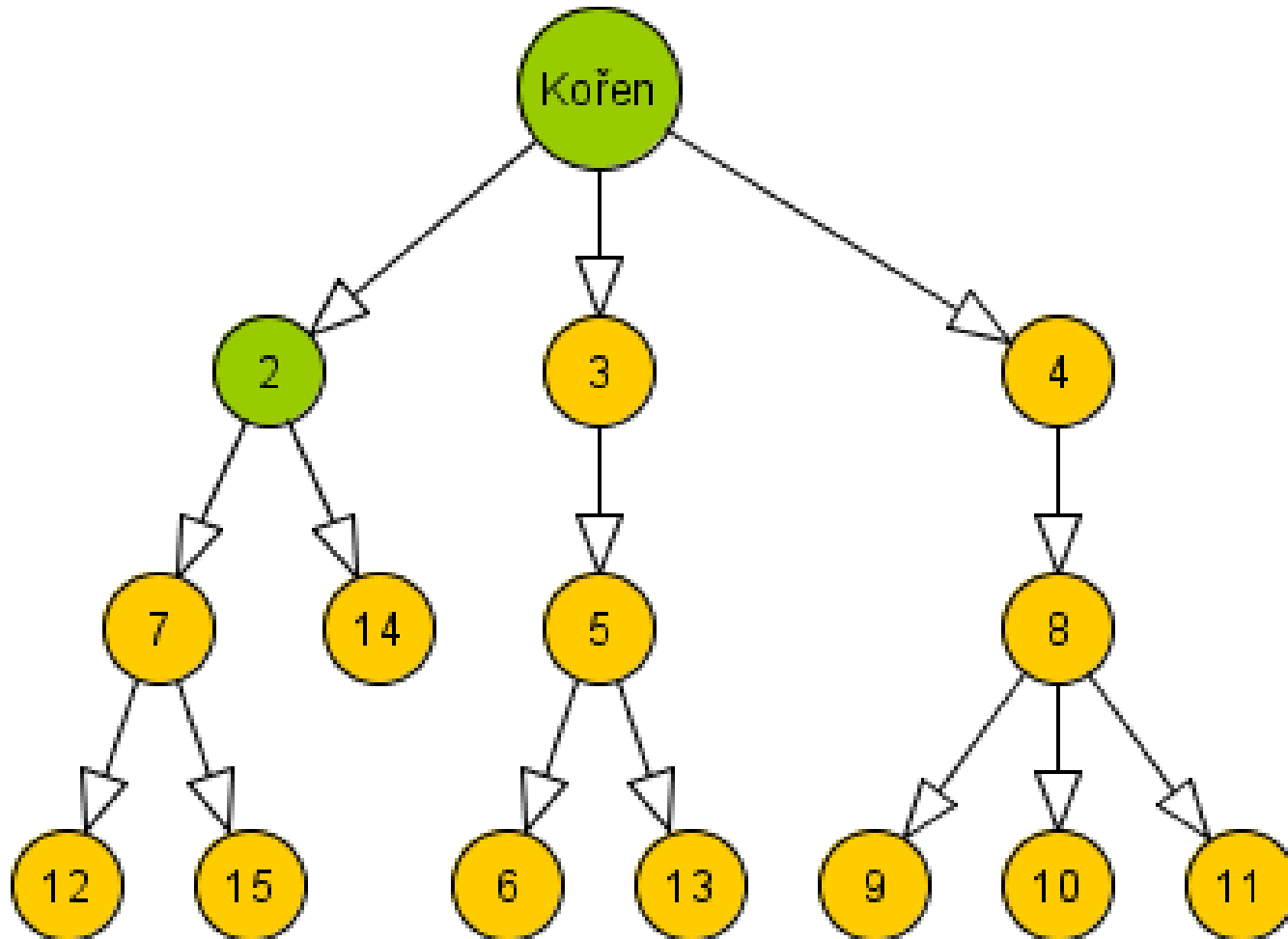
Průchod grafu do hloubky

- Způsob jak projít grafem z vybraného vrcholu, abychom postupně navštívili všechny jeho vrcholy
- Postupně se „zanořujeme“ až na dno nejlevějšího ramene grafu
- Při programování používáme zásobník

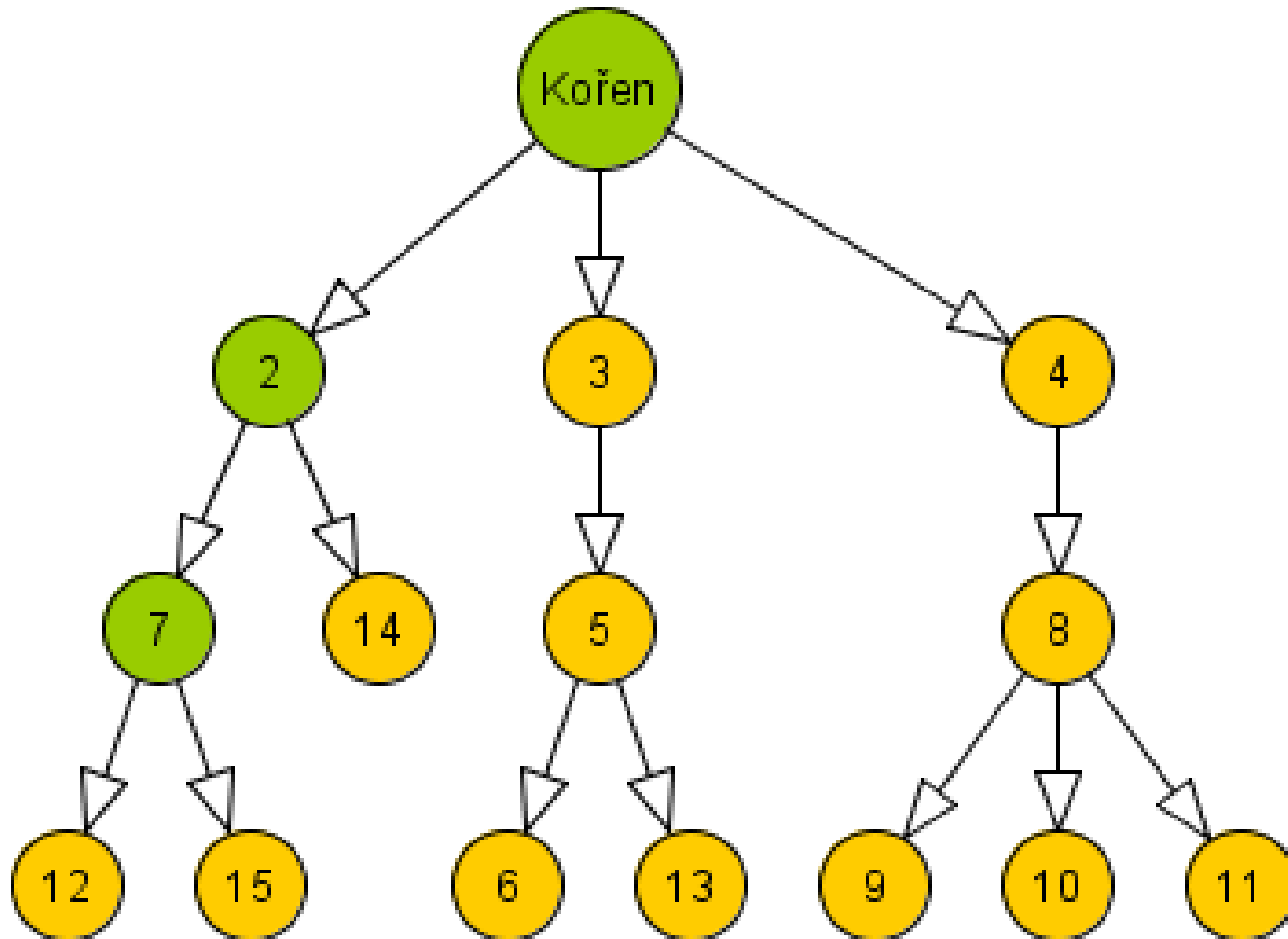
Průchod grafu do hloubky



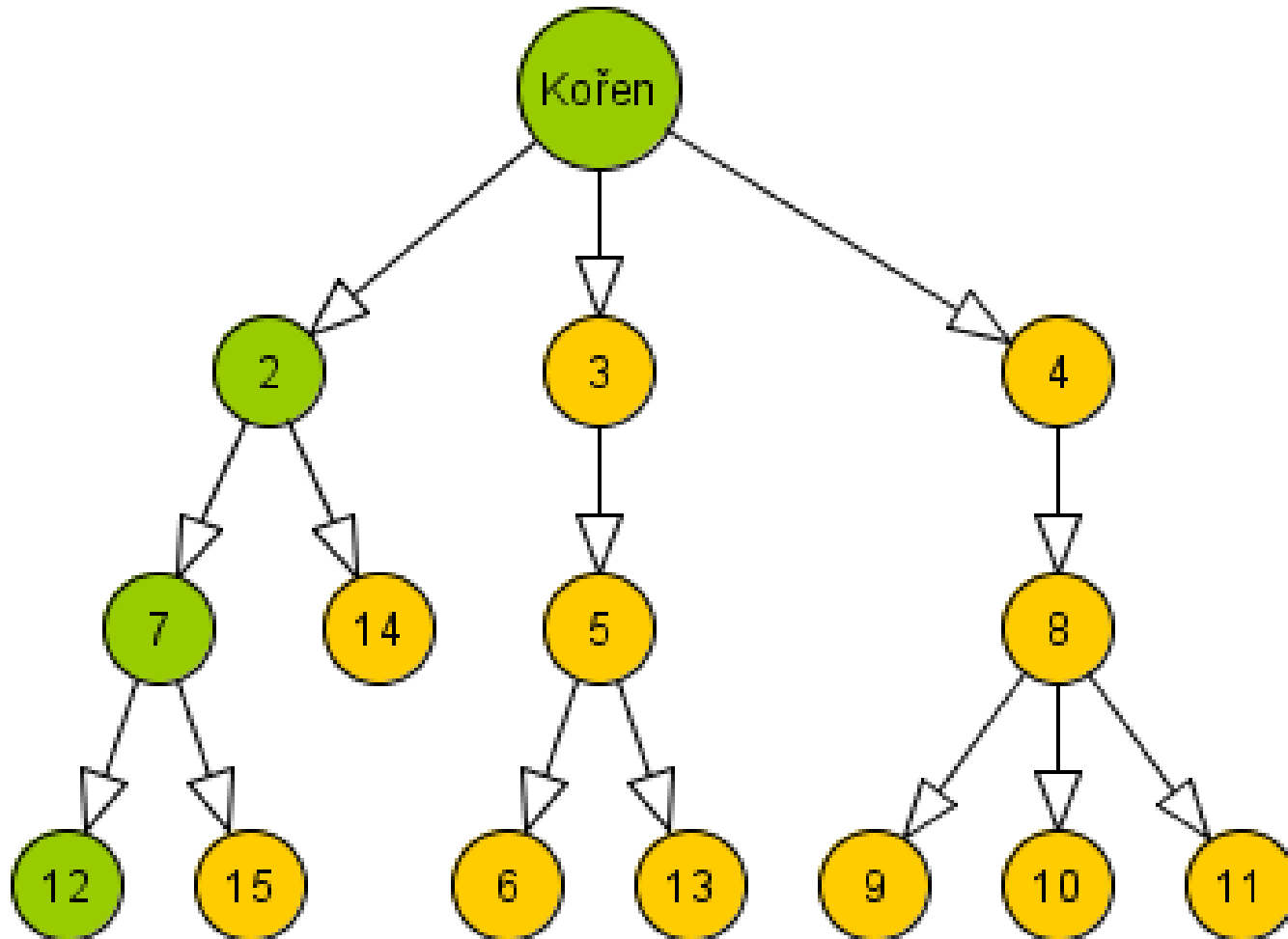
Průchod grafu do hloubky



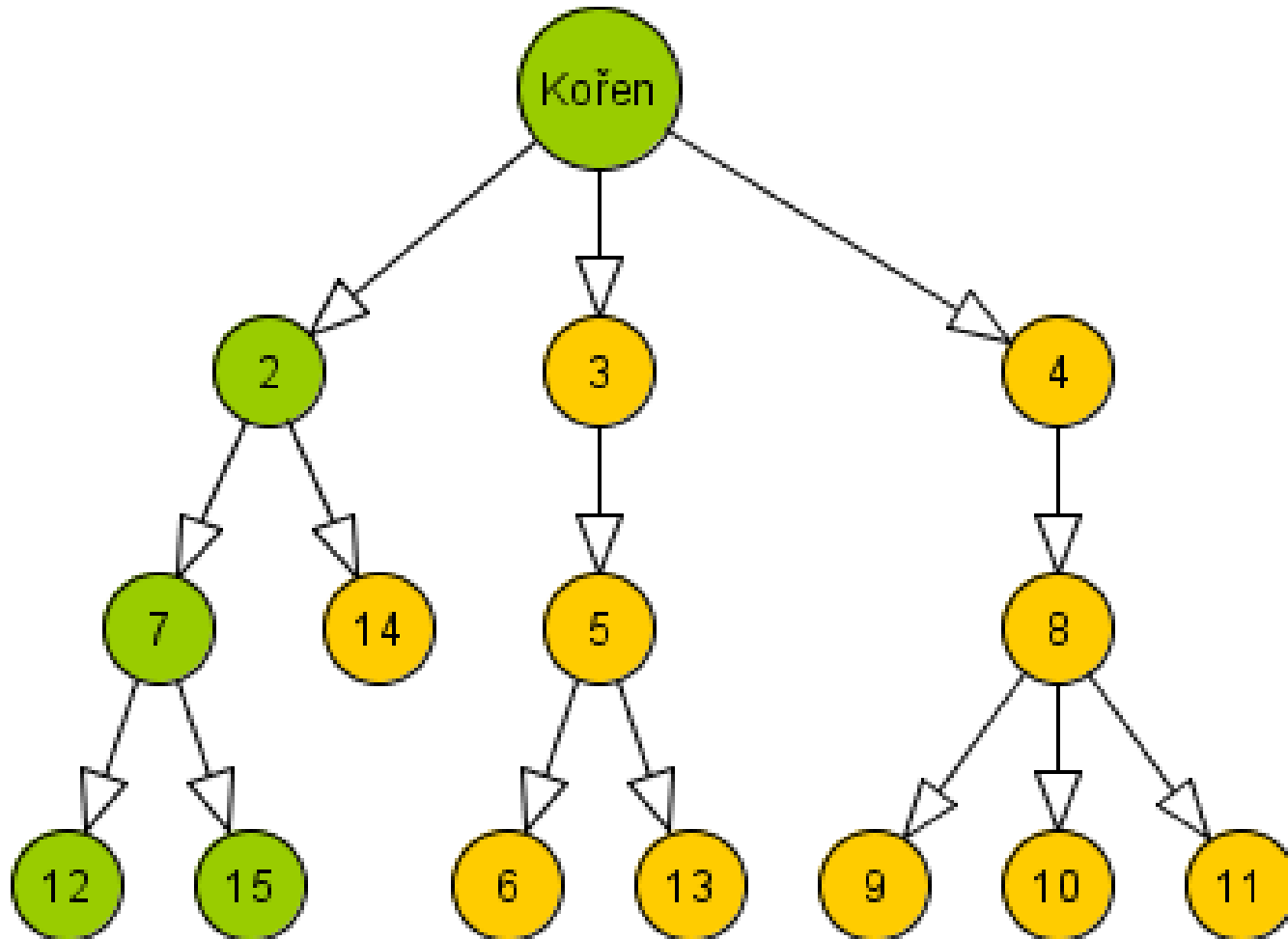
Průchod grafu do hloubky



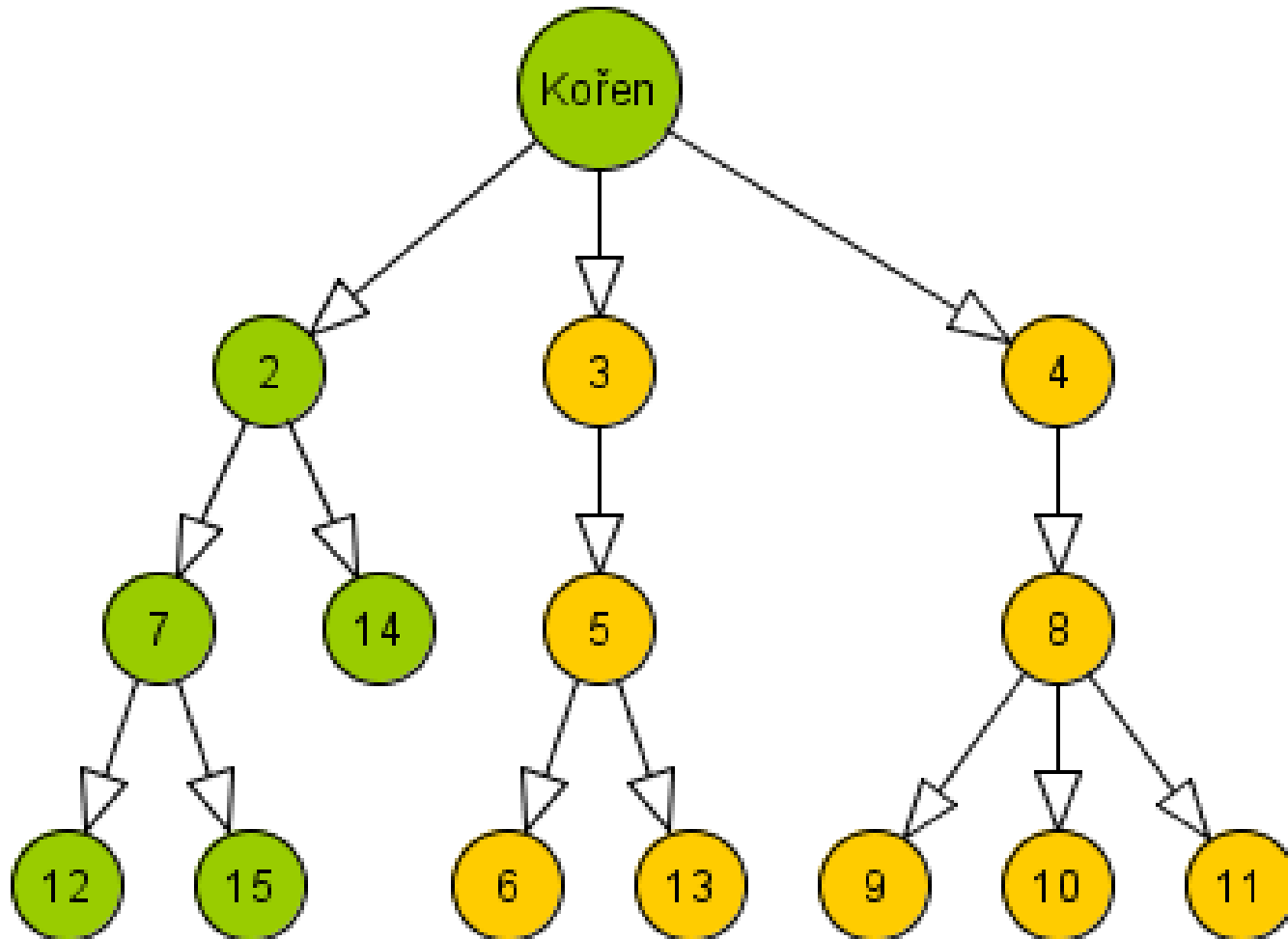
Průchod grafu do hloubky



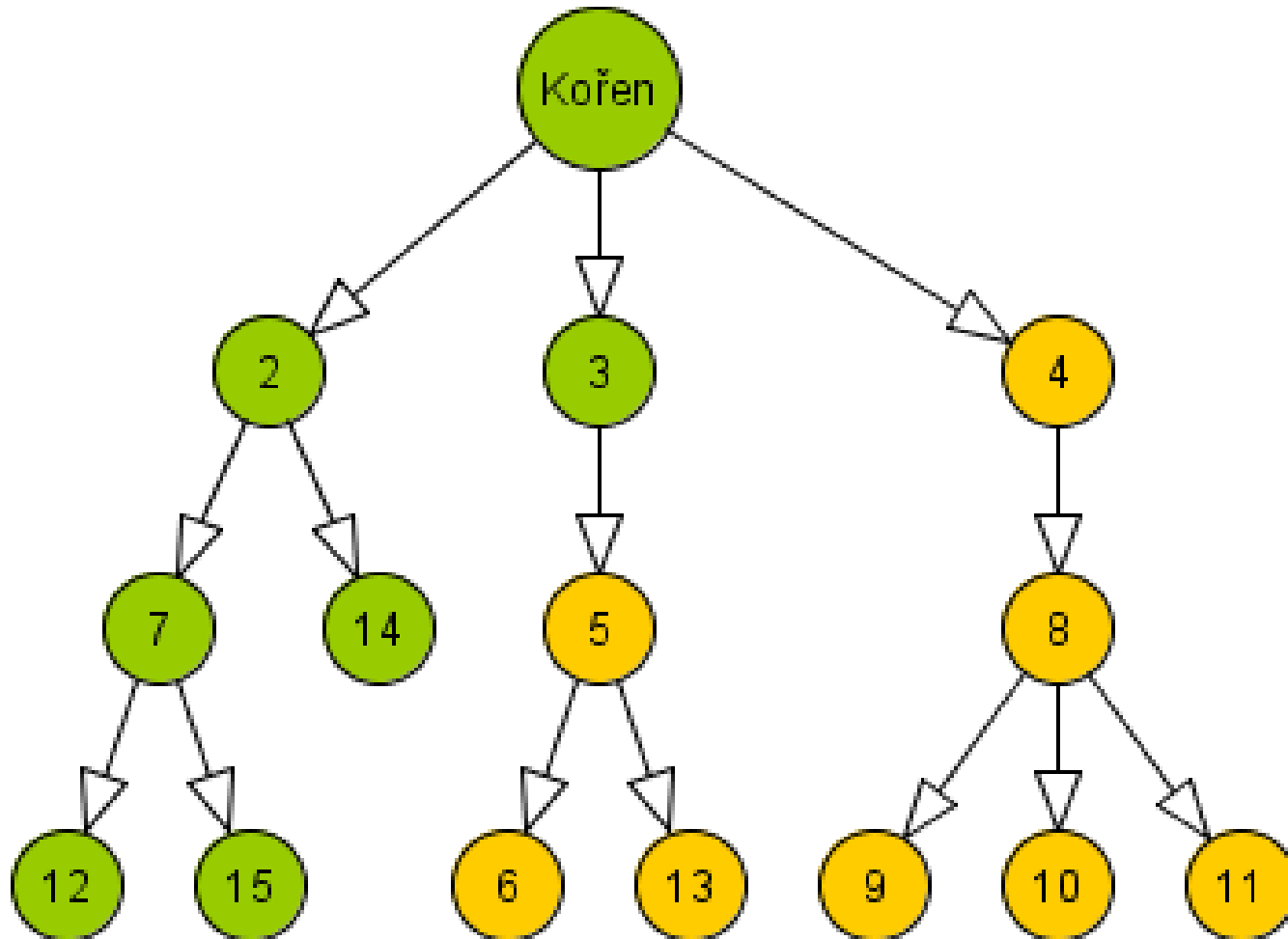
Průchod grafu do hloubky



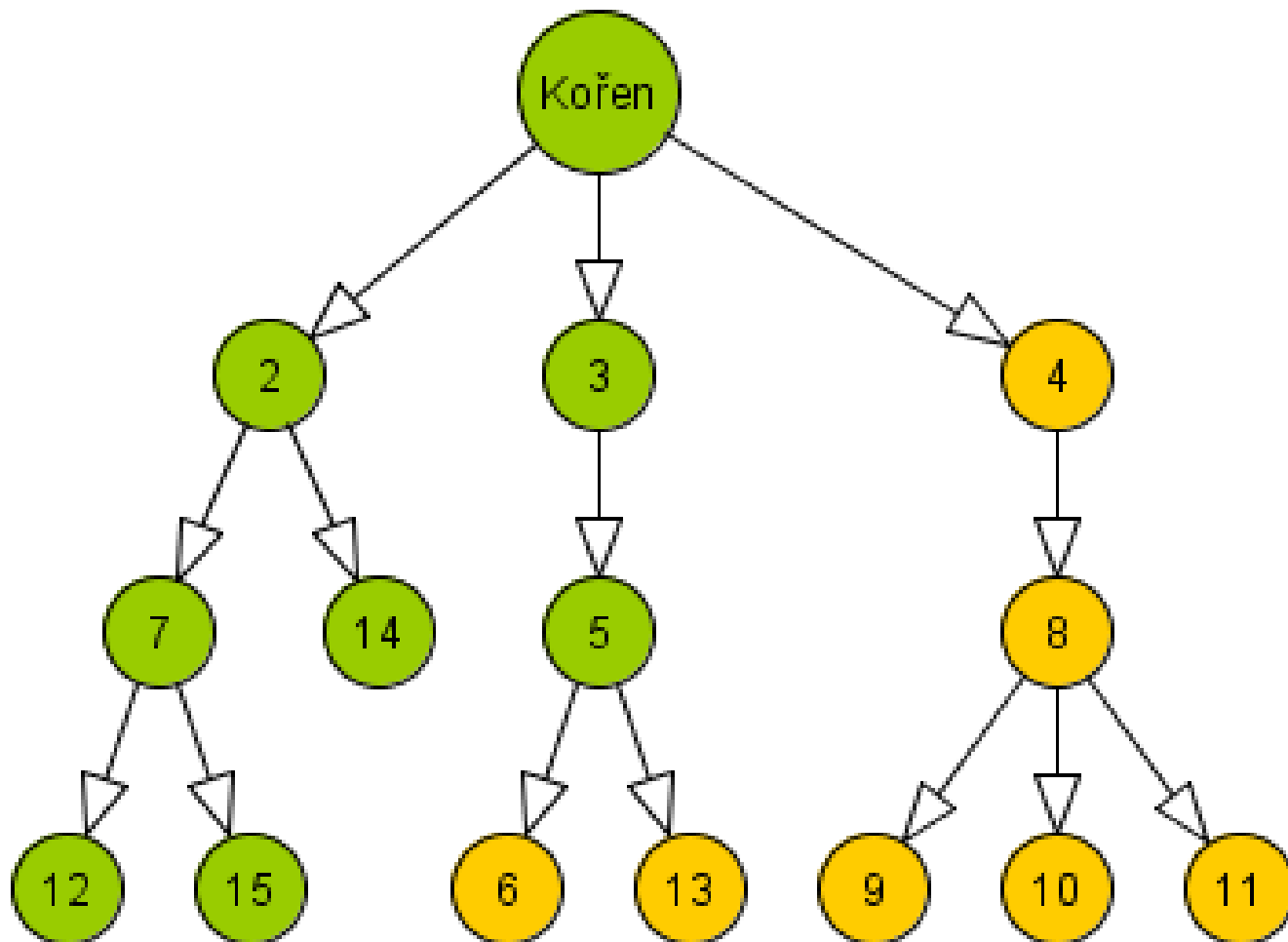
Průchod grafu do hloubky



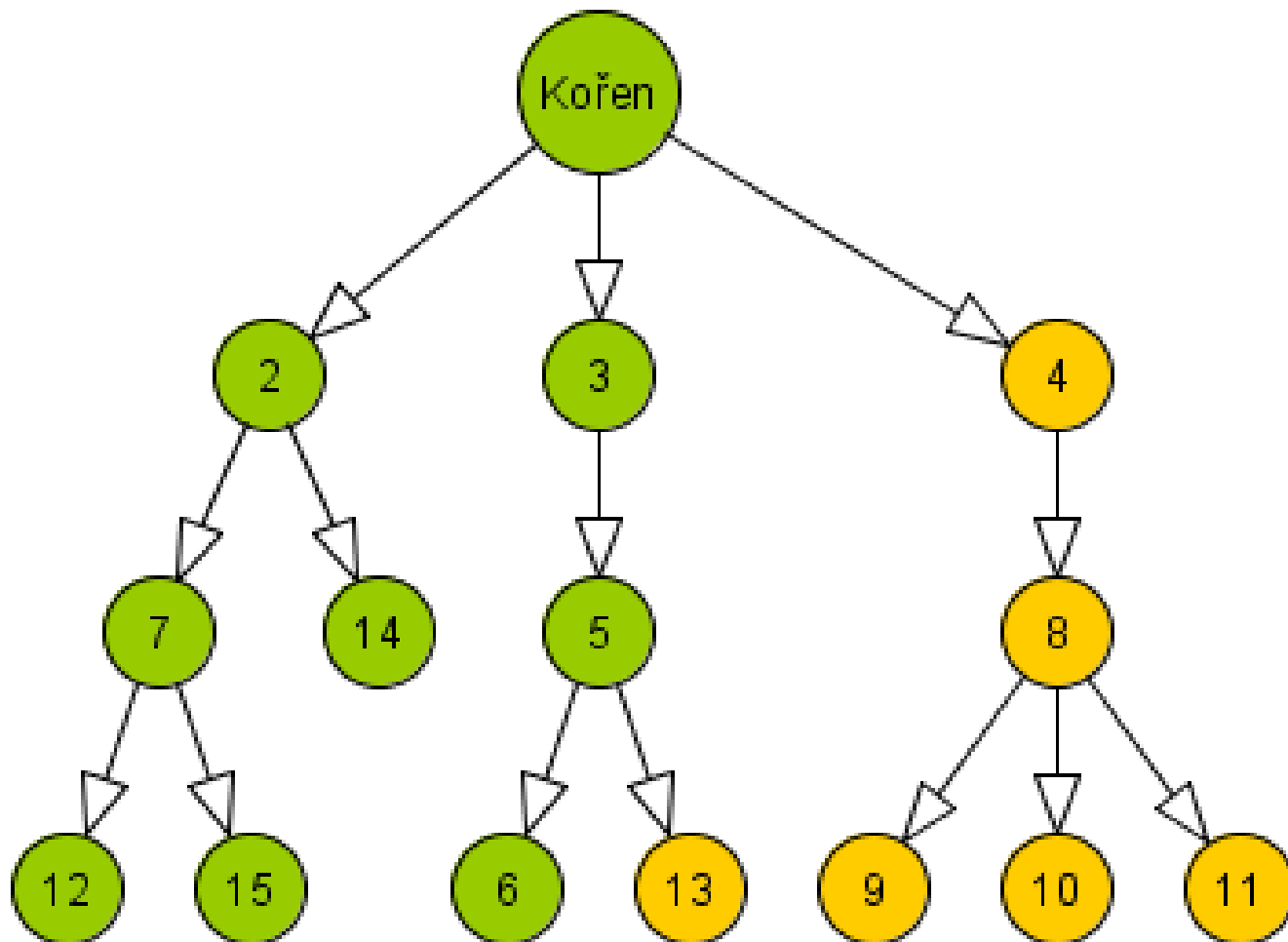
Průchod grafu do hloubky



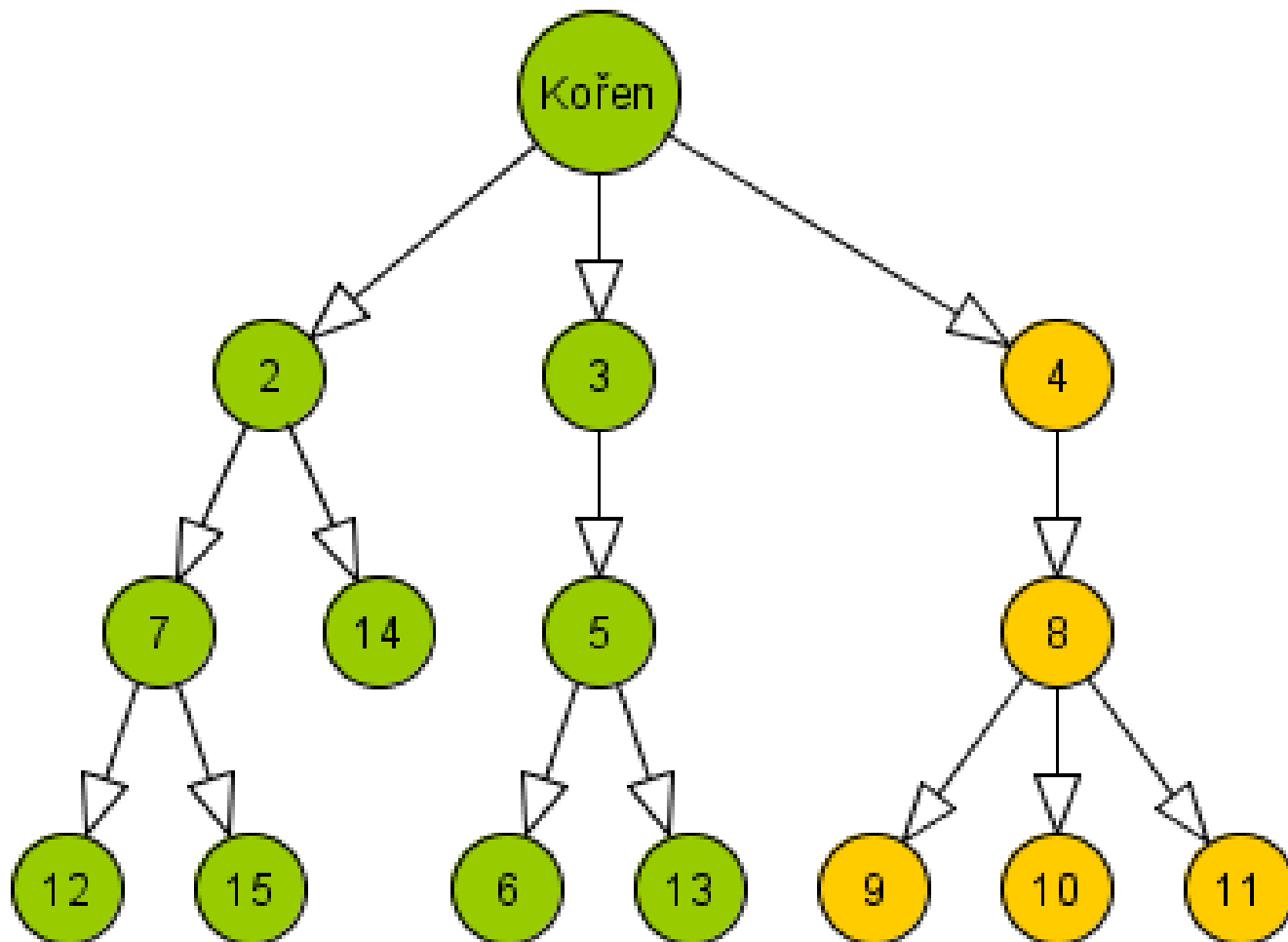
Průchod grafu do hloubky



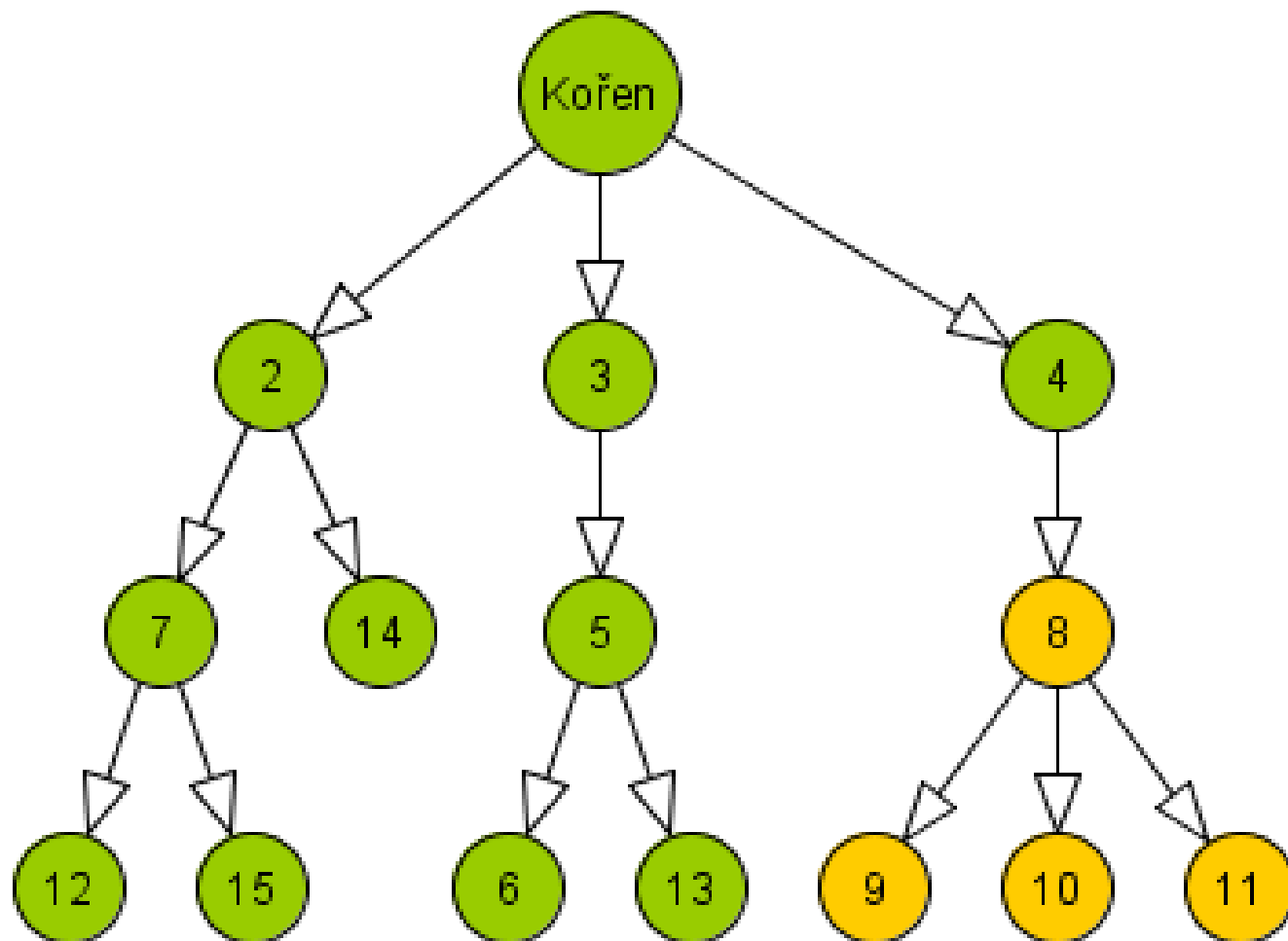
Průchod grafu do hloubky



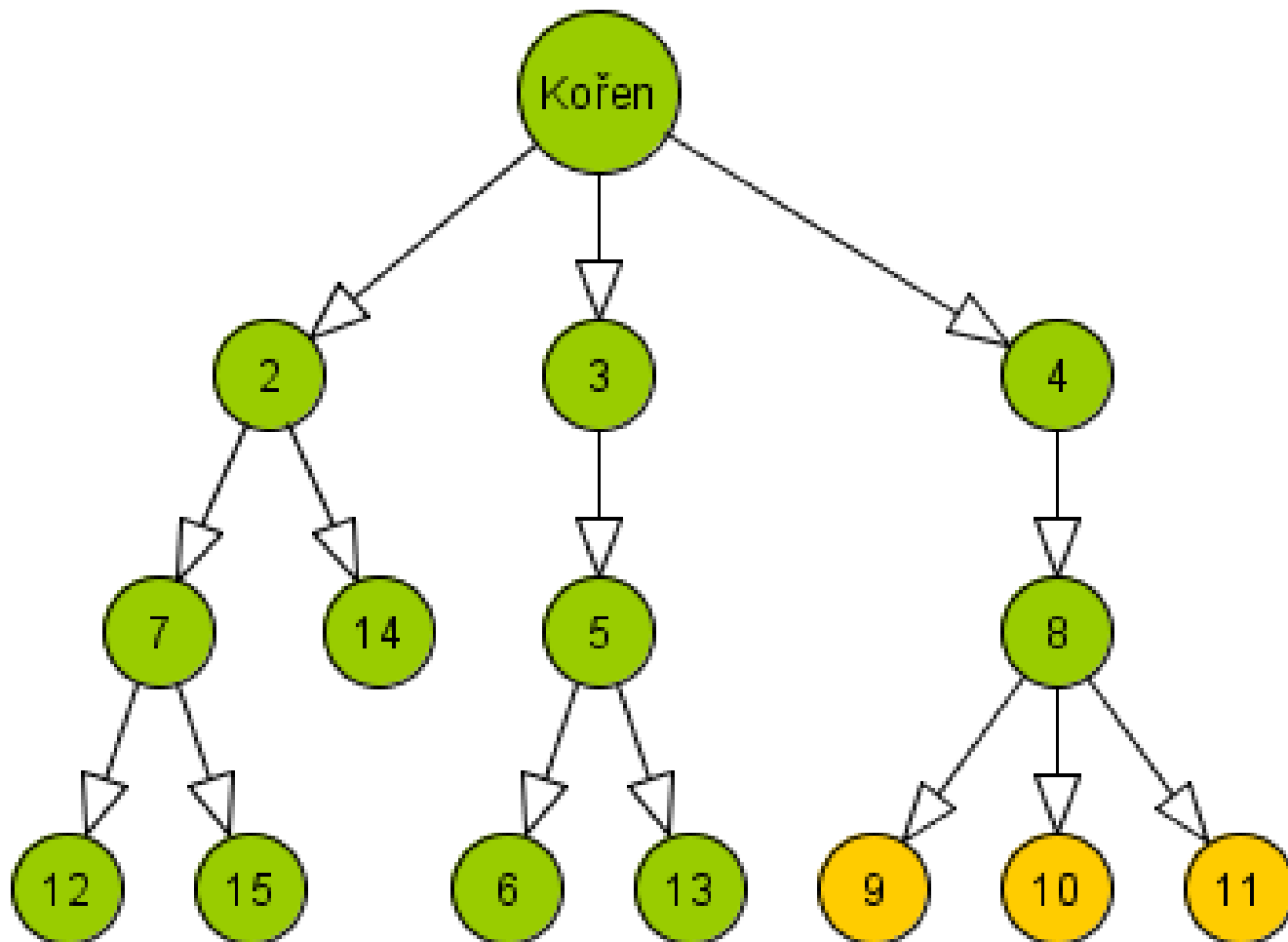
Průchod grafu do hloubky



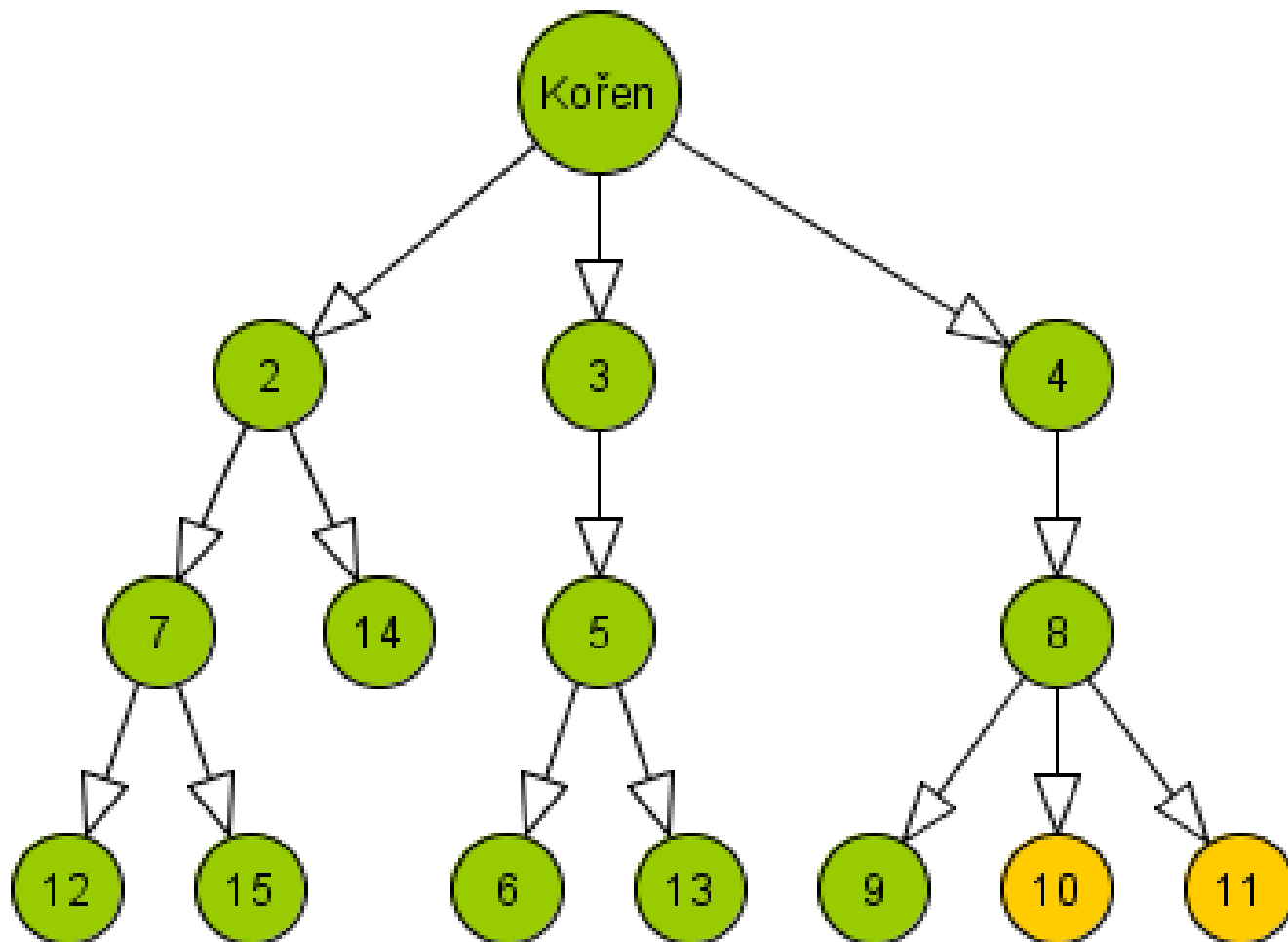
Průchod grafu do hloubky



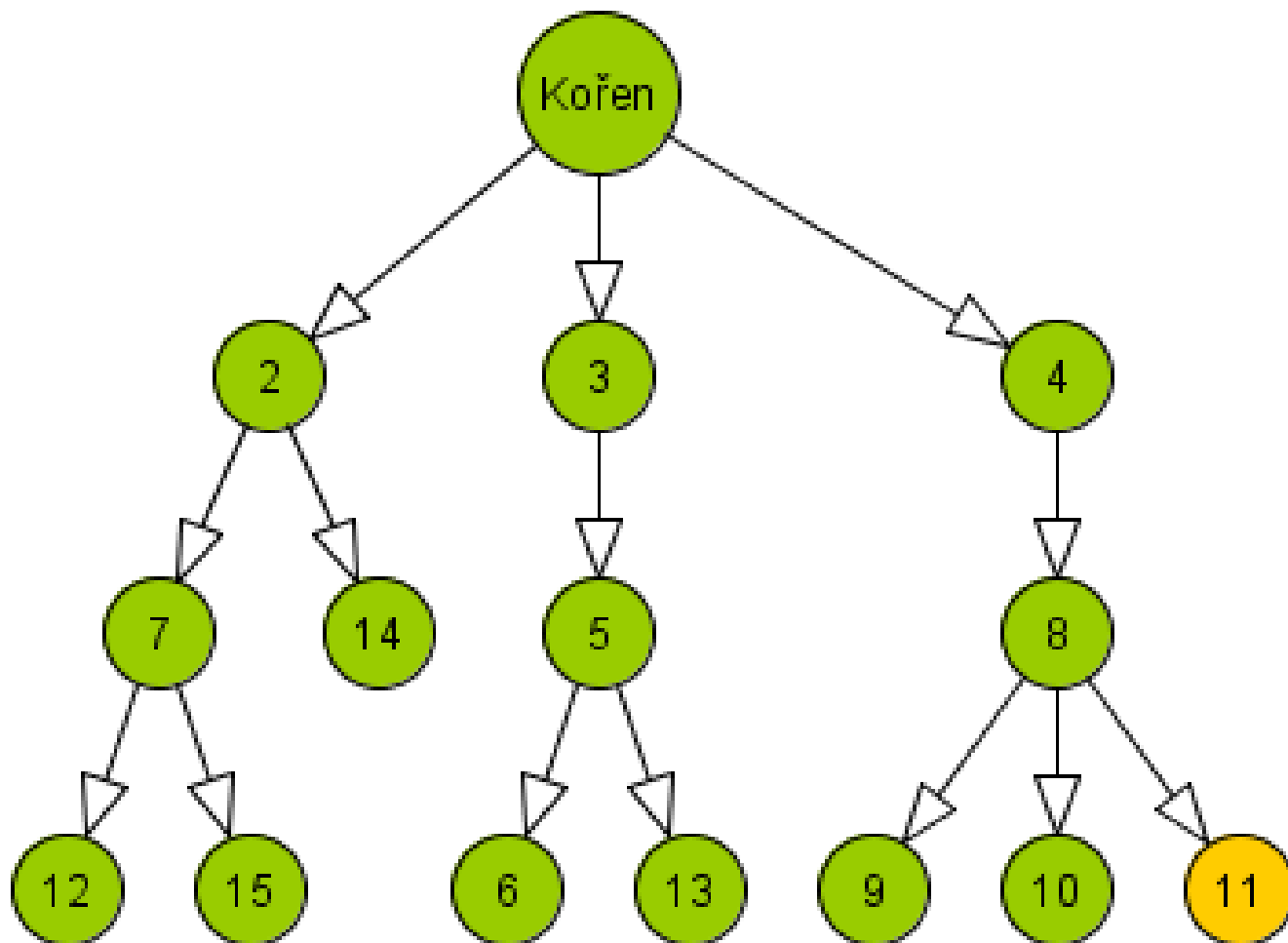
Průchod grafu do hloubky



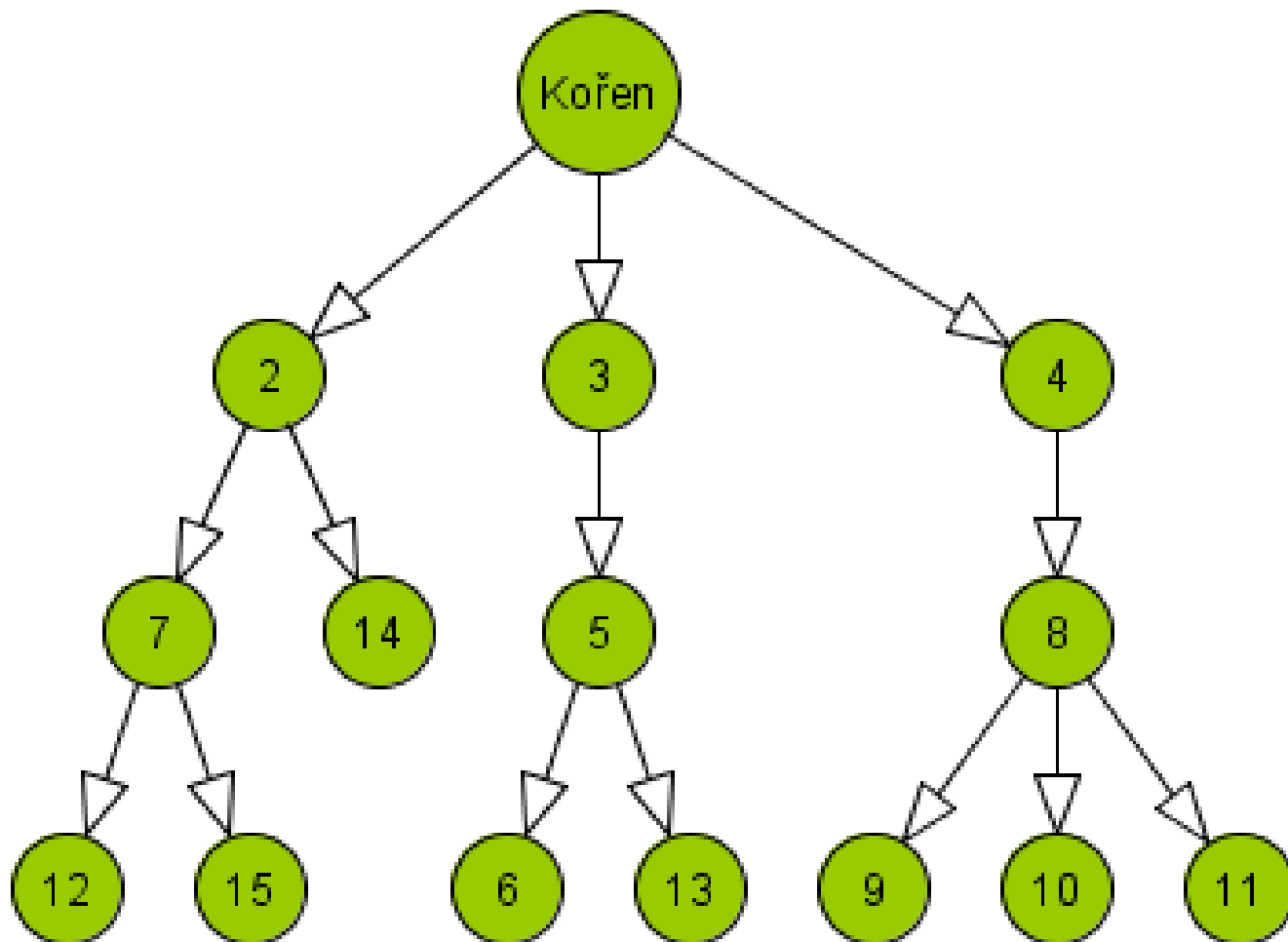
Průchod grafu do hloubky



Průchod grafu do hloubky



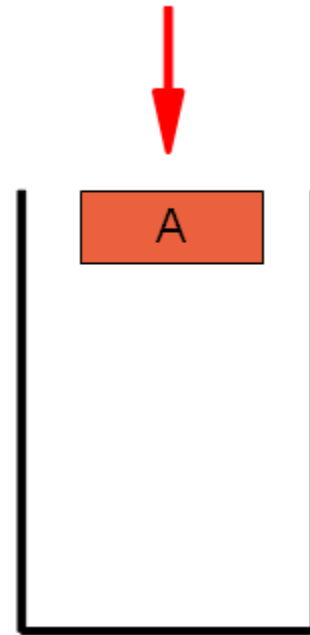
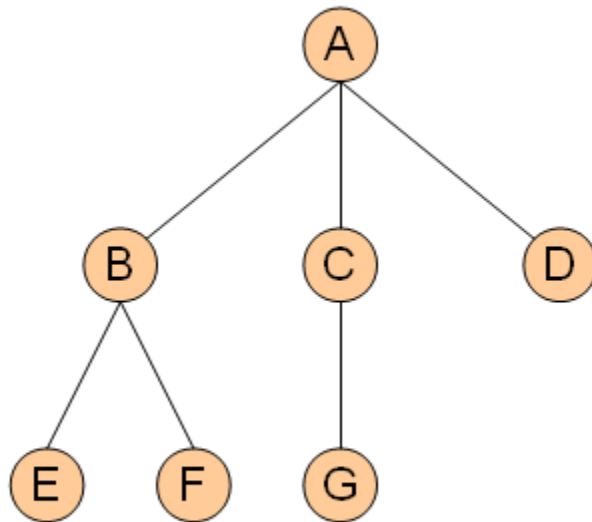
Průchod grafu do hloubky



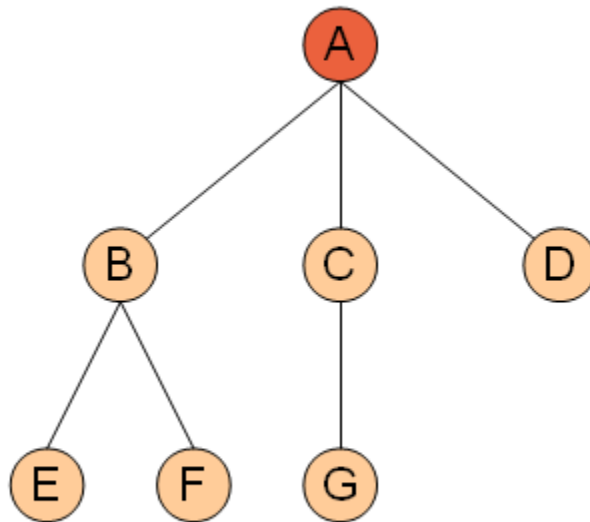
Zásobník

- Využívá se pro průchod do hloubky
- Má dvě základní funkce push a pop.
- Push – vloží prvek na vrchol zásobníku
- Pop – sejme prvek z vrcholu zásobníku

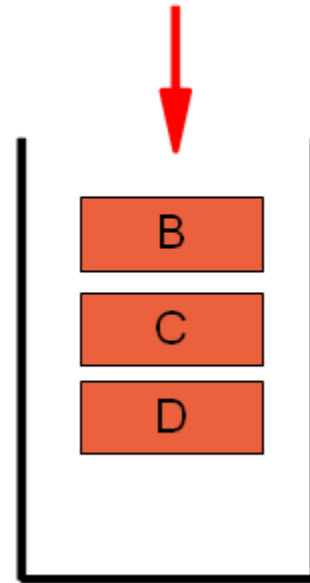
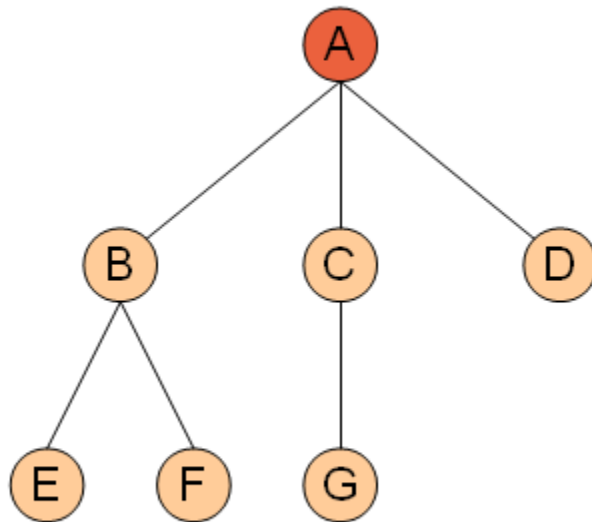
Push iniciálního prvku A na zásobník



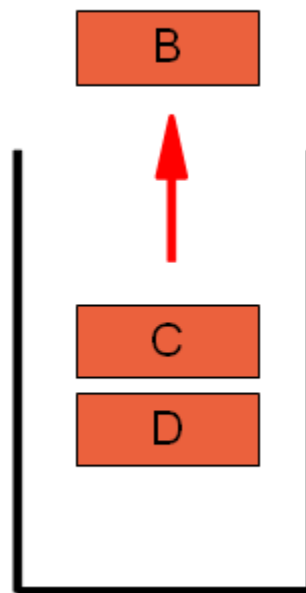
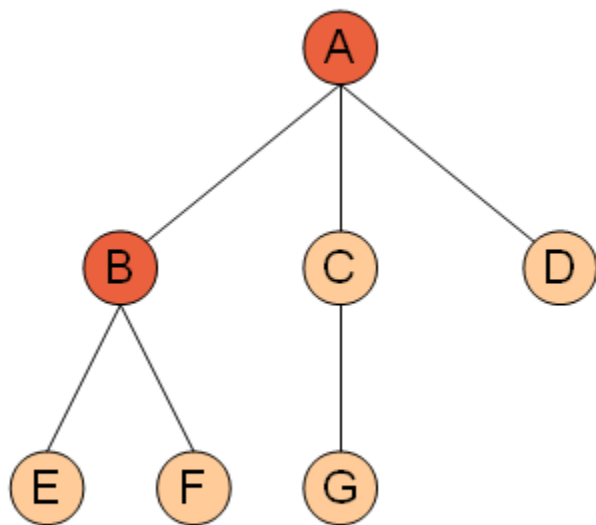
Pop horního prvku zásobníku



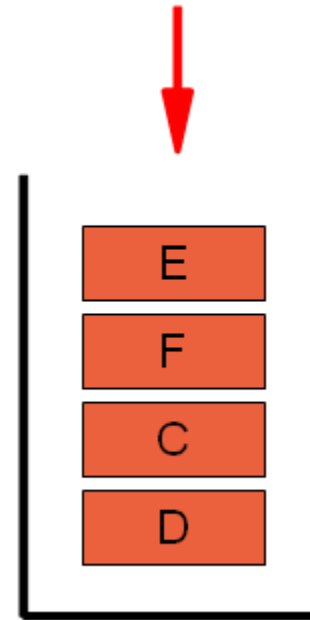
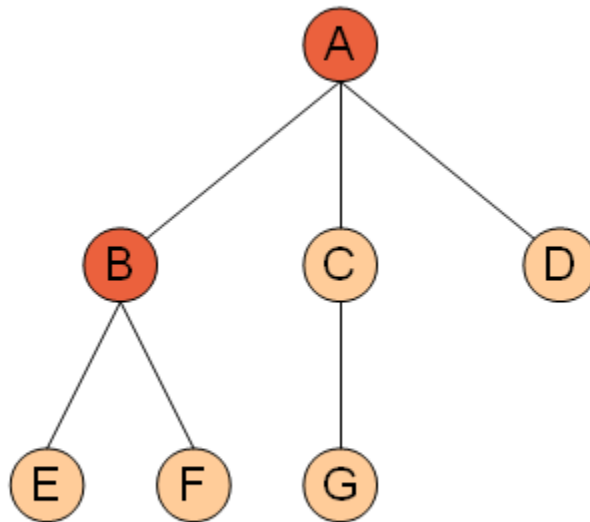
Push sousedů prvku A na zásobník



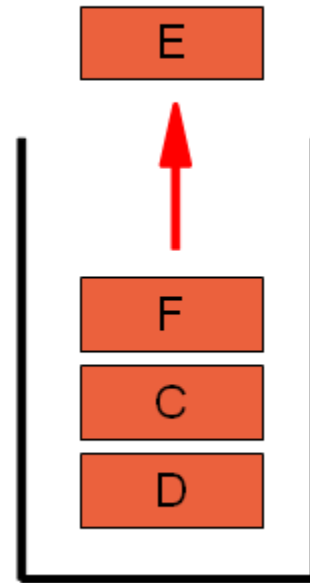
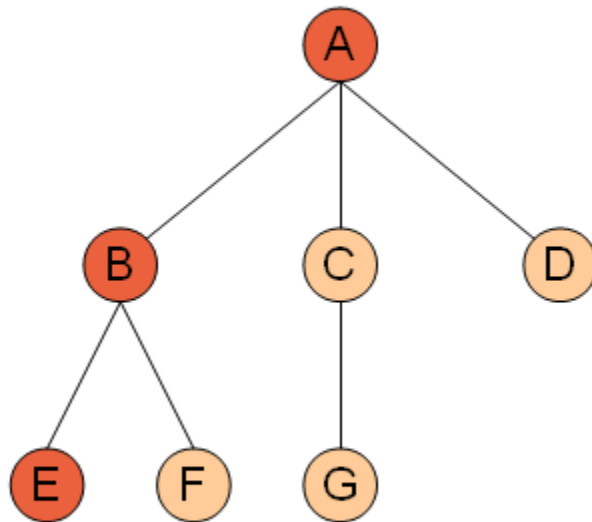
Pop horního prvku zásobníku



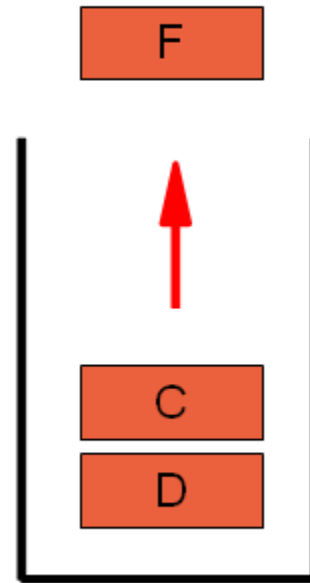
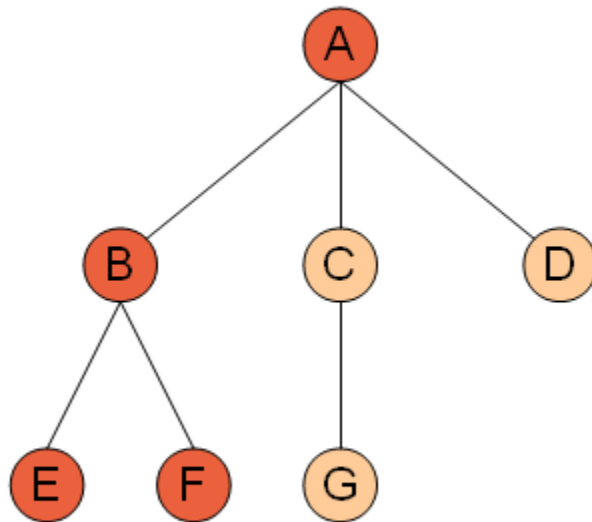
Push sousedů prvku B na zásobník



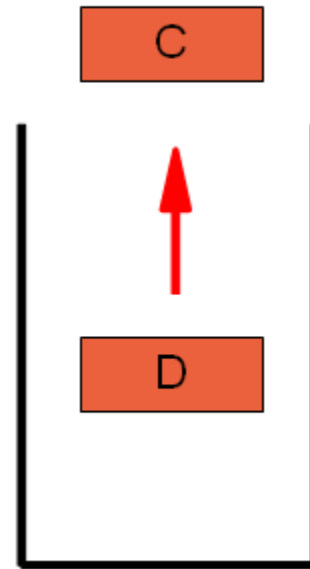
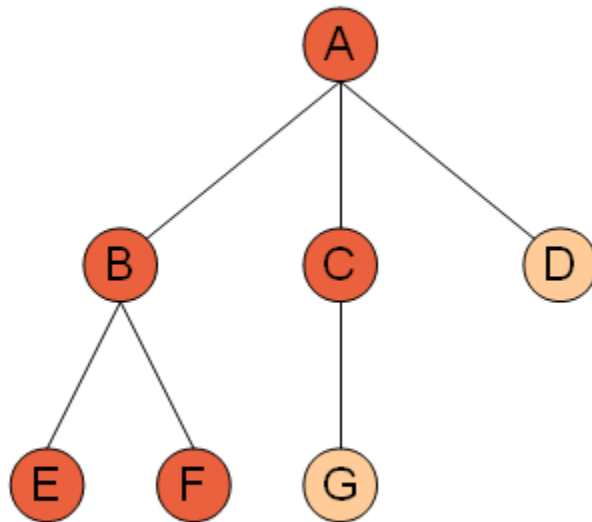
Pop horního prvku zásobníku



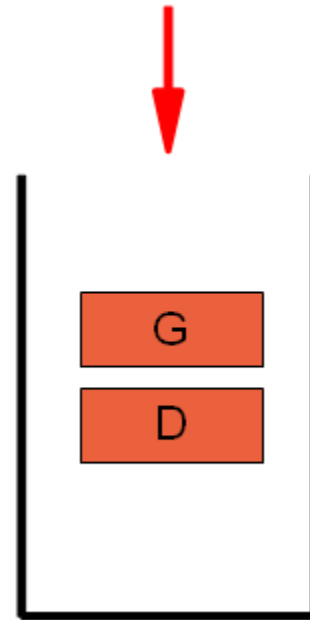
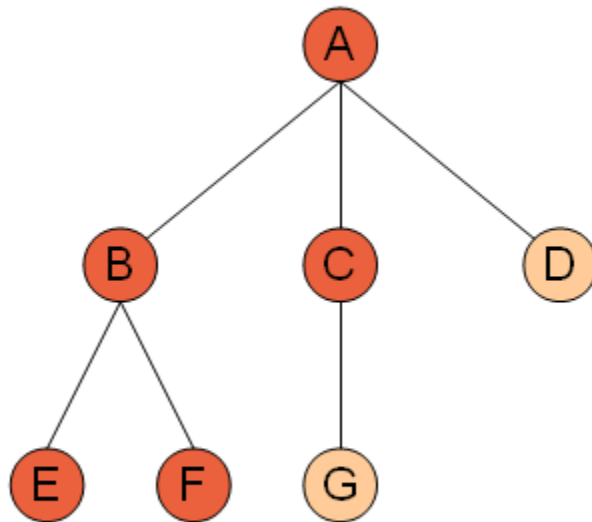
Pop horního prvku zásobníku



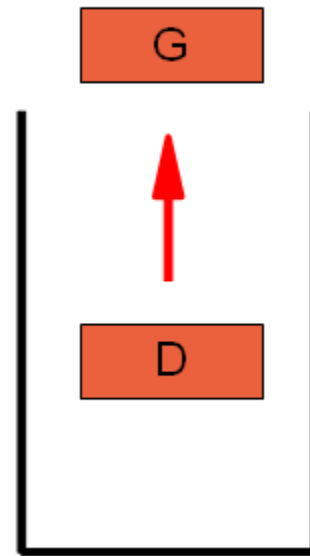
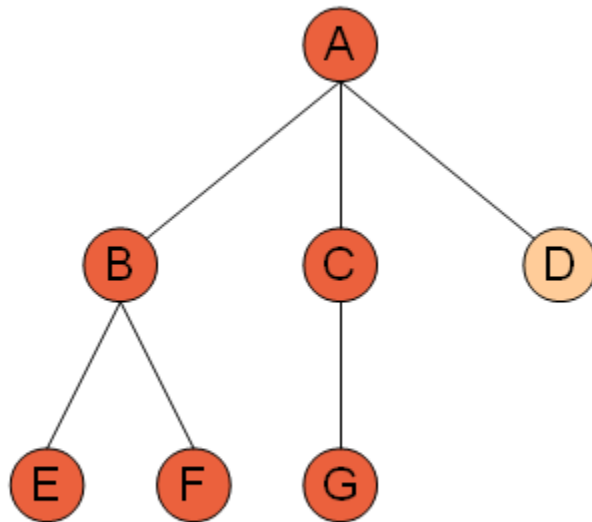
Pop horního prvku zásobníku



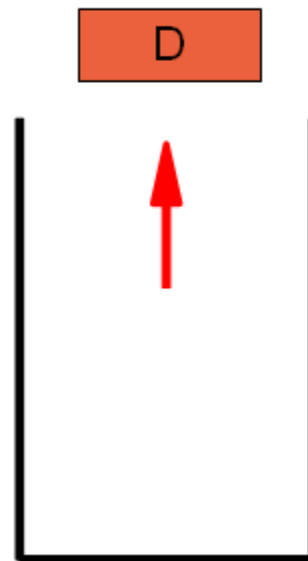
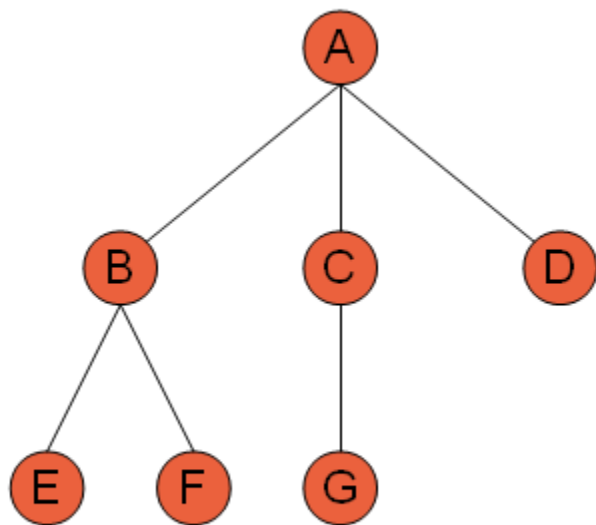
Push sousedů prvku C na zásobník



Pop horního prvku zásobníku



Pop horního prvku zásobníku



Na zamyšlenou

- Co se stane budou-li následníci uzlů propleteni mezi sebou?
- Pomocí jakých struktur implementovat zásobník?