

## AGAT Extended Example

Process	Burst time	Arrival time	Priority	Quantum
P1	17	0	4	4
P2	6	3	9	3
P3	10	4	3	5
P4	4	29	8	2

At First we can calculate  $V1$  and  $\text{Ceil}(\text{Arrival Time} / V1)$  for each process since it doesn't change over the course of execution

$\text{Max}(\text{Arrival Time}) = 29 > 10$  Then  $V1 = 29/10 = 2.9$

New Values Are

Process	Burst time	Arrival time	Priority	Quantum	$\text{Ceil}(\text{Arrival Time} / V1)$
P1	17	0	4	4	0
P2	6	3	9	3	2
P3	10	4	3	5	2
P4	4	29	8	2	10

### At Time 0:

P1 starts, Calculate AGAT Factors

$\text{Max}(\text{Remaining Burst Time}) = 17 > 10$  Then  $V2 = 1.7$

AGATs = { 16, 7, 15, 15 }

Quantums = { 4, 3, 5, 2 }

40% of 4 = 1.6, Rounded to nearest int is 2

### At Time 2:

P1 can be interrupted but since no other processes have arrived nothing happens

### At Time 3:

P3 Arrives and has better AGAT factor than P1. P1 is removed and added to ready queue. Recalculate AGAT Factors.

$\text{Max}(\text{Remaining Burst Time}) = 14 > 10$  Then  $V2 = 1.4$

AGATs = { 16, 8, 17, 15 }

Quantums = { 4 + 1, 3, 5, 2 }

40% of 3 = 1.2, Rounded to nearest int is 1

### At Time 4:

P2 can be interrupted and P3 arrived but since P1 & P3 don't have a better AGAT factor, P2 stays running. No need to recalculate AGAT factors. P3 is added to the ready queue

**At Time 6:**

P2 finished its quantum. Next process in ready queue is picked to execute (P1) and P2 is added to the back of the ready queue. Recalculate AGAT Factors.

$\text{Max(Remaining Burst Time)} = 14 > 10$  Then  $V2 = 1.4$

$\text{AGATs} = \{ 16, 6, 17, 15 \}$

$\text{Quantums} = \{ 5, 3 + 2, 5, 2 \}$

40% of 5 = 2

**At Time 8:**

P1 can be interrupted. P2 has a better AGAT factor than P1 and P3 so it's picked to run now. Recalculate AGAT Factors.

$\text{Max(Remaining Burst Time)} = 12 > 10$  Then  $V2 = 1.2$

$\text{AGATs} = \{ 16, 6, 18, 16 \}$

$\text{Quantums} = \{ 5 + 3, 5, 5, 2 \}$

40% of 5 = 2

**At Time 10:**

P2 can be interrupted. No other process has a better AGAT Factor. P2 continues. No need to recalculate AGAT Factor.

**At Time 11:**

P2 finishes executing. Next process in ready queue is picked to execute (P3) and now P2 will be removed and we will ignore it in further calculations. Recalculate AGAT Factors.

$\text{Max(Remaining Burst Time)} = 12 > 10$  Then  $V2 = 1.2$

$\text{AGATs} = \{ 16, \_, 18, 16 \}$

$\text{Quantums} = \{ 8, \_, 5, 2 \}$

40% of 5 = 2

**At Time 13:**

P3 can be interrupted. P1 has a better AGAT factor than P3 so it's picked to run now. Recalculate AGAT Factors.

$\text{Max(Remaining Burst Time)} = 12 > 10$  Then  $V2 = 1.2$

$\text{AGATs} = \{ 16, \_, 16, 16 \}$

$\text{Quantums} = \{ 8, \_, 5 + 3, 2 \}$

40% of 8 = 3.2 rounded , Rounded to nearest int is 3

**At Time 16:**

P1 can be interrupted but since P3 doesn't have a better AGAT factor, P1 stays running. No need to recalculate AGAT factor.

### At Time 21:

P1 finished it's quantum. Next process in ready queue is picked to execute (P3) and P1 is added to the back of the ready queue. Recalculate AGAT Factors.

Max(Remaining Burst Time) = 8 <= 10 Then V2 = 1

AGATs = { 10, \_, 17, 16 }

Quantums = { 10, \_, 8, 2 }

40% of 8 = 3.2 rounded , Rounded to nearest int is 3

### At Time 24:

P3 can be interrupted. P1 has a better AGAT factor than P3 so it's picked to run now. Recalculate AGAT Factors.

Max(Remaining Burst Time) = 5 <= 10 Then V2 = 1

AGATs = { 10, \_, 14, 16 }

Quantums = { 10, \_, 8 + 5, 2 }

40% of 10 = 4

### At Time 28:

P1 finishes executing. Next process in ready queue is picked to execute (P3) and now P1 will be removed and we will ignore it in further calculations. Recalculate AGAT Factors.

Max(Remaining Burst Time) = 5 <= 10 Then V2 = 1

AGATs = { \_, \_, 14, 16 }

Quantums = { \_, \_, 13, 2 }

40% of 13 = 5.2, Rounded to nearest int is 5

### At Time 33:

P3 finishes executing. Next process in ready queue is picked to execute (P4) and now P3 will be removed and we will ignore it in further calculations.

Since there are no more processes left we won't show the AGAT factor recalculation. P4 executes at it's leisure.

### At Time 37:

P4 finishes executing.

## Final Sequence

P1	P2	P1	P2	P3	P1	P3	P1	P3	P4	
0	3	6	8	11	13	21	24	28	33	37